

# Perspectives on Kurdistan's Economy and Society in Transition



Perspectives on Kurdistan's Economy  
and Society in Transition:  
Volume II

Edited by

Almas Heshmati, Alan Dilani  
and Serwan M.J. Baban

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**P U B L I S H I N G**

Perspectives on Kurdistan's Economy and Society in Transition: Volume II,  
Edited by Almas Heshmati, Alan Dilani and Serwan M.J. Baban

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# SPEECH OF PRIME MINISTER NECHIRVAN BARZANI<sup>1</sup>

**At the 2nd World Kurdish Congress, Saad Palace  
Conference Centre, Erbil, 13 October 2012**

Ladies, gentlemen and distinguished guests, good morning.

I wanted very much to be here with you today, but unfortunately I have had to change my plans due to some unforeseeable circumstances.

In any event, I would like to welcome you to the second day of this important forum and assure you that this initiative has my full support.

This congress has been designed to draw on your expertise in order to help address the many challenges that we face, and I have no doubt that this is a project that will continue to benefit all of us for many years to come.

## **1. Challenges facing the Kurdish nation**

Never before in our history have the Kurds seen as much opportunity, nor as much at risk as we do today. The challenge for all of us is to find ways through the current uncertainties to build a bright future for all generations of Kurds, wherever they may live.

In all of the different places we live, we each have our unique challenges. Here in the Kurdistan Region we enjoy a greater level of political and economic freedom than we have ever had before. Yet, we find ourselves locked in a struggle to see the implementation of the constitutional guarantees that give the greatest hope for the future of all Iraq's peoples.

Our brothers in neighbouring countries each face their own unique challenges, and those of you who are living in the Diaspora have faced the difficulties of relocation and starting over, as well as the ongoing struggle to remain connected to your family and culture.

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<sup>1</sup> The speech was read by Minister Ali Saeed, as the Prime Minister was unable to attend.

However, whatever difficulties there may be, there has never been a time that holds more promise for our people than now. Major developments and changes are taking place throughout the Middle East and the broader region, and the progress that we have achieved here in the Kurdistan Region of Iraq has opened many new opportunities. We find our brothers and sisters moving into new areas of professional and political life throughout the developed world, and families that have fled persecution are now finding peace and prosperity in their new homes.

## **2. Developing common views**

We live in changing and uncertain times, and it is not clear what the future may hold for any of us. However, the greatest single issue facing the Kurdish nation now is that we find ourselves pulled apart by issues that are specific to our own unique circumstances, and these divisions keep us from realizing our full national potential.

We need to develop common objectives and strategies which support our people wherever they might live. We need to reach an agreement to rally support around broad principles:

a. The legitimacy of the culture, history and heritage of our people must not be denied, or undermined.

We have begun major initiatives to preserve and explore our heritage through cooperative archeological projects, through restoration projects on significant historical sites, and through beginning to establish museums and cultural centres in areas throughout the Region.

From the restoration of the Erbil citadel and the museums in this city, to the ancient stone carvings in Duhok, Shanidar cave, the three tanks marking the limit of Saddam's advance at Kore, the Red Prison in Slemani, and the Halabja memorial, we are working to ensure that future generations do not forget where we have come from or what it has cost us to get here.

Along with many other government institutions, the Kurdistan Regional Government (KRG) Ministry of Martyrs and Anfal Affairs has done a great deal to raise awareness and help gain recognition for the genocide against our people, and your support and contributions to this effort could have a significant impact on the lives and mental wellbeing of those who have paid the greatest price for the freedoms that so many of us now enjoy. You can help on every level, from talking to your friends, to organising petitions and information campaigns or leveraging political connections to draw attention to this issue.

The relevant KRG ministries are both working to build on other efforts in this sector as well. Archeological projects continue to progress in partnership with major universities abroad, and efforts are under way to increase public access to the many historic sites here in the Region through better maps, guides and literature on them and through initiatives to protect the sites themselves.

Even with all of this, there is still much that can be done in these areas as well. Regardless of your level of access to funding or experts in a specific field, you can get involved through helping organise events to celebrate our national holidays in your communities abroad or further improve and expand the preservation of our history and culture here through pursuing your own support initiatives.

b. Kurds everywhere are entitled to participate in their own decision-making within democratic, federal, and pluralistic state structures.

As John Locke articulated more than 300 years ago, governments are an extension of the people that they govern. Accordingly, our relationship with government is such that we each, individually give our consent to be governed in order to ensure our greater good and overall security. Because we all enjoy the freedom of this choice, the right to just representation in government is a basic human right that has been given to us by nature itself.

The 1992 elections which established our Parliament and led to the creation of our government, and the elections that we now hold to determine its makeup are the primary means by which we recognize and exercise this natural right.

The protection of this natural right is also why we have worked so hard to ensure the implementation of the Iraqi Constitution, the rule of law and equal representation in the Federal Government. The atrocities of our past have taught us that this is a right we cannot take for granted. We will never again accept a Federal Iraqi Government that does not recognize our rights through including us as active participants in its operations.

As our brothers and our natural representatives abroad, you are perfectly situated to support us in this effort. You can help to preserve all of our rights by ensuring that the excesses of the Federal Iraqi Government do not go unnoticed. You can articulate the circumstances and realities of Kurdistan to your friends and colleagues abroad, and you can help build partnerships to expand and improve the strength and effectiveness of our civil society here in Kurdistan.

c. Our objective must be a peaceful and democratic transformation to a more modern and pluralistic environment where our people can pursue their hopes and dreams free from fear and persecution.

The struggle to ensure one's rights is often very tough, and there have been many times in human history when armed resistance was required in order to exercise these rights. However, we do not live in one of those times. The resistance movements of Mahatma Gandhi, Martin Luther King, Nelson Mandela all revealed that major political victories can be achieved through peaceful means.

We must continue to struggle for our right to use our language, to celebrate our heritage, to have a voice in our governance and to be treated as equal citizens. These are all reasonable and defensible rights; however, we must not allow our actions in protection of them to overshadow or remove our dignity as we continue the struggle. We must agree to continue achieving recognition of these rights through peaceful means.

Many peaceful avenues are now available to us. Through the opening of Kurdistan to the international community since the fall of the former regime, our story is now being told all over the world. We now have 26 foreign representatives here in Erbil and 14 KRG representations abroad that all help bring international attention to these issues.

Hundreds of NGOs and other civil society institutions are already operating here in the Region. We have members of our Diaspora in democratic institutions and positions of influence around the world. Universities, academic institutions and international courts are open to us, and we have an active press corps, though it admittedly needs better training and an oversight body to ensure adherence to international standards of journalism.

All of these provide channels for action that will not undermine our struggle for international recognition and sponsorship of our rights.

d. Kurds everywhere need to work together as one to achieve rights and liberties for all our people, regardless of where they may live.

One of the oldest and most proven factors of political success is the strength of unity behind a common cause. As the old saying goes, "United we stand, but divided we fall."

We must take this ancient but simple truth to heart. We must look beyond our own private circumstances, and even beyond those of our immediate community. If we can all learn to reach for something bigger, if we can learn to subject our own private ambitions for the good of our greater cause, then I believe we will find our goals to be both manageable and well within our grasp.

No matter what field you are in or what your expertise may be, I encourage you to be a force for unity. Lead the way through being an example of how we can work together, and challenge others to do the same.

### **3. Value and help from the Kurdish Diaspora**

We have of course made much progress, but there is still much more that needs to be done, and we need your varied education and experience to achieve our goals.

We cannot do this alone, and this is why we have given such broad-based support for this congress. This is an excellent opportunity for us to explore how we can all learn and benefit from each other in order to move forward.

With this important event as an example, the KRG can and is doing much to ensure our collective progress. However, public resources are limited and our future growth will be guaranteed by the strength of the free market and the success of the civil society in Kurdistan.

We can use your assistance in both the public and private sectors, but the private sector is where the greatest impact can be made. There is an old saying that, “necessity is the mother of invention,” and there is nowhere that creativity and invention are given more freedom to evolve than in the private sector.

We are surrounded by “necessities” in nearly every sector. You do not need to wait for someone to tell you where you can make a difference; find an area that you can improve, and take the initiative to make it happen.

### **4. Specific areas of interest**

Many of you have experience in vital areas of our economy, and we encourage you to utilize your talents for our greater good.

#### **Education**

At a congress involving academics from a wide variety of sectors and backgrounds, it would be unforgivable of me if I failed to mention the significant efforts that can be made in this important field.

From spreading awareness through your daily involvement with students and colleagues, to writing papers, conducting research programmes and building links between our respective universities, the

sky is the limit to how effective you can be in promoting unity and progress in a wide variety of sectors.

We are now partnering with a great number of international universities through our HCDP scholarship programme, and you could also help to contribute in this either through encouraging the participation of your own institutions, or through mentoring scholarship recipients as they live and work abroad, or both.

## **Agriculture**

Though I will leave the details of this topic Minister Baban here, this sector is one of the most important areas that needs improvement both here in the Kurdistan Region and for the rest of Kurdistan as well. In addition to the tremendous political benefit of providing food security for our people, this sector also has the potential to provide a renewable source of income as well as many new jobs for our people.

As you all know, our people have a rich agricultural history, and our land and water resources indicate that we could easily be a net exporter of many food products.

Your expertise in any part of this field could be tremendously useful, from helping establish functional packaging and distribution networks, to introducing new practices and technology, to helping establish research centres and partnerships with agricultural programmes in foreign universities. We could also benefit greatly from the development of aquaculture and the introduction of many new crop varieties to the Region.

## **Healthcare**

Many of you are probably aware that the limits of our local healthcare system have been receiving a great deal of attention lately. From concerns over the quality of medicine to the availability of professional care, much has been made of the areas that need improvement in our system.

The KRG has responded to these concerns by launching a number of programmes, including a major quality control programme for pharmaceuticals in the Region which was launched just a few weeks ago. However, many of you have obtained expertise in this field during your time abroad, and your assistance through providing training workshops, telemedicine consultation, hospital partnerships and other initiatives would be very helpful.

## **Archeology and tourism**

Another area that is of particular importance to our future is the preservation and public display of our national historic treasures. The full development of this sector would provide a wealth of information on our history and heritage, but it would also facilitate further international awareness of our needs and struggles, as well as create a significant additional source of annual revenue.

As part of the ‘birthplace of civilization’, the Kurdistan Region alone has over 3,000 known archaeological sites, several of which will likely soon become UNESCO World Heritage Sites. Many other sites exist just across our borders, and there is no question that this is an area of significance for all of Kurdistan.

Though our Region is still largely undiscovered by many in the international community, we are now hosting around 2 million annual tourists, and this number has grown by more than 30% for several years in a row.

Your input in this sector by providing additional links to self-funded research teams abroad or organizing professional artifact preservation, museum development or tourism promotion projects would be a significant contribution.

## **Other opportunities**

As I mentioned before, there are literally limitless opportunities for your efforts to make a difference here in Kurdistan, and choosing where you will get involved is likely far less important than the fact of your involvement itself.

You could make significant contributions to the fields of industry, finance, health, communications, and many more.

However, whichever sector and in whatever capacity you choose, please remember that unity must be our foundation if we want to achieve overall success. Personal ambition and private gain must not be allowed to continue driving a wedge of separation between us.

Regardless of your area of expertise or your level of success in your field, you can help to spread awareness and build connections within the communities where you work and live.

You can work with our KRG Representatives abroad to promote solidarity amongst the Kurdish communities abroad and to keep our language and culture alive.

You can help to form partnerships in the industries and institutions where you work in order to expand our local capacity and build bridges for our people.

And finally, you can lead by setting an example of how to build unity and cooperation in working toward our collective goals and encourage others to do the same.

I would like to take this opportunity to thank you all for coming, and I would like to extend a special thanks to all of those who worked to help organise this important event.

I wish you all a productive congress.

Nechirvan Barzani  
KRG Prime Minister  
Erbil, 13 October 2012

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## LIST OF ABBREVIATIONS

1G	First Generation System
2G	Second Generation system
ALMI	A state-owned investment bank to finance development of small businesses
AMT	Advanced Manufacturing Technology
ASTM	American Society for Testing and Materials
AUTM	Association of University Technology Managers
B2C	Business to Customer-
BAFO	Best and Final Offer
BMBF	German Ministry for Education and Research
BOO	Build Own Operate
BOT	Build Operate Transfer
C2B	Customer to Business
CCU	Central Control Unit
CDMA	Code Division Multiple Access
CMS	Center for Migration Studies
CNC	Computer Numerically Machine Control tools
CO2	Carbon Dioxide
CPA	Comprehensive Peace Agreement
CRC	Convention on the Rights of the Child
CSA	Campylobacter Selective Agar
CSIRM	Centre for Science Informatics and Research Management
CTV	Clinical Target Volume
CV	Curriculum Vitae
DBFO	Design Build Finance Operate
DFR	Department of Foreign Relations
DCS	Digital control systems
DIBH	Deep Inspiration Breath-hold
DIS	Danish Immigration Service
DNA	Deoxyribonucleic Acid
DNB	Norwegian Bank
DoIT	Department of IT
DSM	Diagnostic and Statistical Manual
DVB	Digital Video Broadcasting
ECHR	Convention for the Protection of Human Rights and Fundamental Freedoms

EG	E-Government
EGRK	Encumena Gel e Rojavaye Kurdistan—the Western Kurdistan People's Council
ENKS	Encumena Netewiya Kurden Suriya—the Syrian Kurds' National Council
EOK	Essential oil of Kurdica
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FB	Free Breathing
FDI	Foreign Direct Investment
FTZ	Free Trade Zone
G2B	Government to Business
G2C	Government to Citizens
G2G	Government to Government
G-7	G-7 Countries
GDP	Gross Domestic Product
GIS	Geographic Information System
GMG	Global Migration Group
GNP	Gross National Product
GNSS	GulfNet Security System
GP	General Practitioner
GPC	Gel Permeation Chromatography
GPS	Global Positioning System
GSM	Global System for Mobile Communications
HCDP	Human Capacity Development Program
HMI	Human–Machine Interface
HR	Human Resource
HRE	Human Rights Education
HRQOL	Health Related Quality Of Life
HTDZ	High-Technology Development Zone
IADH	International Academy for Design and Health
IC	Integrated Circuit
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Cultural Rights
ICRC	International Humanitarian Law—Treaties & Documents
ICT	Information and Communication Technology
ID	Identity Card
IDP	Internally Displaced Persons
IKP	Iraqi Kurdistan Parliament
IMF	International Monetary Fund

IOM	International Organization for Migration
IQD	Iraqi Dinar
IT	Information Technology
ITN	Invitation to Negotiation
ITU	International Telecommunication Union
KDP	Kurdistan Democratic Party
KNA	Kurdistan National Assembly
KRG	Kurdistan Regional Government
KRI	Kurdistan Region of Iraq
LADCA	Left Anterior Descending Coronary Artery
LDC	Less Developing Countries
LISREL	Linear Structural Relationships
MDG	Millennium Development Goal
MDT	Multiple Discrepancies Theory
MHE	Ministry of Higher Education
MIC	Minimum Inhibitory Concentration
MIGA	Multilateral Investment Guarantee Agency
MLD	Mean left Lung Dose
MMS	Multimedia Messaging Service
MNC	Multinational Corporations
MoA	Ministry of Agriculture
MoAWR	Ministry of Agriculture and Water Resources
MoC	Ministry of Communications
MoE	Ministry of Education
MoHESR	The Ministry of Higher Education and Scientific Research
MoLSA	Ministry of Labour and Social Affairs
MoMA	Ministry of Martyrs and Anfal Affairs
MoP	Ministry of Planning
MoTAC	Ministry of Transportation and Communications
MTV	Music Video TV channel
MWh	Megawatts hours
NGO	Non-Governmental Organization
NIH	National Institutes of Health
NPV	Net Present Value
NRDP	National R&D Program
NSF	National Science Foundation
OD	Optical Density
OECD	Organisation for Economic Co-operation and Development
OFFP	Oil-for-Food Programme
ONR	Office of Naval Research
OSCE	Copenhagen documents

PAC	Programmable Automation Controller
PC	Personal Computer
PCT	Patent Cooperation Treaty
PDA	Personal Digital Assistant
PGCET	Post Graduate Engineering Common Entrance Test
PJAK	Partiya Jiyana Azad a Kurdistan
PKK	Partiya Karkeren Kurdistan—the Kurdistan Worker's Party
PLC	Programmable Logic Controller
PPP	Public-Private Partnership
PRG	Partial Risk Guarantees
PUK	Patriotic Union of Kurdistan
PWC	Price Waterhouse Cooper
R&D	Research and Development
R&E	Research and Education
RPFMGS	The Rights and Privileges to Families of Martyrs and Genocide Survivors
RTU	Remote Terminal Unit
SBTDC	Small Business and Technology Development Center
SCB	Swedish Bureau of Statistics
SMS	Short Message Service
SPLM	Sudan People's Liberation Movement
SSN	Social Safety Net
SWB	Subjective Well-Being
SWOT	Strength Weakness Opportunity Threats analysis
TPIS	Traffic Police Information System
TPS	Treatment Planning System
TTED	Technology Transfer and Economic Development
TTO	Technology Transfer Office
TWh	Terawatts hours
UDHR	Universal Declaration of Human Rights
UK	United Kingdom
UKH	University of Kurdistan Hewler
UMAMET	UN Mission in East Timor
UMTS	Universal Mobile Telephone Services
UN	United Nations
UNDP	United Nations Development Programme
UNE	United Arab Emirates
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNGEI	UN Girls' Education Initiative
URISA	Urban and Regional Information Systems Association

USA	United States of America
USAID	United States Agency for International Development
USDA	United State Development Agency
USD	United States Dollar
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNESCO	The Universal Declaration on Cultural Diversity
VFM	Conversation Management Service
VINOVA	Swedish Governmental Agency for Innovation Systems
WAP	Wireless Access Protocol
WCED	World Commission on Environment and Development
WEF	World Economic Forum
WIDER	World Institute for Development Economics Research
WiFi	Technology that allows an electronic device to exchange data wirelessly
WIPO	World Intellectual Property Organization
WKC	World Kurdish Congress
ZUMA	Center for Survey Research and Methodology in Germany

## CHAPTER ONE

### INTRODUCTION AND SUMMARY OF CONTRIBUTIONS

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This volume is a collection of twenty-seven studies presented at the Second World Kurdish Congress held in Hawler on October 11–15, 2012. The presentation topics are diverse, covering several areas pertinent to the current Kurdish situation. We have divided the studies into ten distinct areas of research, including agriculture and rural development, diaspora, education and research, health and quality of life, industry, information technology and e-government, infrastructure and development, language and human rights, politics, and summary reports of the congress. A brief summary of the studies in each section in alphabetic order is presented in this introductory chapter.

## **Part I: Agriculture and Rural Development**

Baban (chapter two) discusses achieving sustainable food production and security in the Kurdistan Region. During the 1960s and up to the 1980s, the region was self-sufficient in the production of food and used to export it to the centre and south of Iraq as well as some neighboring countries. Unfortunately, the conflicts and years of unrest in the region before 1991 and the United Nations Security Council-imposed Oil for Food program had a negative effect on Kurdistan's agriculture. Consequently, Kurdistan went from being a producer to a consumer in a short period. This study discusses the process of rehabilitating and improving the agricultural sector through an objective road map. The process specifies the priorities, objectives, timeframes, mechanisms as well as the challenges and risks involved.

In another related study (chapter three), Baban discusses how to build a secure future based on the realization of sustainable development in the Kurdistan region. The region is undergoing rapid economic development, population growth and urbanization. This can lead to an increase in demand for resources such as water, land and building materials; these in turn will produce industrial and domestic waste. The process is associated with a continuous degradation of natural resources and the environment. Baban argues that the specific conditions in the region, the physical nature and unavailability of reliable information for decision making necessitates the use of Geoinformatics as a tool to sensibly utilize and conserve the environment and natural resources whilst furthering the development process for achieving sustainable development.

The principles of international humanitarian law on landmines refer not only to the use of landmines, but also to their production and supply. Heshmati and Khayyat (chapter four) address the military necessity and the proportionality and adaptation of the use of landmines. In order to curb serious violations of the law, establishing a special international court which deals with violations of international humanitarian law is suggested to act as a deterrent to violations. The Kurdistan region has been massively contaminated by landmines and unexploded ordnances. This is a major obstacle for development and economic growth. This work emphasizes the social, health, education and economic impacts of mines and their legal consequences. A number of policy recommendations are provided to prevent their future use and to take legal actions against landmines users for clearance, rehabilitation and compensation issues.

The study by Sharifi (chapter five) investigates the composition and biological activity of the trunk exudates of *Pistacia atlantica kurdica*, a

native Kurdish plant that produces kurdica gum. *P. Atlantica kurdica* is an important constituent of the natural vegetation in this area. Kurdica gum was fractionated and some of its fractions and chemical entities were found to be active against *Helicobacter pylori* (H. pylori) and some other Gram-negative and Gram-positive bacteria. Some fractions and chemical entities were found to have broad spectrum antimicrobial activities. Sharifi suggest that these chemical entities could represent viable lead compounds for commercial development.

## **Part II: Diaspora**

The frequency and duration of migration affects family structures and has psychological effects on the well-being of individual family members, and in particular has a complex impact on the mental health of children. In the case of migrations, even the crisis complexity may be aggravated over time. In this study, Anamaghi and Heshmati (chapter six) investigate the immigrant teenagers' identity crisis and behaviour. They analyse encounters against two Kurdish cultures and the culture of Denmark as a host country. This will help to identify some factors creating identity crisis among the Kurdish youth and an attempt is made to find an optimal solution to tackle the issues, alternatively reducing their negative effects through different preventive measures.

In recent decades, a Kurdish diaspora has begun to appear and its emergence has influenced the nature of the Kurdish question. Akkaya (chapter seven) studies how the ongoing nation-building process in Iraqi Kurdistan affects the Kurdish diaspora. It explores how the long enduring Kurdish struggle for nationhood and the relatively new transnational space of the Kurdish diaspora can interact and how changes take place in both spaces. Akkaya argues that the Kurdish diaspora has responded to the developments in the homeland through different forms of diaspora circulation, rather than returning to the homeland, as supposed in previous studies. More importantly, people in the diaspora develop a distinct identity in a very general sense. This identity refers to a duality between homeland and diaspora, a sense of belonging to both.

## **Part III: Education and Research**

The development process requires highly skilled professionals to deliver and manage it. The majority of higher education institutes in developing countries are not capable of generating professionals possessing the necessary knowledge and skills to actively contribute to sustainable

development. This is mainly due to the fact that higher education institutes were traditionally developed with a mandate to educate and qualify the public servants without consideration for market forces or competition. Improving higher education is the foundation for development. However, reforming higher education as a system is a difficult task. Baban (chapter eight) focusses on the challenges facing forward-looking universities in developing countries, and presents the University of Kurdistan Hawler as a possible model for an independent international university leading reform.

Research and education (R&E) are fundamental to the advancement of human societies. These two inseparable concepts are in a constant mutual feeding cycle. In a traditional R&E system, disciplines are independent entities in which students receive a depth of knowledge in one field of study. Graduates of a disciplinary R&E system usually lack the skills to develop and perform multi- or inter-disciplinary research. To address the shortcomings of disciplinary R&E, developed countries have adopted a multi- and inter-disciplinary strategy. Ebrahimi (chapter nine) provides an overview of approaches to R&E and their differences. The nature and dynamics of R&E in developed versus undeveloped countries are then demonstrated. Several suggestions in relation to the advancement of R&E in Kurdistan are provided.

## **Part IV: Health and Quality of Life**

Conventionally, breast cancer patients are treated in normal free breathing (FB). Lately however, respiratory adaptive radiotherapy has enabled the tracking and monitoring of the patient's breathing cycles. Thus, the patient can be guided to hold her breath in deep inspiration (Deep Inspiration Breath-hold [DIBH]) during CT-simulation scan and treatment delivery. Baker et al. (chapter ten) evaluate cardiopulmonary and Left Anterior Descending Coronary Artery (LADCA) receiving doses for patients acquired in dual-CT-scans. The aim is to investigate the potential of improving CTV dose coverage by the prescribed dose.

Since clinical encounters between patients and healthcare providers are the first step in the diagnosis and treatment procedure, a satisfactory contact is essential. Ingredients that are necessary for an adequate encounter are often highlighted, and professional and caring attitudes and empathy are frequently mentioned in this context. The caring attitude, humanity, implies a talent to bring about respect and esteem for the patient. The patient usually has less power than the provider and is dependent on the knowledge and competence of a staff member. A trustful co-operation needs to be aimed for and the self-esteem of the patient must

not be diminished. Fatahi (chapter eleven) discusses the importance of satisfactory clinical encounters in health outcomes and patient satisfaction

There is a growing population base in Kurdistan and the surrounding nations that suffer from damaged joints and amputations. This is a demographic that requires special attention and treatment to allow them to return to a fulfilling and productive lifestyle. This project's goal is to create the Rehabilitation and Computerized Prosthetics Center of Kurdistan, a facility that attends specifically to this rather large patient demographic. This initiative by Hakki and Ali (chapter twelve) requires attention towards three main points to be successful. These are a center that is well-stocked and well-built, with top-notch surgical facilities and large, ample rehabilitation facilities, innovative and state-of-the-art technology in surgery, prosthetics and rehabilitation, and the faculty must be extremely well trained in the latest techniques of their practices. If these points are attended to, then this venture will provide benefit for three major groups.

Quality of life research and social reporting today belong to the most pragmatic research disciplines in social sciences and sociology. Analysis of quality of life in Kurdistan or within its Kurdish population may have indirectly been discussed in some research or academic writings, but have never been considered as a holistic, scientific regard. In a series of field analyses started in 1999, and continued until 2011, the author has tried to examine the subjective quality of life of some Kurdish populations, in and outside Kurdistan. In the study by Rahmani (chapter thirteen), some major findings shed light on the well-being and general quality of life of Kurds for the first time.

## **Part V: Industry**

Developing and producing automated production machines and systems is one of the most important and necessary ingredients and steps towards a fully developed industrial society. Rasul H. F. (chapter fourteen) analyzes the opportunities and obstacles for such development in the Kurdistan region, addressing its historical background, necessary prerequisites for industrialization, the required political and economic environment, as well as education and training needs. The focus areas are the derivation of required actions and measures that should be taken. Recommendations for building necessary conditions for industrialization and technical development are given, entrepreneurship and co-operation with international companies are proposed and the impact of industrialization on the environment is highlighted.

## **Part VI: Information Technology and E-Government**

The advancement in information and communication technologies, and the emergence of the internet, have made it possible to deliver public services at more convenient locations, much closer to the citizens, such as kiosks located at shopping malls, for example. Also, it has made it possible to get these services through mobile devices and personal computers located in homes or business offices. Khorsheed and Khailany (chapter fifteen) discuss the benefits, requirements and the methodology for developing E-Government, including best practices and lessons learned.

E-Government (EG) is about harnessing the information revolution to improve the lives of citizens and the efficiency of the government processes. If appropriately adopted, it promises transparency of government's processes as well as citizens' participation in its affairs. However, EG projects are huge undertakings and, therefore, world governments are at different levels of EG adoption. In this study (chapter sixteen), Mahmood explores the efforts of the Kurdistan Regional Government towards adoption of EG. The challenges are highlighted and some thoughts are presented with respect to successful implementation and adoption of electronic government in the region.

In today's fast moving world, quality of higher education is fundamental to a sustainable economic development. Sustainable growth of investment in the quality of higher education is considered an important measure of scientific and economic development. The challenge in developing and underdeveloped countries usually begins with skills. Sanati (chapter seventeen) points out the typical shortcomings in a region like Kurdistan that causes the aforementioned problems, and suggests an innovative solution to overcome the impediments of creating a sustainable knowledge society. This solution involves a centralised research management model and establishment of a research centre for applied science informatics.

The developments of mobile communications along with the huge penetration of mobile users across the globe enables cost effective usage and transforms public service delivery. Shareef and Arreympi (chapter eighteen) investigate mobile government developments within the wider context of e-government in the Kurdistan region. The precise efforts made by both the developed and advancing countries in utilizing the latest technologies and applications for enhancing E-Government are explored. The main contribution is to propose an architectural design for mobile government application through utilising the mobile GPS used in the

Kurdistan region traffic police information system, to identify and establish the identities of drivers and vehicles in real time.

## **Part VII: Infrastructure and Development**

Heshmati (chapter nineteen) provides a critical review of the first regional development strategy for the Kurdistan region covering the period 2012–2016. The objective is to provide a list of corrective and suggestive measures to continuously update the document. The review is conducted in several steps, including: discussion of the importance of the strategy, descriptions of each sector in respect of its specific characteristics, potential and challenges, the correspondence between the required structure and those of the actual development strategy are assessed based on findings about its strength and shortcomings, a list of modifications to be incorporated in Ministry of Planning's revision of the document are provided, and finally a list of potential areas of development strategy related to research targeting researchers and graduate students is provided.

Globalization and advances in science and technology have expanded the importance of intellectual property. Universities provide a number of synergies in technology innovation for a government to leverage through funding and policy. Hakki and Hakky (chapter twenty) discuss the resources required, including government grants, tax incentives, loans and scholarships targeted at encouraging research in areas of the government. Research can potentially provide improvements to issues specific to Kurdistan, such as agriculture, medicine, education standards and petrochemicals. The universities in Kurdistan should address the concerns within the region to develop the local economy. The creation of technology development departments and intellectual property laws are vital aspects of this process.

Rasul (chapter twenty-one) covers foresight methodologies for the analysis of the long-term future of a country/region, using these methods for the derivation of possible scenarios for a country fifteen to thirty years in the future. Rasul addresses and describes a strategic pathway, how to build and describe future scenarios applied for the Kurdistan region, covering in these scenarios the development and building of strategically important areas of the economy. These involve legal and political frameworks for economic growth, new sectors in economy, changes of social values, technology advancement, market conditions, investment, research and development, and education.

Development of infrastructures has fundamental roles in the economic and social growth of developing countries. The budget limitations of

governments is a main reason to engage the private sector in such projects to leverage required funds, technical and managerial capacity, and the creativity and innovation of the private sector. For this purpose, the Public-Private Partnership (PPP) has become a popular way to help governments in various projects. Rostami and Zhian (chapter twenty-two) present an overview of different categories of PPPs, analyze their characteristics, consider the current situation of Kurdistan, and discuss the requirements that affect applying these models in Kurdistan for the case of education projects.

### **Part VIII: Language and Human Rights**

Bajalan, in this study (chapter twenty-three), provides a comparative analysis of state policies in Iraq and Turkey in relation to the Kurdish minoritys' use of their mother tongue. In the international law there is no coherent understanding of the state's obligations towards minority language rights. However, to gain international respect and to promote inclusiveness in its population, the state inevitably has to reform its policies, though it remains reluctant to such reform.

Oster and Yahya (chapter twenty-four) examine the potential of human rights education (HRE) to contribute to democracy, development and social justice, specifically gender equity. The study is based on fieldwork in the Kurdistan region, including classroom observations and interviews with teachers and school inspectors. They examine tensions in implementing HRE, including those for policy-makers, juggling the demands of nation-building and its application through schooling and child rights. They propose principles for policy-makers and teachers to support effective HRE, good governance, sustainable development and quality education.

### **Part IX: Politics**

The literature on the Kurdistan region mainly focuses on the historical aspect of the Kurds' struggle. The literature lacks frameworks for examining the feasibility of an independent Kurdish State in Iraq. Barzani (chapter twenty-five), in providing the necessary framework for the Kurdish case, focuses on two mains issues: the right of the Kurdistan Region of Iraq to become independent and the feasibility of achieving independence. Barzani concludes that, theoretically, the Kurdistan region of Iraq has the right to self-determination and to declare independence. However, this right is deterred by geopolitical circumstances. The

feasibility of independence greatly depends on surmounting those geopolitical barriers.

Irwani (chapter twenty-six) examines policy implementation theories, taking into account two social security programs of KRG as a case study: “Rights and Privileges to Families of Martyrs and Genocide Survivors” and “Social Safety Net.” Two questions directed the research: why has the KRG not adopted and implemented an effective social policy, and why has the KRG implemented its main two social cash transfers differently. Exploring these cases would help to understand the extent to which the political conditions of the Kurdistan region have influenced the status of social benefit programs and their implementation. The result shows that the KRG deals with social cash transfers in accordance with profile, socio-political status of beneficiaries.

Keskin (chapter twenty-seven) analyzes the process from nation building to nation-state building process in Southern Kurdistan following the establishment of a Safe Heaven and a No-fly Zone for its civilians. The political leadership took the opportunity of creating institutions, such as the national assembly, executive, judiciary, education, economy, military and diplomacy. Those institutions were the first fundamental elements of the emergent nation building. The author argues that Kurdish nationalism is unlikely to fail this time, because the process of nation building has evolved to the institutionalized stage of an “undeclared independent state.” Nation building and nation state building are therefore interlinked and intertwined. The focus here is on three points: the historical legacy of the struggle as the dynamic of nation building, opportunities and challenges, and building institutions as the fundamental elements of transition from democratic nation building to democratic nation state building.

## **Part X: Summary Report of the Congress**

The WKC has sought to organize and mobilize the diaspora to meet the current and future challenges to support the Kurdish people and inspire the new diaspora generation to ensure their involvement in nation building and also that they participate in creating freedom for Kurdistan with their intellectual capacity. The WKC’s hope was to build a bridge between scholars both in and outside of Kurdistan, and through science and culture support government institutions and universities. Dilani and Prunhuber, in their capacity of members of the Organization Committee of the 2012 Congress, provide a summary report and an evaluation of the congress (chapter twenty-eight). This report examines the event as a whole—its many successes and its weak areas. It is a reflection of what the congress

achieved, what can be improved and what are the next steps for the future WKC events.

In summary, the above-mentioned discussions shed much-needed light on a number of current issues to be considered by Kurds, the KRG and its institutions in particular. Focusing on these matters will greatly aid the Kurds, as a nation, to move forward with a clear focus that is conducive to their cause and helps them to develop and become a recognized member of the international community—with both rights and obligations towards themselves as citizens and the environment—while developing their potential and contributing to the world at large.

Almas Heshmati, Alan Dilani and Serwan Baban (Editors)  
April 2013

# **PART I**

## **AGRICULTURE AND SUSTAINABLE DEVELOPMENT**

## CHAPTER TWO

# ACHIEVING SUSTAINABLE FOOD PRODUCTION AND SECURITY IN IRAQI KURDISTAN: CHALLENGES AND OPPORTUNITIES

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During the 1960s and up to the 1980s, Kurdistan was a region of agricultural produce and used to export it to the centre and south of Iraq as well as some neighbouring countries.

Unfortunately, conflicts and years of unrest in the region paralysed the agricultural sector and destroyed its infrastructure, up until the uprising of 1991. From that date until 1996, farmers tried to improve this sector but the United Nations Security Council 986 Resolution of Oil for Food had a negative effect on it. Consequently, Kurdistan went from being a producer to a consumer in a short period.

This chapter will discuss the process of rehabilitating and improving the agricultural sector through an objective road map based on a vision that aims to yield a locally produced, healthy diet. The process specifies the priorities, objectives, timeframes and mechanisms as well as the challenges and risks involved, and was developed based on consultations with specialists and stakeholders.

### **1. Introduction**

The agricultural sector is a key part of the culture, society and economy in the Kurdistan Region. Historically, Kurdistan has been a region of agricultural produce and a source of various crops such as wheat, chick peas, apples, peaches, grapes and others. Evidence shows that in the 1960s

and 1970s, Kurdistan provided central and southern Iraq with these products. The Kurdistan Region is also affected by rapid urbanization and global climate change (Baban 2005, 2012a).

The regional assets, including arable land and fertile soil, the varied topography and associated rainfall regimes, have created three basic micro-climatic zones; high rainfall (700–1100 mm), medium rainfall (400–700 mm), and low rainfall (under 400 mm). In terms of produce, the high-rainfall zone contains mainly fruit orchards, wheat occupies most of the medium-rainfall zone, and barley is the main crop in the low-rainfall zone. Winter wheat and barley are planted in the fall (October to November) and harvested in the late spring (April to June) in accordance with the rainfall patterns (Mahdi 2000)

In the rain-fed areas, a crop rotation system is often used to regenerate depleted soils and provide protection against pests and diseases. Under this system, a winter crop of wheat or barley was grown once every two years and alternate halves of a field were left fallow in successive years.

The estimated total areas for orchards, forests, meadows, irrigated land and dry lands are 1,358,000; 1,280,267; 1, 739,000; 177,406 and 62,230 hectares respectively (see Table 2.1 below). The size of areas used for planting wheat, oats, vegetables and fruits and the respective produce in tons for 2001 are listed in Table 2.2 below (MoA 2009).

Evidence shows that a number of significant transformations in the agriculture sector were driven and imposed by the central government. The first occurred during the late nineteenth century involving the breakup of tribal landholdings and the creation of large privately-held estates. This was followed, in 1958, by a radical land redistribution scheme involving the breakup of large land-holdings and the creation of state-enforced co-operatives. During the late 1970s the state imposed further controls on the sector. Then, several wars and conflicts occurred leading to paralysis of the agricultural sector and the distraction of its infrastructure until the uprising of 1991. From that date until 1996, farmers tried to improve this sector but unfortunately UN Security Council Resolution 986, known as the “oil-for-food programme,” which indiscriminately inundated the markets with food items, totally ignoring local production of grains and dairy products, had a severely negative impact on this key economic sector throughout the Kurdistan Region (Baban 2012a).

In short, Iraq’s system of land tenure, inefficient government implementation of land reform, and interventionist agricultural policies have had a profound impact upon agricultural relations and production, employment and investment decisions. The net effect has been a perpetuation of low productivity of farmers, slow growth of the

agricultural sector and an ever-increasing dependence on imports to meet domestic food needs.

Evidently, the case for rebuilding the sector including reforming the administrative system, as well as the culture, law, regulations and altering staff expectations and working habits, requires careful consideration before radical reform is implemented.

**Table 2.1 Different categories of agriculture in the Kurdistan Region**

Orchards	Irrigated land	Forests	Meadows	Dry-land farming
1,358,388	177,406	1,280,267	1,739,000	62,230

Source: MoAWR, 2009

**Table 2.2 Land used for planting various crops and product tonnage**

Crops	Land used for planting in 2011/ acres	Produce in 2001/tons
Wheat	2,601,238	500,000
Oats	743,389	70,000
Sun flower	11,189	10,500
Corn	9,169	20,000
Vegetation	396,830	407,889
Fruits	248,920	60,097

Source: MoAWR, 2009

## **2. Characterising Agriculture: Issues and Possible Solutions**

In order to actively promote political and social stability and sustainable agricultural development, decision makers should use every aid available to them as they attempt to best manage available resources. There is a need to reflect upon, and anticipate, the consequences of specific decisions. A logical way of making informed and objective decisions is to base them on all available information and to use an objective approach in arriving at appropriate decisions (Baban 2001, 2004)

It is clear that problems exist in the agricultural production zones in Kurdistan region making it unprofitable to bring locally-grown goods to the local markets. For example, agricultural productivity has suffered from a lack of pesticides and fertilizers under the economic blockade by the central government. The lack of petrol forced many villagers to search more widely for firewood, thereby accelerating an already acute

deforestation problem with all of its negative implications for erosion, soil fertility and local watersheds. A localised drought struck northern Iraq in 1996 and 1997, badly affecting the harvests. In addition to land conflicts, refugees and formerly deported Kurdish farmers returning to the region after the uprising found that their villages and land had been seized by neighbouring tribes or local landowners (MoAWR 2012; Baban 2012b).

A reflective analysis will indicate that this poor performance in agricultural production potential has most likely been influenced by several factors that occurred in the period leading up to the Iraq War of 2003. These include: a three-year drought that devastated agricultural production in much of the Middle East during 1999–2001; a growing dependence since early 1997 on the UN OFFP for basic foodstuffs, which has understated the need for local food production; the central government's focus on the military sector; failed policies, limited investment and deteriorating infrastructure; and serious land ownership and water rights issues (Mahdi 2000; Baban 2012c).

More specifically, realising a food sufficiency and security vision requires a particular focus on reviving village life through providing basic services in the rural areas and resolving land-ownership issues in the region. It is evident that people tend to work harder and more productively when they own their farmland. In addition to managing the market and protecting local produce, geographic location and the weakness of local production systems that cannot compete in a free market with cheap and mass-produced imported food from well-established and funded agricultural producers, the ministry needs to become a professional organisation managed by a workforce that is trained in modern management methods, ethics and technology to become fit for purpose and deliver the necessary services to the highest quality (Baban 2012b, 2012c).

Evidently, this sector needs to be rebuilt and prioritized in terms of resources to sustainably develop agriculture to diversify the economy, as a strong KRG economy requires a strong agricultural sector. Furthermore, agriculture is one of the most important sectors from a national food security perspective and it could become an important public revenue stabilizer at a time when oil revenue is very volatile, putting the government and its programs at risk. Additionally, the rehabilitation of this sector translates into reviving village life, creating more job opportunities, encouraging new industries, and upgrading our standard of living and people's living conditions (Baban 2012c).

All the above will be seen as a radical reform for the entire sector by introducing changes to the vital areas of production, including management, training, legislation, guidelines and methods of work.

The reform and associated changes need political decisions to be made and cooperation from all the parties involved—parliament, the political leadership, expert authorities, farmers and the people of Kurdistan.

More specifically rehabilitating and improving the agricultural sector in terms of process requires the following (MoAWR 2012):

- (1) A clear vision for specifying the priorities in order to achieve food sufficiency and security
- (2) An effective roadmap with clear objectives and a timeframe
- (3) Effective management systems for sustainable food production.

### **3. Planning for a Sustainable Future**

The survival and development of human societies has always depended on their interaction with the environment and humans endeavour to understand this interaction. Information is one of the most strategic factors influencing development (Baban 2002; 2004). Modern political and economic systems cannot function without a continuous interchange of reliable information. In fact, one of the barriers to sustainable development in developing countries is lack of information requisite for effective planning (Bernhardsen 1992; Baban 2004).

The Kurdistan region suffers from a scarcity of information and the unreliability of available data sets in terms of land use/cover, soils and topographic maps, in relation to detail and scale, to deal effectively with the issues previously raised. Obviously, this makes decision making for development planning and control, and managing agriculture, a difficult task. However, these obstacles can be mitigated through determining a strategy based on the available verified data and adopting evidence-based decision making (Baban 2004).

#### **3.1 Vision**

The objective of the ministry is to achieve food and water sufficiency and security. It is critical to deliver a healthy and nutritious diet to all citizens, and such a diet should be based on local produce. Within this context, the ministry is guided by the USDA approved standards (USDA 2011; see Table 2.3 below). In addition to sustainable development and serving all stakeholders in the best possible way, the Ministry will embark on continual review of its management and administrative systems to serve the ultimate purpose, namely, improving quality and raising standards to

achieve food and water sufficiency and security (MoAWR 2012; Baban 2012b, 2012c).

**Table 2.3 The list of individual needs of food according to global standards**

	Type of food	Units	Current capacity 2008	Our plan for 2013	USDA standard
1	Wheat	Kg/year	68	100	73.7
2	Chicken	Kg/year	5.9	19.6	65
3	Red meat	Kg/year	22.7	40	
4	fish	Kg/year	0.15	1.3	
5	Lentils and chick-peas	Kg/year	7	12	
6	Vegetables	Kg/year	54.6	132	
7	Fruits	Kg/year	12.5	50	65
8	eggs	Eggs/year	75	129	180
9	oil	Liter/ year	-	15	15.4WFP
10	Milk	Liter/ year	45	80	176
11	Honey	Kg/year	0.14	0.24	-

Source: USDA 2011

### **3.2 SWOT Analysis, Emerging Needs and Developing the Roadmap of the Sustainable Agriculture in Kurdistan**

The standard strengths, weaknesses, opportunities and threats (SWOT) analysis was applied to the ministry, and the need for the following emerged:

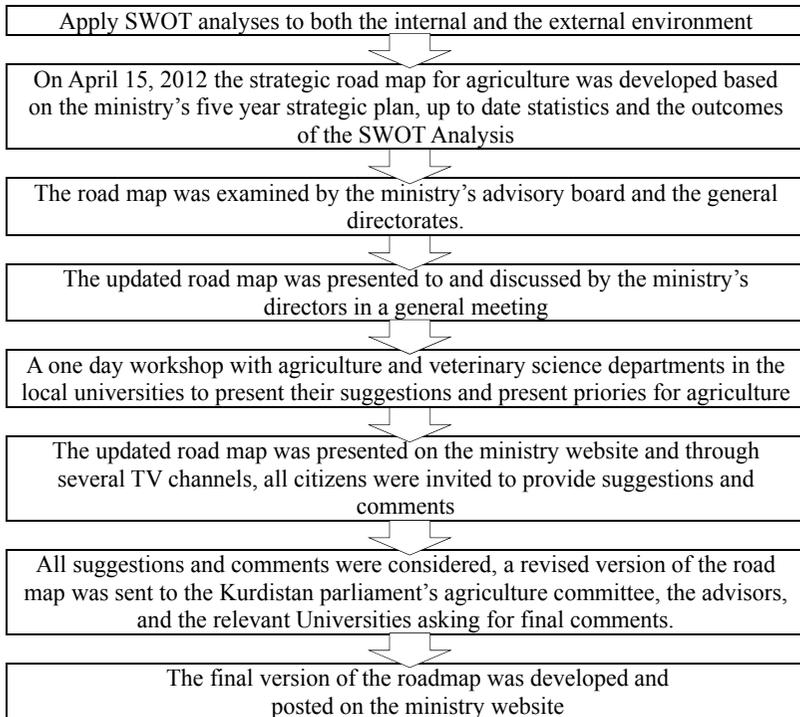
- (4) Protecting local production in the face of large quantities of imports and commodities from outside.
- (5) Supporting the private sector, in terms of finding markets for agricultural goods, initiating agro-industries and establishing domestic food industries.
- (6) Completing the agricultural business cycle, from the field to folk so that products reach the consumer through a full, integrated cycle.
- (7) Focusing on continuously improving the quality of products.
- (8) Adopting a holistic approach to manage all aspects of the agricultural sector, including forestry, horticulture, plant and

- animal production, poultry projects, animal husbandry, irrigation projects, and research and development.
- (9) Encouraging and utilizing improvement in scientific research and development through working with local and international universities and research centres.
  - (10) Changing the current management structure of the ministry following a Middle Eastern hierarchical structure. Managerial and financial decisions are concentrated at the top of the pyramid. Consequently, the ministry is suffering from a bureaucratic overload with complex and time-consuming decision-making processes. Therefore, there is a need to review the ministry's function, roles, structure and to match form with function.
  - (11) Enhancing the ministry's communication and information availability through establishing a website for the Ministry in three languages: Kurdish, Arabic and English. Visitors can obtain information, announcements, news, instructions and application forms. The website will help to reduce the number of personal visits by stakeholders often travelling hundreds of kilometres to access the ministry. In addition, the ministry needs to develop and use electronic communication systems as the main channel of communication and exchange of information between the ministry and the various institutes providing a better and more cost efficient service to stake holders.
  - (12) Reforming the system of staff recruitment and transfer, the aim is for the key appointments within the ministry to be carried out via a modern and transparent competition-based mechanism. Special guidelines should be issued to encourage all the institutes of higher education to advertise the posts, publish the associated job descriptions, form appointment panels and conduct interviews as fairly as possible. All interviews should be recorded and records saved for possible audit and scrutiny.
  - (13) Establishing a health and safety programme for the institutions of the ministry is a top priority, and an office for health and safety will also need to be established. The ultimate goal is to make the work environment healthier and safer for staff and stakeholders.

All these outcomes as well as available statistics charting the progress of the Ministry's five-year plan, which was established during 2009, regarding agricultural produce in terms of quantity and regional needs (MoA 2009), lead to developing a draft road map. This was gradually enhanced based the consultative process involving ministry experts, local

universities, farmers, the parliamentary group and the public (see Fig. 2.1 below).

Fig 2.1 The consultative process for developing the ministry roadmap



## 4. The Priorities and Objectives

The priorities are divided into two categories:

### 4.1 The immediate priorities

Preparing the ministry and its workforce to deliver the following strategic priorities:

- (1) Find solutions for the management problems and the ministry's structure.
- (2) Stimulate and increase the services.

- (3) Focus on providing a good standard of the main public services in all provinces.
- (4) The assessment of staff performance and setting of a transparent reward system.
- (5) Working on granting more support to the farmers and linking support to actual productivity in terms of quality and quantity.
- (6) Assess the entire ministry's staff based on their activities, overtime work, and increase production to achieve the priorities of the ministry.
- (7) Simplify the hierarchy and decrease bureaucracy by devolving authority and delegations.
- (8) Focus on public interest and how it should reflect on the ministry's work.
- (9) Improve observation, quality control and follow up.
- (10) Establish a professional website for the ministry in Kurdish, Arabic and English to facilitate data availability for visitors.
- (11) Establish an integral and continuous program to raise awareness among farmers and citizens about sustainable agriculture, including modern methods of cultivation and effectively using fertilizers and pesticides.
- (12) Encourage and facilitate the use of modern technology within the ministry.

## 4.2 The strategic priorities

- (1) Achieve food security and self-sufficiency.

This priority needs planning based on available data, Tables 2.4–2.10 show the actual produce of the Region for 2011 and the objectives for 2013 from the agricultural produce of poultry and eggs, red meat and milk, honey, fruits and fish. Tables 2.11–2.13 show forests and meadows, irrigation and the regional objectives to be achieved by 2013 (see Appendix for Tables 2.4–2.13). The level of production and regional needs in the tables are coded and as follows:

- (a) **No shading**—the region's production has achieved self-sufficiency (100% of what is needed)
- (b) **Light shading**—the region's production has achieved 50% or more of the required 100% of self-sufficiency.
- (c) **Dark Shading**—the region's production has achieved less than 50% of the required 100% of self-sufficiency.

- (2) Rebuild the agricultural infrastructure.
- (3) Create a suitable environment for farmers to return to their ancestral land by improving life in the countryside and rebuilding the villages by:
  - (a) Creating interests in the farms and supporting small and poor farmers.
  - (b) Encourage and support the farmers and the association of producer farmers to set up food industry projects in the villages and farms.
  - (c) Work with other ministries to support construction and housing, municipality and tourism, education and electricity.
- (4) Reform and improve the quantity and quality of food commodities adopting theoretical and practical work and using special technologies.
- (5) Supporting the private sector by:
  - (a) Finding markets for their produce.
  - (b) Encouraging the food industry and improving domestic produce and industry.
  - (c) Establishing specialized groups among farmers and supporting them.
  - (d) Protecting domestic production against imported produce in large numbers.
  - (e) Promote vital produce, especially wheat, oats, corn, and soya beans.
  - (f) Encourage organic and green house farming.
- (6) Revise, finalize and introduce relevant agricultural act rules and regulations, such as legislation for protecting forests, proposing legislation for protecting natural meadows, livestock and wildlife as well as legislation to control import of livestock and poultry:
  - (a) (the revised) Act number 3 for 1998 of allocating lands within the municipalities borders has been the cause of wasted arable land in the Kurdistan region, and to continue using this Act will result in losing the best farming land.
  - (b) The scientific farming rules and a specific law for the region's farmers must be established
  - (c) Legislation for protecting forests was completed four years ago and recently approved by the parliament.

- (d) Proposing legislation for protecting natural meadows, livestock and wildlife.
  - (e) Legislation to control the import of livestock and poultry.
- (7) Protection of human rights and achieving equality among the ministry staff by:
- (a) Adopting a health and safety program for both permanent and temporary staff.
  - (b) Reform the process of staff appointment by improving transparency and fair competition by advertising vacancies to the public.
  - (c) Focus on gender equality and promotion of the role of women and youth in the ministry.

## **5. The Policies**

To achieve the mentioned objectives, the main policies adopted along with this business plan are the following:

- (a) Encouragement of reverse migration to villages by creating agricultural economic opportunities in the field of agriculture.
- (b) Implementing Act 4 of 2008 by protecting and improving domestic produce by managing the imports of agricultural goods:
  - (i) On a temporary basis for seasonal produce and as needed in the region.
  - (ii) On a permanent basis for the commodities of which the KRG has reached self-sufficiency.
  - (iii) Continue to import in a produce-controlled manner as needed and on a regular basis.
- (c) Provide and support the quality, quantity and variety of agricultural produce along with developing the agricultural sector.
- (d) Shifting from cultivation of small areas to large areas, encourage the establishment of agricultural corporations and specialist agricultural associations.
- (e) Making use of the modern technologies in agriculture through strengthening the relationship between the ministry's research centres and agricultural faculties within universities in the region and abroad, so they can work together to find suitable solutions

for ongoing problems as well as the forthcoming impacts of climate change on agriculture.

- (f) Increase production in each area unit.
- (g) Rebuilding the infrastructure to develop the agriculture sector.
- (h) Encouraging the farmers to return to the villages by creating economic opportunities in agriculture.
- (i) Strengthening and improving the farming workforce under the guidance of the department of agriculture and the ministry's press office by providing modern training to the farmers.
- (j) Strengthening the relationship between agricultural research centres of the ministry of agriculture and the relevant colleges, institutes and centres.
- (k) Implementing new methods of protecting and managing lands, increasing crop yields per area unit, protecting land from erosion, cultivating the lands according to the geographic, sociologic impacts and the data used by agro climate zone, and planting the vital produce on the most suitable lands.
- (l) Adoption of modern methods in producing and marketing agricultural products.
- (m) Supporting farmers through providing them with a package of assistance including improved seeds, fertilizers, plastic green housing, fuel and transport.
- (n) Include the farmers in the decisions made by the ministry.
- (o) Encouraging local and foreign investment in the agricultural sector.
- (p) Directing technical staff to work on site with the farmers not in offices.
- (q) Supporting the establishment of livestock farms in order to produce meat and milk.
- (r) Reviewing the master plans of the towns and cities.
- (s) Provide annual reports on livestock diseases, and co-operating with the neighbouring countries for controlling epidemics.

## **6. Risks and Uncertainties**

### **The Risks Facing the business plan**

#### **(a) Unsustainable development**

The Kurdistan region is fundamentally an agricultural society; the main cities are built on the best available agricultural land, hence the massive

urban expansion in all cities are at the expense of agricultural land and consequently impose a danger to realizing food sufficiency and security. Furthermore, continued economic growth and development will result in an increase in the use of marginal agricultural land at the expense of forestlands. These in turn will lead to the increased turbidity of lakes and reservoirs resulting from the riverine transport of eroded soils. Pesticides (insecticide, herbicides, fungicides etc.) are often used extensively to increase agricultural production. Significant quantities of pesticides will reach the lake and reservoir environments through runoff, erosion and misapplication, where they may affect habitats and contaminate the food chain (Short 1991).

- (b) Reviving village life
- (c) The budget level—it is not being approved on time could delay the plan.
- (d) Climate Change. The changes to vegetation boundary conditions in terms of temperature, humidity and rainfall will have a direct impact on agricultural produce. Hence the need to work on developing the next generation of crops that are capable of growing under the new projected conditions.

## 7. Conclusions

The rehabilitation of agriculture with the view to achieving food sufficiency and security is critical for the region's sustainability. In realist terms, rehabilitating agriculture requires effective modern production, training, management and reflective systems for sustainable agriculture and food production, in addition to fundamental changes within the management, training, legislation, guidelines and methods of work. These changes will in turn require clear and firm political support from all the parties involved—parliament, political leadership, expert authorities, farmers, and the people of Kurdistan.

In terms of process, a clear and realistic vision for specifying the priorities in order to achieve food sufficiency and security is required. The implementation will need an effective road map with clear objectives and a timeframe developed based on consultations with all stakeholders. Reforming the agriculture sector in the Kurdistan region is a big challenge that requires a clear framework to guide the ministry's future activities. The issues are complex and the challenge is enormous. Hence the need to brainstorm every milestone, and with the determination and hard work of

the agriculture leaders at all levels the ministry will move from one milestone to another.

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## Appendix

**Table 2.4 The region's need for various produce and the actual and potential produce for 2011 and 2013 respectively**

	Produce	The region's need / tons	Produce of 2011		Objective for 2013	
			Tons	%	Tons	%
1	Wheat	500,000	500,000	100%	600,000	120%
2	Oats	600,000	70,000	11%	150,000	25%
3	Corn	240,000	20,000	8%	30,000	12.5%
4	Sun-flower seeds	37,500	10,500	28%	15,000	40%

Source: MoAWR 2009

**Table 2.5 The region's need for chicken and eggs and the actual and potential produce for 2011 and 2013 respectively**

	Produce	The region's need	Produce of 2011		Objectives for 2013	
			Product	%	Product	%
1	Chicken	98,000 tons	55,000 tons	56%	80,000 tons	82%
2	Eggs	646 million	430 million	67%	1,170 million	181%

Source: MoAWR 2009

**Table 2.6 The region's need for vegetables and the actual and potential produce for 2011 and 2013 respectively**

	Produce	The region's need / tons	Produce of 2011		Objectives for 2013	
			Tons	%	Tons	%
<b>1</b>	Tomatoes	216000	101997	47%	120500	5%
<b>2</b>	Cucumbers	90400	68391	75%	90400	100%
<b>3</b>	Aubergines	39600	20094	50%	22200	56%
<b>4</b>	Okra	11480	6204	54%	11480	100%
<b>5</b>	Onions	56450	48880	87%	63100	111%
<b>6</b>	Courgettes	17570	10679	61%	17570	100%
<b>7</b>	Potatoes	70000	61574	88%	70000	100%
<b>8</b>	Other	158900	90070	57%	130000	82%
	<b>Total</b>	<b>660000</b>	<b>407889</b>	<b>62%</b>	<b>525250</b>	<b>80%</b>

Source: MoAWR 2009

**Table 2.7 The region's need for red meat and milk and the actual and potential produce for 2011 and 2013 respectively**

	Produce	The Region's need	Produce of 2011		Objectives for 2013	
			Tons	%	Tons	%
1	Red meat	100,000 tons	22,000	22%	40,000	40%
2	Milk	400,000 tons	130,000	33%	200,000	50%

Source: MoAWR 2009

**Table 2.8 The region's need for fruit and the actual and potential produce for 2011 and 2013 respectively**

	Produce	The Region's need/ tons	Produce of 2011		Objectives for 2013	
			Tons	%	Tons	%
1	Grapes	60000	10024	17%	14400	24%
2	Apples	64000	11619	18%	13200	21%
3	Peaches	25000	14108	56%	16000	64%
4	Pomegranates	45000	15672	35%	20500	46%
5	Pears	5700	1322	23%	1322	23%
6	Apricots	6800	2619	39%	2800	41%
7	Figs	10900	3132	29%	4200	39%
8	Other	32600	1601	5%	2000	6%
	Total	250000	60097	24%	74222	30%

Source: MoAWR 2009

**Table 2.9 The region's need for fish and the actual and potential produce for 2011 and 2013 respectively**

	Produce	The Region's need/ tonnes	Produce of 2011		Objectives for 2013	
			Tons	%	Tons	%
1	Fish	6700*	1430	21%	2462	37%

Source: MoAWR 2009

**Table 2.10 The region's need for honey and the actual and potential produce for 2011 and 2013 respectively**

	Produce	The Region's need/ tons	Produce of 2011		Objectives in 2013	
			Tons	%	Tons	%
<b>Honey</b>	1,200	700	58%	800	66%	

Source: MoAWR 2009

**Table 2.11 The Region's need for Forests and Meadows and the actual and potential produce for 2011 and 2013 respectively**

Details	The Region's need/ hectares	Area in 2011		Objectives in 2013	
		Hectares	%	Hectares	%
Forests	3,000,000	1,280,267	42.6%	1,290,000	43%
Meadows	1,739,000	1,430,000	82%	1,432,000	82.3%

Source: MoAWR 2009

**Table 2.12 The Region's need for Irrigation Projects and the actual and potential produce for 2011 and 2013 respectively**

		The Region's need of irrigation / hectare	Irrigation in 2011		Objectives for the next five years	
			Hectare	%	Hectare	%
1	Irrigation	767,897	177,406	23%	250,000	32%

Source: MoAWR 2009

**Table 2.13 The Region's overall needs for produce and the quantity objectives for 2013.**

	Produce	The Region's need / tons	Objectives for 2013	
			Tons	%
<b>1</b>	Wheat	500,000	600,000	120%
<b>2</b>	Tomatoes	216,000	120,500	55%
<b>3</b>	Cucumber	90,400	90,400	100%
<b>4</b>	Aubergine	39,600	22,200	56%
<b>5</b>	Okra	11,480	11,480	100%
<b>6</b>	Onions	56,450	63,100	111%
<b>7</b>	Courgette	17,570	17,570	100%
<b>8</b>	Potatoes	70,000	70,000	100%
<b>9</b>	Other	158,900	130,000	82%
<b>10</b>	Peaches	25,000	160,00	64%
<b>11</b>	Chicken	98,000	55,000	56%
<b>12</b>	Eggs	646 million	646 million	100%
<b>13</b>	Prairies	-	1,432,000	82.3%
<b>14</b>	Honey	1,200	800	66%

Source: MoAWR 2009

CHAPTER THREE

BUILDING A SECURE FUTURE  
THROUGH REALIZING SUSTAINABLE  
DEVELOPMENT IN THE FEDERAL REGION  
OF KURDISTAN, IRAQ

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The Federal Region of Kurdistan, Iraq is currently undergoing rapid economic development, population growth and urbanization. The literature shows that such circumstances can lead to an increase in demand for resources such as water, land and building materials, and these in turn will produce industrial and domestic waste. Consequently, the process is often associated with a continuous degradation of natural resources (water, soil, air, natural habitats and biological diversity) and the environment. Hence, disturbing the ecological balance, exhausting natural resources and threatening the pace of economic growth leads to environmental problems including the destruction of forests, loss of prime agricultural land, reduction in biological diversity, high rates of erosion and water quality degradation.

This chapter argues that the specific conditions in the Federal Region of Kurdistan, its physical nature and the unavailability of reliable information for decision making necessitates the use of Geoinformatics as a tool to sensibly utilise and conserve the environment and natural resources whilst furthering the development process. An overview of the likely environmental problems in the Federal Region of Iraqi Kurdistan and the possible usage of Geoinformatics for achieving sustainable development are discussed.

## 1. Introduction

The term “sustainable development” was made universal by the World Commission on Environment and Development (WCED) in its 1987 report entitled “*Our Common Future*.” The report was written after three years of public hearings and over five hundred written submissions. Commissioners from twenty-one countries analysed this material, with the final report being submitted to the United Nations General Assembly in 1987.

The World Commission on Environment and Development (WCED) was established to manage the environmental and developmental problems of the world with three general objectives (WCED 1987):

- To re-examine the critical environmental and development issues and to formulate realistic proposals for dealing with them
- To propose new forms of international co-operation on these issues that will influence policies and events in the direction of needed changes
- To raise the levels of understanding and commitment to the action of individuals, voluntary organisations, businesses, institutes and governments.

“*Our Common Future*” reported on many of the global realities and recommended urgent action on eight key issues to ensure that development was sustainable. These were:

- Population and Human Resources
- Industry
- Food Security
- Species and Ecosystems
- The Urban Challenge
- Managing the Commons
- Energy
- Conflict and Environmental Degradation

In a broad sense, sustainable development is defined as improvement of quality of life and advancement of economic, social, cultural and political conditions. Hence, sustainable development is expected to ensure the well-being of the human person by integrating the following dimensions:

**(i) Social development**, meaning that the basic needs of the human being are met through the implementation and realization of basic rights of access to education, health services, food, housing, employment and the fair distribution of income.

Social development promotes public participation in determining policy, as well as creating an environment for accountable governance. Social development aims to ensure the equitable treatment of women, children, people of indigenous cultures, people with disabilities, and all members of populations considered most vulnerable to the conditions of poverty.

**(ii) Economic development**, which builds on the availability of employment opportunities and the ability of individuals to secure an income to support themselves and their families. Economic development includes industry, sustainable agriculture, as well as integration and full participation in the global economy. Social and economic developments are reinforced and are dependent on one another for full realization.

**(iii) Environmental conservation and protection.** One of the most important outcomes of "*Our Common Future*" was the realisation that environment and development issues are inextricably linked and therefore worrying about either environment or development on its own was inappropriate. The World Commission concluded that:

Environment and development are not separate challenges. Development cannot subsist on a deteriorating environmental resource base; the environment cannot be protected when growth leaves out of account the costs of environmental destruction. These problems cannot be treated separately by fragmented institutions and policies. They are linked in a complex system of cause and effect.

The WCED therefore argued that the well-being of the human person is directly linked to the well-being of the earth. Hence, sustainable development rightly places importance on the protection of the earth and the earth's resources. International documents that include the environmental aspect of development affirm and reaffirm that "human beings are at the centre of concern for sustainable development. They are entitled to a healthy and productive life in harmony with nature ...." As the goal of sustainable development is to permanently improve the living conditions of human beings, social and economic developments must be carried out in a way that is environmentally and ecologically sound,

ensuring the continual rejuvenation and availability of natural resources for future generations.

This link between human rights and sustainable development is captured in many international treaties, declarations and in many commitments, including the “Rio Declaration on Environment and Development” (1992). This declaration introduced environmental conservation as a key element to sustainable development. It indicated that development projects must meet the needs of both present and future generations. This means that humans need to have the ability to live “a healthy and productive life in harmony with nature.” This declaration also emphasised the importance of poverty eradication as a means to achieve development (WCED 1987; Unesco 2001).

Whilst agreeing on the broad understanding of sustainable development, its precise definition can differ based on the locality; this is mainly because sustainable development concerns a process of change and is heavily reliant upon local contexts, needs and interests.

There is sometimes a confusion between the meanings of “sustainable development” and “sustainability” and the relationship between them. The following offers a simple explanation; Sustainability is the goal of sustainable development, an unending quest to improve the quality of peoples’ lives and surroundings, and to prosper without destroying the life-supporting systems on which current and future generations of humans depend. Like other important concepts, such as equity and justice, sustainability can be thought of as both a destination and a journey (PCE 2005).

Since the early 1990s, southern Kurdistan (Fig. 3.1) has experienced rapid economic development (Fig. 3.2) due to its relative stability and prosperity as a result of the no-fly-zone policy in northern Iraq (Baban 2006). Experience elsewhere shows that rapid economic development is often associated with significant industrialisation, urbanisation, population growth and increases in demand for physical resources, as well as in the amount of industrial and domestic waste produced (Morse and Stocking 1995).

The Kurdistan Region, like other developing regions, suffers from information poverty, i.e. a scarcity of information and the unreliability of available data sets in terms of land use/cover, soils and topographic maps (especially in detail and scale) to deal effectively with sustainable development issues (Baban 2006). This information poverty makes evidence-based planning and managing sustainable development and the associated consequences a hard task.

Fig. 3.1 Kurdistan region location map



Source: Michaeltotten.com

## 2. Factors Threatening Sustainable Development in Southern Kurdistan

Possible factors causing environmental degradation independently and jointly include the following.

### 2.1 Population Growth and Urbanisation Issues

Population growth and urbanisation have increased the demand for natural resources including water and land, as well as increased the amounts of human waste. These developments, as is the case in other parts of the world, can lead to environmental problems including a reduction in biological diversity, high rates of erosion and water resources degradation. The sediments and pollutants will ultimately be transported to and deposited in local rivers, lakes and reservoirs (Baban 2006).

This is a common problem in developing countries; for example a study by the Food and Agriculture Organisation of the United Nations (FAO) estimated a reduction of 221 x 106 hectares of forested lands and predicted a reduction of 175 x 106 hectares in the Caribbean region by the year 2000 due to deforestation practices (FAO 1979).

Fig. 3.2. Developments in the Kurdistan region



## **2.2 Waste production and disposal**

Ongoing development and increasing population have led to an increase in the amount of solid wastes and waste water being generated within the region. As the main disposal practices consist of dumping waste outside urban centres and discharging mostly untreated wastewater into the environment, more poorly treated or untreated sewage wastewaters will be discharged into the environment (Baban 2006). The impact of this problem is often compounded due to the lack of appropriate landfill facilities, the deficient collection systems and inadequate disposal practices, such as using dry river beds and dump sites, evident in many countries of the region.

## **2.3 Toxic substances production and disposal**

Toxic substances are often released from waste disposal, and industrial and municipal waste water, and accidental spills are associated with several relevant industries, including petroleum (oil refineries and petrochemical plants), chemical (organic and inorganic), and pesticides. The waste generated may contain heavy metals, carcinogenic hydrocarbons, dioxins, pesticides and noxious organic and inorganic substances. Other sources may include mining and organic pollutants originating from domestic and industrial discharges and industrial wastes.

## **2.4 Lack of food security**

The Kurdistan region is rich in water resources and has highly fertile land, but is reliant on imports to satisfy food needs in the region. This scenario is not sustainable, as it has been acknowledged that food security equals national security. Given the geopolitical location and circumstances associated with this region, the need for prioritizing agriculture, which can also provide employment, and managing the imports of foreign fruits and vegetables which currently dominate the markets in Kurdistan, is a must.

## **2.5 The need to improve and enhance water resources**

In the Kurdistan region, a large part of water scarcity is a result of the neighbouring countries' divergence of water, changes in population structure and concentration, climate changes, and the use of water in hydropower-based electricity generation. This situation is a binding constraint on economic and social development. Hence, it is important to enhance the effectiveness in the use of water resources to reduce the shortages in supply and negative environmental effects.

The Kurdistan region is reasonably rich in water resources. It has several sources of water that are used foremost in households and agriculture. Groundwater is the major resource for drinking water and for other urban and rural uses, and is easily available in all parts of Kurdistan. However, the groundwater resources in many places have been polluted by the household sewage system which has caused a great risk to public health. Surface water is declining and varied as the lack of rain and snow in recent years has caused serious water shortages in rivers and springs. There are only three large dams in Kurdistan which provide water to very limited areas. The capacity will be strengthened by a number of uncompleted dams in the region whose construction is in progress. Dams are important for increasing domestic products and can be used for meeting the needs of different sectors and agriculture. Treated wastewater can be another source of water, but this method has not yet been used effectively in the Kurdistan region. The government has a plan for saving wastewater used by households and businesses and cleaning it to be reused. In addition, the treated water can be used for many different purposes, either directly or indirectly.

## **2.6 The need to improve tourism and cultural heritage**

Due to the relative security and stability that the region enjoys in comparison to the central and southern areas of the country, Kurdistan has become the main destination for foreign businesses and investment, which has a twofold positive effect on the tourism sector. First, a large number of foreign business people and investors visit the region, which in itself is good for the tourism sector, since during their stay in Kurdistan the foreigners visit tourist attractions and cultural heritages of the region. Secondly, a number of foreign companies and investors who intend to invest in the region invest in the tourism sector and give a hand to the local authorities in their effort to improve the tourism sector in the region.

Though the region is still far from being an international tourist attraction, experts believe that it has a great potential of historical sites and natural tourist attractions to attract tourists from around the world in the future. The international airports will facilitate this process, and the new Erbil International Airport alone has the capacity to receive three million passengers every year. They also believe that tourism, if given importance and developed by local authorities, can become a main source of income for Kurdistan's population and a main sector in its economy. Besides the foreign tourists who visit the region, Iraqis from other parts of Iraq find Kurdistan as the nearest and most affordable tourist attraction and visit the region in huge numbers. Iraqi tourists started to visit Kurdistan in their hundreds of thousands every year after the end of the 2003 war, and Kurdistan proved to be a safe and stable area in Iraq. However, a main obstacle facing foreign tourists' visits to the Kurdistan region is their unawareness of the difference between the region and the rest of the country in terms of security and stability, and a majority of foreigners still fail to differentiate between the two parts of Iraq. Another drawback of the tourism sector in Kurdistan is the local people's lack of tourism awareness and the weak infrastructure and road system necessary to facilitate tourists' stay in the region.

## **2.7 Nature conservation and biodiversity**

The main threats to and challenges for nature conservation and biodiversity in the Kurdistan region and Iraq can be summarised as, first, the lack of the necessary institutional and legal framework to protect important species, establish protected habitats, or create a reasonable work plan. Secondly, the lack of any effective protected areas network. Thirdly, the lack of a national biodiversity strategy or action plan associated with a

lack of research institutions to aid in the creation of work plans. Fourthly, the lack of environmental awareness among the public and government. Finally, many species under threat from ecosystem degradation due to major changes caused by war and past conflicts, the increasing amount of municipal solid and sewage waste left untreated, and industrial pollution and toxic sites particularly related to increasing development and oil exploration. Overall, in terms of the major threats of habitat change, climate change, invasive species, over exploitation and nutrients and pollutants, most threats are either increasing or remaining steady in Iraq (MoE 2010).

## **2.8 The education system and employment**

The large number of the young in the population poses a problem for the education system in Kurdistan particularly due to the poor base and short age of scientific planning for education and its requirements in Kurdistan is comparatively backward. The most conspicuous fact can be observed from the universal lack of educational infrastructure in the region. Another difficulty is finding employment for a large number of graduates that vary fundamentally trained to become government employees at a time when the government has reached saturation in employment.

Delivering Kurdistan's needs requires preparing graduates for the new realities of nation building, market demands and competition. Hence, the whole education system needs to be reformed from primary to the high schools. Emphasis should be placed on "understanding," "learning through discovery," "ethical and human values," respecting the other viewpoint, accountability and contribution to the society's wellbeing, national pride, rational thinking, negotiations and problem solving (Baban 2012). The reform must include curriculum development, teaching and learning methods, revising assessment methods. The reform should also focus on "understanding" and "deep learning approaches." Furthermore, the reforms need to be a part of a national plan for nation building which establishes the systems and structures set up to deliver the necessary capacity building. In addition, higher education institutions need to be independent but accountable, with emphasis on applied research, quality assurance and modern teaching and learning methods. Finally, vocational programs need to be revised to meet the current and future needs of Kurdistan (Baban 2012).

### **3. Living with Information Poverty and Achieving Sustainable Development**

Information is the most important factor for sustainably planning development. Effective political and economic systems cannot function without a continuous interchange of reliable information. In fact, one of the barriers to sustainable development in developing countries is the lack of information requisite for effective planning (Bernhardsen 1992).

Southern Kurdistan suffers from a scarcity of relevant information and the unreliability of available data sets in almost all the relevant fields, including land use/cover, soils, population and potential pollution sources, waste disposal practices and facilities. Obviously, this information poverty makes decision making for development planning and control and managing the environment a difficult task. However, these obstacles may be mitigated through determining a strategy to cope with information poverty.

The strategy will require collecting and evaluating all relevant data sets, identifying areas of information poverty and possible information gaps, identifying the tools for collecting, managing and analyzing the necessary data sets (building the capacity of local expertise to develop and manage the essential data sets will be critical), establishing a clear understanding of the processes involved on a local and regional scale to identify the impacts of development, especially on the most vulnerable community groups and the processes by which different parts of the region can adapt to these changes, developing plausible scenarios to account for the effects of development, and developing a Kurdistan regional agenda to manage these issues by all stakeholders (Baban 2006, 2012).

The literature shows that the shortage in reliable and accurate data sets can be best handled by using Geoinformatics, which encompass Remote Sensing and Geographical Information Science (GIS). Geoinformatics contains the necessary tools to generate, collect, handle and analyse the necessary data sets as well as expanding our knowledge of the processes involved at the appropriate scales (Baban 2002).

Remotely-sensed data can provide vital information for managing the environment and natural resources in the Kurdistan region (Baban 1998a, 1998b). These include providing relevant information on catchment characteristics, e.g. mapping and monitoring the spatial extent of various types of land use and land cover, including changes in agricultural land, mapping parent material type, soils, vegetation type and canopy densities, as well as water quality parameters in lakes and reservoirs. Remotely sensed data can also provide the necessary area-based land use/cover parameters to

run conventional mathematical models to simulate an environmental response to different conditions/management scenarios.

GIS has evolved for handling diverse data sets for specific areas by using co-ordinates as the basis for an information system (Heywood et al. 1998). GIS can be effectively used to input, store, organize and analyze the ground-referenced data, and to integrate such data with data from satellite imagery and other sources. The spatial analysis, visualization and query capabilities of GIS can identify and map natural resources as well as environmental degradation/pollution problems at their locations. Furthermore, GIS can be used to simulate various management scenarios responding to various conditions of the identified problem, and to establish which is the most suitable scenario for each location. Lastly, GIS may assist key decision making at operational, management and strategic planning levels by a variety of users, including the scientific community, universities (which must be capable of playing a leading role in the process) and executive decision makers and legislative bodies.

#### **4. Sustainable Development in Southern Kurdistan: a Way Forward**

Kurdistan is developing fast, and experience indicates that unless the development is sustainable it will be short lived. Hence the need to for the following:

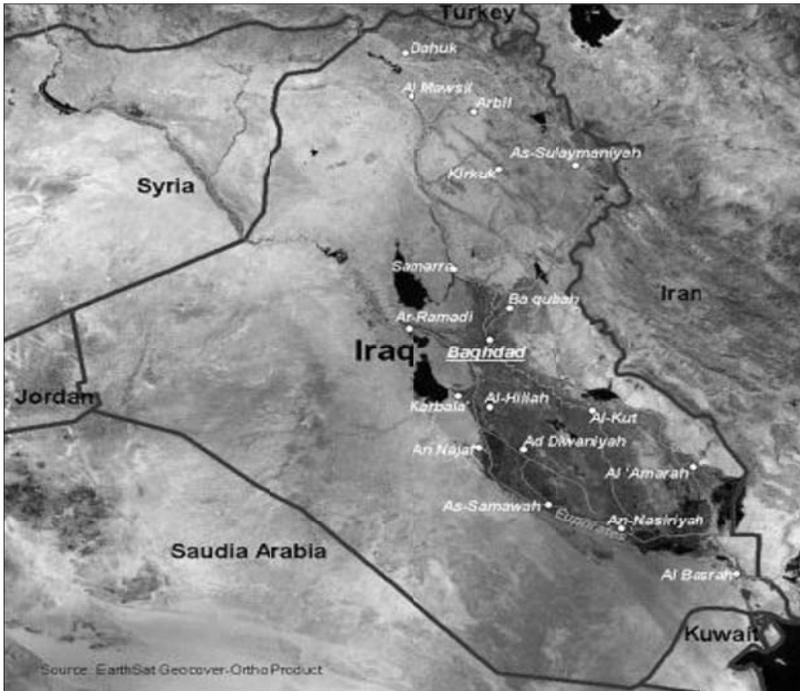
1. Developing a strategic plan for sustainable growth
2. Introducing environmental impact assessment practices for development projects
3. Helping rural life, building Agriculture and ensure food security
4. Enhancing reforestation of Kurdistan will reduce floods and landslides
5. Exploring natural resources is a sensible way
6. Improving and enhancing water resources
7. Developing waste management approaches and optimizing waste use
8. Improving educational systems to build on human capacity
9. Focusing on and developing natural resource-based industries, including tourism, nature conservation and parks, and cultural heritage
10. Developing a knowledge economy
11. Promoting science-based decision making.

In any management, understanding the characteristics and territory of the environment to be developed is essential. Therefore, achieving sustainable development in Southern Kurdistan requires the decision-makers to adopt a holistic approach and to use every aid available to them as they attempt to anticipate the consequences of their decisions (Baban 2006, 2012). Reasonable decision-making is often based on all available information and uses an objective approach in arriving at appropriate decisions (Baban 2000; Baban 2001).

In Southern Kurdistan, obtaining accurate information on the geographical distribution as well as the condition of natural resources and the environment is a problem. However, remote sensing can assist with the identification and the mapping of these two critical aspects (see Fig. 3.3 below). The GPS can then be used to assist with deriving the geographical coordinates for specific targets of interest in the field as well as mapping and verifying the outcomes from the remotely sensed data. The GIS can then be utilised to examine and spatially analyse the data and to suggest a range of possible management scenarios to sensibly utilise a particular natural resource under a given set of development conditions (Heywood et al. 1998) (see Fig. 3.4 below).

Furthermore, establishing a management strategy often involves the use of models to simulate the response of the environment to different development scenarios. Many of the models used require parameters based on catchment characteristics. Even when conventional data is available, the assembly and management of these parameters are particularly difficult for large areas. However, remotely sensed data can be used in parameter determination. Furthermore, it could be integrated with regular ground referenced measurements to create a comprehensive information database. Digital Landsat imagery, aerial photographs and digital image processing can provide up to date, digital, reliable, regular and relatively cheap information about both the land and coastal marine parameters, providing that the spatial resolution and the satellite sampling periods are sufficient to detect the studied phenomena. It will also provide data for areas which have no ground measurements based on the interpolation of area-based information from a number of sampled locations, subject to their size and the spatial resolution of the imagery (Baban 2001; Baban & Wan-Yusof K 2001).

Fig. 3.3. Satellite imagery of Kurdistan region and surrounding areas



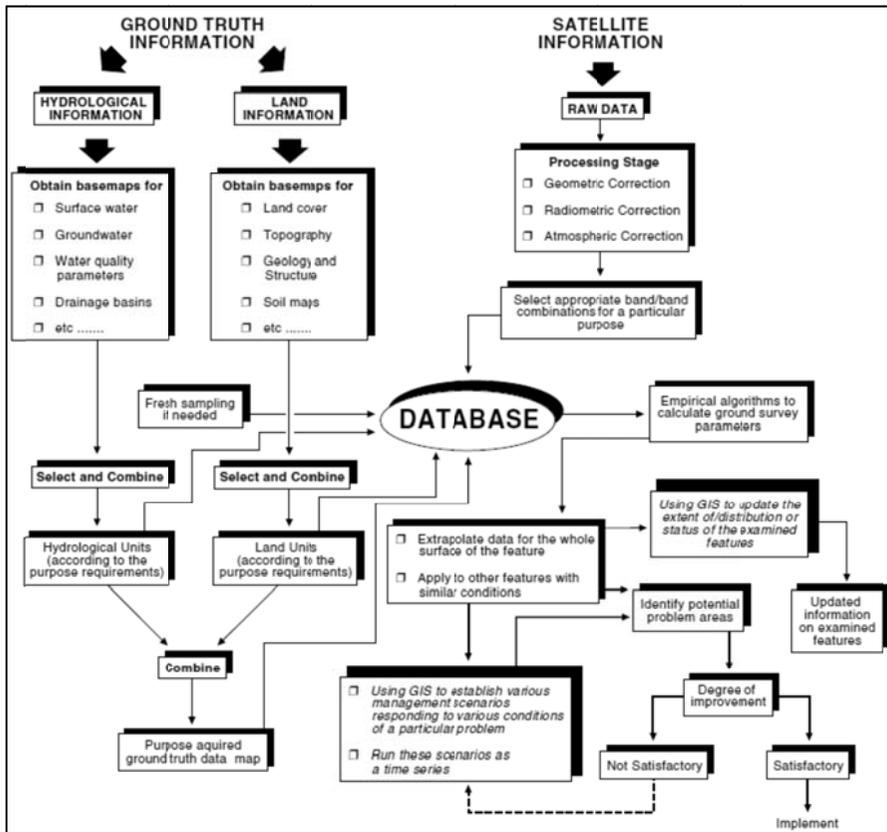
Source: Releifweb.int/w/nsf

This approach will contribute to a better understanding of natural resources, the environment and will make the knowledge digestible and useable by managers in deciding on the optimal course for development. Moreover, it will provide an opportunity to adopt a holistic approach, enabling the region to be studied as an integrated system rather than individual entities of land parcels tied to possible development projects.

Additionally, increased environmental awareness will require subsequent changes in national and international laws and policies have increased the pressures and requirements placed on decision makers by government and society. They now have to make decisions taking into consideration public satisfaction, environmental safety and economic practicality (Baban 2004). The decision-making in Kurdistan will be required to fulfil the same requirements in the foreseeable future. This situation will create a need for more consistent and objective methods for making decisions as well as improved access to, and better management

of, environmental information with the view to achieve sustainable development. GIS have the capability to store volumes of necessary multidisciplinary information, structuring and integrating a variety of economic and environmental constrains. Thus, GIS can play an important role as a decision-support tool and as a means for achieving sustainable development (Baban 2001).

Fig. 3.4. Proposed watershed GIS for Iraq (Baban 2006)



### 5. Conclusions

Sustainable development is mainly based on proportional population, necessary resources and suitable environment, and among them population is the most important factor. On the other hand, population, resources and

environment are changeable parameters which can be adjusted by the social and economic development. The economic growth in the region is associated with a rapid rate of urbanisation and population growth leading to the environmental degradation of natural resources and habitats and could eventually threaten the pace of economic development. Consequently, there is a real need to map, monitor and assess the impact of development, predict future conditions and arrive at a better understanding of the processes supporting and harming the environment. The lack of reliable and compatible data sets as well as the deficiency in the scientific knowledge regarding some of the processes involved represents a problem. However, this problem can be managed by adopting a holistic approach and using Geoinformatics. Furthermore, increased environmental awareness will require subsequent changes in policy making, as domestic and international laws have increased the pressures and requirements placed on decision makers. This situation will create a need for more consistent and objective methods for making decisions, as well as improved access to, and better management of, environmental information to achieve sustainable development.

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## CHAPTER FOUR

### LEGAL ACTIONS AGAINST LANDMINE USERS\*

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War and defence machines are considered one of the tools associated with the evolution of the international community and the emergence of the industrial revolution. They are also associated with the ambitions of colonial wealth in the world in addition to the dream of controlling people and their resources as well as the wealth of other nations. The power states have used modern war and destructive tools to achieve these goals, and from World War II started an arms race and have developed new instruments for death and destruction.

Conventional weapons were considered the most tragic sources of the consequences of wars throughout the history of mankind. According to Themnér & Wallenstein (2011), 266 armed conflicts occurred during the period 1989 to 2010, and most of the victims were civilians. At the beginning of the twentieth century, 10% of the victims of armed conflicts were civilians and this ratio was raised since 1989 to constitute as much as 90% of the victims. All these victims have resulted from the use of conventional weapons that are excessively injurious and have indiscriminate effects.

The expansion of the use of mines and their random placement has led to a huge humanitarian disaster, targeting both human and livestock. It also poses a serious threat to the environment and damages integrated and sustainable growth.

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\* Heshmati A. & Khayyat N. T., (2013), “*Socio-Economic Impacts of Landmines in Southern Kurdistan*,” Cambridge Scholars Publishing, Chapter 14, 249–263.

The problem of landmines and especially anti-personnel mines reached an extent considered a crisis on the global level. According to the landmine monitor reports in 2009 and 2010, there are more than 110 million mines laid in about 73 countries in the world, implying that on average there is one mine per one dozen children. Out of 77,290 landmine casualties since 1999, 18,908 were killed, 54,566 injured and 4,058 are of unknown status.<sup>1</sup>

A regional breakdown of the total global casualties recorded by the landmine monitor report from 1999 to 2009 is set out in the Table 4.1 below.

**Table 4.1 Casualties by Region 1999–2009**

Region	No of States	No of States with Casualties	No of Casualties
Asia-Pacific	40	21	35,780
Africa	48	32	16,924
Middle East and North Africa	18	17	8,882
Americas	35	14	7,890
Commonwealth of Independent States	12	12	4,638
Europe	42	23	3,176
<b>Total</b>	195	119	77,290

Source: Combination of the figures of landmine monitor reports of 2008 and 2009

Despite the enormous resources used in mine clearance, the prevalence of landmines is a major challenge facing the world. It is worth mentioning that on average there is a landmine accident every twenty-two minutes, causing seventy casualties per day. With the current rate of mine clearance and under the conditions of no additional placement of mines, it would take 1,100 years to free the entire world of mines.<sup>2</sup>

The period following the Cold War and the emergence of uni-polarity witnessed a significant international movement targeting most types of conventional weapon violations on the global level. This included items such as light weapons, anti-personnel mines and cluster munitions that led to the amendment of Protocol II of the 1980 convention, relating to the use

<sup>1</sup> Landmine Monitor Fact Sheet (2010), “Impact of Mines/ERW on Children.” Available at: <http://www.the-monitor.org/index.php/LM/Our-Research-Products/Factsheets> (accessed August 12, 2011).

<sup>2</sup> <http://www.uncg.edu/student.groups/sal/Pages/facts.html> (accessed March 1, 2011).

of landmines, booby traps and other devices.<sup>3</sup> This international movement led to a first comprehensive agreement to end the presence of anti-personnel mines from the arsenal of any nation as part of the agreement called the Ottawa Convention in 1997. It is the first disarmament convention in history calling for a weapon to be banned in a comprehensive manner, and was followed by the Dublin Convention that banned cluster munitions in 2008.

The international humanitarian law has played a key role in adding a number of principles that have dealt with the legality of the use of certain weapons (Carnahan 1984). These principles are essentially based on two ideas: first is that humanity should not be overlooked by the military and political decision makers, and second is the idea of security and stability of states, usually expressed as a military necessity.

Human history has witnessed different stages and periods in this regard. The customary international humanitarian law has not restricted the methods and means of warfare as long as they are considered as a means of defence of national sovereignty. Here, the interest of supreme states that required the use of fighting have stemmed from the wills of their leaders (Bugnion 2002). This idea was represented especially in the nineteenth century on a significant doctrinal basis without considering the effects of excessive damage and unnecessary suffering that accompany the use of certain types of weapons. The atrocities committed against humanity during that period called for the urgent need to review those principles in accordance with the principles of civilised humanity that refuses to unleash warring forces.

The conflict between the two ideas described above has resulted in the formulation of another international principle, namely the concept of compromise between the ideas of humanity and military necessity. This is called the principle of proportionality in the use of methods and means of warfare, requiring parties to use them in a way compatible with military objectives without leading to excessive injurious effects on soldiers and indiscriminate effects on civilians (De Mulinen 1989).

From this point, we will first discuss the principle of military necessity in section 1 and then the principle of proportionality in section 2, and address the most important international instruments that dealt with the two principles in a regular manner. We attempt to apply them on the legality of using landmines and cluster munitions in section 3, while section 4 elaborates the Kurdistan region in relation to the international landmine law and its application.

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<sup>3</sup> <http://www.icrc.org/ihl.nsf/FULL/575?OpenDocument> (accessed March 1, 2011).

## **1. The Principle of Military Necessity for the Use of Landmines and Cluster Munitions**

The legality of the use of landmines and cluster munitions has been subject to many jurisprudential debates. A simple review of the armed conflicts that have occurred over the past centuries will undoubtedly show that the warring parties justified the use of certain types of weapon, based on the existence of a fair cause that led them to use it without care of the accompanying atrocities against humanity. These acts are often based on the belief of denial of any mercy for enemies since they represent injustice and unfair causes, and hence are responsible for the massive destruction and suffering of the people on both sides.

The concept of military necessity has evolved along with the concept of justice known from the early times of human history, and was a legitimate basis for all wars. The international humanitarian law has contributed in codifying many of the prevailed customs through history to curb the actions of those leaders who have justified the use of weapons without discriminating between the military and civilian population (Grant 2003). A positive contribution is the far from effective elimination of such threat or the significant reduction of its destructive impacts.

The Just War theory, as a method of evaluating military actions, has been recognized historically by thinkers such as St. Augustine of Hippo<sup>4</sup> and St. Thomas Aquinas.<sup>5</sup> They believed that military necessity is only a part of insurgency and went so far as to say that there is no separation between them, and combat operations are the will of heaven delegated to the king to execute; the just war therefore stems from the existence of necessity. Among the conditions required for a war to be just, as St. Thomas Aquinas stated, are power legitimacy and will, existence of a just cause, and the achievement of positive goals and avoidance of devilish deeds (Grant 2003).

However, other thinkers added conditions to those listed above, such as the imminent risk of threats to the existence of a nation, and the combat operations sufficiently necessary for the nation's interest. Under such conditions, combat operations in self-defence should be based on methods and means that are suited to the threat that faces the nation.

From the legal aspect, the concept of military necessity has been addressed in different international and national levels. For instance, some

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<sup>4</sup> <http://www.newadvent.org/cathen/02089a.htm> (accessed March 1, 2011).

<sup>5</sup> <http://faculty.cua.edu/pennington/Law111/AquinasJustWar.htm> (accessed March 3, 2011).

countries have committed their armed forces to the necessity of taking appropriate action prior to any military action. The British army field manual defines these appropriate actions as military necessities, authorizing the belligerent party who uses methods and means of warfare that are not banned by the law of armed conflict. The use of such methods leads to the achievement of legitimate purposes with an emphasis on completing the requested task either partially or completely against the enemy, as early as possible, with minimal loss of life and property (Meyrowitz 1994).

In terms of international humanitarian law, the concept of military necessity has been mentioned in many international instruments, first seen in the preamble to the Declaration of St. Petersburg in 1868. Another instrument is the drafting of the declaration by the participating countries that have been convinced to include this important topic on the conference's agenda. The inclusion stating that the only legitimate object which must be sought by the countries during wars is to weaken the military forces of the enemy, and the Hague Convention of 1907 confirmed this principle in its preamble (Meyrowitz 1994).

Based on the above discussions, it can be concluded that when countries use the principle of military necessity they aim to evade the international responsibility of the violation of international humanitarian law. To curb this abuse, or at least mitigate it, international humanitarian law has recently agreed on considering military necessity as the only acceptable response to military operation, and some international treaties have a specific condition for using it, such as Geneva Convention (IV) relating to the Protection of Civilian Persons in a Time of War.<sup>6</sup>

According to the customary international humanitarian law and a number of international treaties, there are some conditions which justify military necessity as follows:

- To achieve legitimate military objectives which cannot be done by only usual military procedures.
- The results from such military procedures on civilian losses to be as low as possible (Grant 2003). This is an additional protocol to the Geneva Convention of 1949 relating to the protection of victims of

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<sup>6</sup> Article 53 states that “Any destruction by the Occupying Power of real or personal property belonging individually or collectively to private persons, or to the State, or to other public authorities, or to social or cooperative organizations, is prohibited, except where such destruction is rendered absolutely necessary by military operations.” International Humanitarian Law—Treaties & Documents, ICRC.

international armed conflicts (protocol I) of 1977, stated in chapter III, civilian objects. Here follows article 52, on the general protections of civilian objects, paragraph 2:

Attacks shall be limited strictly to military objectives. In so far as objects are concerned, military objectives are limited to those objects which by their nature, location, purpose or use make an effective contribution to military action. In this context it refers to those whose total or partial destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage.<sup>7</sup>

The countries that have supported the use of anti-personnel mines have had a conservative position on the legality of the use of this weapon, especially if we know that the principles in international humanitarian law are incompatible with the effects of landmines and cluster munitions. One of these principles is the annex to the Hague convention of 1907: Regulations respecting the laws and customs of war on land; Section II: Hostilities; Chapter I: Means of injuring the enemy, sieges, and bombardments; Article 23: In addition to the prohibitions provided by special conventions, it is especially forbidden to destroy or seize the enemy's property, unless such destruction or seizure be imperatively demanded by the necessities of war.<sup>8</sup>

Despite the fact that supporters of the use of landmines rely on this principle, this argument is not strong for two reasons. First, landmines, with all their specifications, are a weapon which cannot be accurately directed against the enemy. Second, the continuous threat for long periods of time classify this weapon as beyond the concept of military necessity (Sandoz 1981).

Further evidence of the illegibility of using landmines as a military necessity is stipulated in paragraph 3 of article 2 of the Protocol on Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices, as amended on May 3, 1996 (Protocol II to the 1980 Convention, as amended on May 3, 1996). This convention states that: "It is prohibited in all circumstances to use any mine, booby-trap or other device which is designed or is of a nature to cause superfluous injury or unnecessary suffering."<sup>9</sup>

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<sup>7</sup> The full text of preamble is available online at: <http://www.icrc.org/ihl.nsf/full/470?opendocument>

<sup>8</sup> The full text of preamble is available online at: <http://www.icrc.org/ihl.nsf/WebART/195-200033?OpenDocument> (accessed July 1, 2011).

<sup>9</sup> The full text of preamble is available online at:

Moreover, because landmines are characterized by these specifications, the ban and lack of legitimacy is stronger than the evidence for their permissibility and legality. Furthermore, the phrase "prohibited in all circumstances" extends its prohibition even in the context of military necessity.

Through applying the conditions of military necessity to the use of landmines, particularly the condition of achieving legitimate military objectives, it can be said that this weapon in its devastating affects exceeds definite military advantage. This is supported by Paragraph 2 of Article 52 of Protocol Additional to the Geneva Conventions of August 12, 1949, relating to the Protection of Victims of International Armed Conflicts (Protocol I), June 8, 1977 that states that:

Attacks shall be limited strictly to military objectives. In so far as objects are concerned, military objectives are limited to those objects which by their nature, location, purpose or use make an effective contribution to military action and whose total or partial destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage.<sup>10</sup>

Moreover, it is illogical to accept landmines as a weapon for military necessity due to the lack of proof for their capacity and in military operations rather than for defence plans, and the evolution of the military industry has allowed for the development of sophisticated weapons that can be easily replaced at a lower cost than landmines (Davis & Duniop 1994).

The after effects of using landmines in armed conflict areas show a concept and a vision different from that of military necessity. The outcome will call at least for the ban or restriction on the use of this weapon according to the principle of humanity, as it represents a philosophy of international humanitarian law. The law was created and established as a call for establishing rules for the prevention and not the legalization of landmine use labelled as a military necessity.

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<http://www.icrc.org/ihl.nsf/WebART/575-03?OpenDocument> (accessed July 1, 2011).

<sup>10</sup> The full text is available online at: <http://www.icrc.org/ihl.nsf/full/470?opendocument> (accessed June, 27, 2011).

## **2. Principle of Proportionality**

We will discuss in this section two related subjects. First, the reasons for the emergence of the principle of proportionality, and secondly a study of the most important explanations of the principle and its relationship with the legality of the use of landmines and cluster munitions.

### **2.1 The Evolution of the Principle of Proportionality**

The emergence of the principle of proportionality was not a coincidence, but the inhumane results of the methods and weapons used in armed conflicts both internationally and internally. The main reason is the principle of proportionality is the eternal conflict between the two opinions. The first calls for the use of all methods or means of combat that achieve the military objective, the roots of which go back to the theory of the just war mentioned above. The second calls for the avoidance of incidents involving those who have nothing to do with military operations, namely civilians, as well as calls to reduce the pain and injuries between fighters. This principle has its roots in religions such as Judaism, Christianity and Islam.

The core of the abovementioned principle is valid when applied in general to armed conflicts with the objective of mitigating the horrors of war by emphasizing the human side. It should be mentioned that the equation underlying the principle of proportionality is very complex as it is based on the approximation and harmonization between the good performance of military operations and the achievement of military objectives on the one hand, and respect for humanitarian principles referred to by international humanitarian law on the other (Engle 2009).

### **2.2 Explanations of the principle of proportionality**

The history of international law witnessed the first international legal document representing a notable declaration in this regard, being the St. Petersburg Declaration of 1868. The international humanitarian law is designed to "conciliate the necessities of war with the laws of humanity."<sup>11</sup> As Beach (2001) points out, the St. Petersburg Declaration has emphasized the need to review the legality of the use of any weapon about which

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<sup>11</sup> The Full Text of the Declaration preamble is available online at: <http://www.icrc.org/ihl.nsf/INTRO/130?OpenDocument> (accessed July 1, 2011).

doubts might be raised regarding compatibility between the necessities of war and humanitarian principles.

The different theories of military doctrines have caused variations in the permissibility of using methods and means of combat, and hence the role of international humanitarian law is important in seeking to reduce losses and avoid humanitarian suffering as much as possible. In this regard, a number of conditions, if they are available, will justify military operations based on the principle of proportionality, and are stated as follows:

- A complete control of the military leadership's decisions and the sources of fire to prevent any serious violations of international humanitarian law.
- Sufficiency of necessary military operations to defeat the enemy—for example, to destroy 60% of the human and military capacity of the enemy is enough to overcome and defeat it, therefore there is no need to destroy the rest of the personnel and equipment.
- Disallow the ordering or pre-planning of an attack that may lead to human genocide.
- Do not make indiscriminate attacks such as those that are not directed at a specific military objective.
- Refrain from military operations that cause unjustified pain or injury.
- Do not make attacks against the civilian population or civilian objects.
- Strive to direct all operations and the sources of fire on military targets rather than civilians, whether accidental or indirect.<sup>12</sup>

For landmines, the principle of customary international humanitarian law is the first to organize its uses. Several problems have been raised about incorporating the effects of this weapon with the military advantage and the effects of inhumane consequences, raising question marks about the legality of their use. Considering that this weapon cannot be limited to short-term effects on civilians and also on combatants, to curb those effects the proportionality of use has been organized for the first time through the Protocol on Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices, as amended on May 3, 1996 (Protocol II to the 1980 Convention as amended on 3 May 1996). The protocol

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<sup>12</sup> The International Law related to military operations, available at: <http://www.icrc.org/ihl> (accessed on August 12, 2009).

prohibits the use of landmines in certain circumstances, and in article 3 the general restrictions on the use of mines, booby-traps and other devices are outlined, and the description of indiscriminate use are discussed in section 8:

The indiscriminate use of weapons to which this Article applies is prohibited. Indiscriminate use is any placement of such weapons:

- (a) Which it is not on or directed against a military objective. In case of doubt as to whether an object which is normally dedicated to civilian purposes, such as a place of worship, a house or other dwelling or a school, is being used to make an effective contribution to military action, it shall be presumed not to be so used; or,
- (b) Which employs a method or means of delivery which cannot be directed at a specific military objective; or,
- (c) Which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated.

Moreover, a few questions can be raised: can landmines be directed at a specific target? Is it possible to make precautions to avoid this weapon when it is out of control and inflicting civilian casualties? If it is expected for this weapon to be out of control, is there any proportionality between the injury and the concrete and direct military feature?

Studies and research on landmines confirm that this weapon cannot be directed at specific military objectives, except in rare cases, and the inhumane effects on civilians and civilian objects surpass the military advantage, usually justified by military commanders during the armed conflict. Based on these arguments and facts the following question can be raised: Is it possible to restrict the use of landmines to the extent appropriate and consistent with the requirements of humanity, and approved by the customary rules of international humanitarian law?

Addressing the disproportionality that characterizes the relationship between landmines and the principle of proportionality has raised several perspectives. These concern the belief that the expected inhumane effects of landmines can be reduced, calling for the partial treatment of these effects with continuous support in using them. These perspectives are divided into three groups. First, the banning of certain types of landmines, such as non-detectable mines which explode when detected. Second, calling for mitigating the impacts of mines through adding special techniques that allow for self-neutralization mechanisms or self-

destruction. Third, calling for the need to review the UN agreement on Conventional Weapons of 1980, known as the Convention on Prohibitions or Restrictions on the Use of Conventional Weapons, which may be deemed to be excessively injurious or to have indiscriminate effects, by adding new provisions that restrict their use.

The Protocol on Prohibitions or Restrictions on the Use of Mines, Booby-Traps and Other Devices, as amended on May 3, 1996 (Protocol II to the 1980 Convention as amended on May 3, 1996), Article 3: “General restrictions on the use, of mines, booby-traps and other devices,” has committed the states who use landmines to take all the necessary and feasible precautions to protect civilians from their effects. It defines the possible precautions as:

10. All feasible precautions shall be taken to protect civilians from the effects of weapons to which this Article applies. Feasible precautions are those precautions which are practicable or practically possible taking into account all circumstances ruling at the time. These include humanitarian and military considerations. These circumstances include, but are not limited to the following:

- (a) The short- and long-term effect of mines upon the local civilian population for the duration of the minefield.
- (b) Possible measures to protect civilians (for example, fencing, signs, warning and monitoring);
- (c) The availability and feasibility of using alternatives; and
- (d) The short-and long-term military requirements for a minefield.

Despite the international efforts made to mitigate the expected impacts of the use of landmines, and especially those related to the injuries to civilians and civilian objects, these efforts and proposals have failed to achieve the stated goals. Such mechanisms or restrictions on use have not been observed, especially in non-international conflicts. Thus, there will not be any consideration or precautions taken to reduce their inhumane effects (Pictet 1966). However, based on the abovementioned we believe that the principle of proportionality does not fit at all with the use of landmines.

### **3. Words of Caution about Mine Action Responsibilities**

The mine action activity in Kurdistan was previously financed and managed by the United Nations administered Oil for Food Program and some other independent Aid agencies. The Iraqi National Mine Action Authority was established in 2003 and has taken responsibility for

strategic planning, budgeting, coordination of different projects and activities, coordination of relations with donors, and setting national mine action standards. Among other tasks are maintaining the national information management system database for mine action. This has exposed Kurds to a higher risk level and subjected them to an Iraqi legal system which is not in their favour.

The transfer of financial, manpower and action responsibilities from international NGO and regional authorities to the central authorities is unfortunate. It has placed the Kurds in a vulnerable situation. In addition, the reorganization has resulted in inefficiency, low intensive or lack of clearance activities, and the continued suffering of the civilian population in the region. The deteriorated situation is a direct result of the inability of the Kurdistan regional government to negotiate a better solution and to allocate the necessary resources financed by the regional budget. Furthermore, formal legal claims should be made such that the cost of mine clearance and victim rehabilitation is covered by the central government budget.

Together with the start-up of mine action activity in the Kurdistan Region in 1999, UNOPS established a comprehensive information management system. The system allows for the management of all mine-related data processing. All previous minefield information records since 1992 were imported to the new system. The new information database was originally developed and designed to describe the overall mine and ERW problem in the region. It was adapted to further developments in the mine action sector and helped to implement and integrate information aspects to adhere to the new international mine action standards for humanitarian mine clearance operations. Certain improvements such as verification of the quality of the existing data, management of missing fields and modification of the structure of the database were also undertaken. In sum, the process described above allowed the Kurdistan region mine action program to enhance its strategic management and priority-setting capabilities.

The new system involves reporting data from regional to central mine action authorities. The same database is used by both parties for planning and managing mine action operations. All information entered into this new system is automatically reflected in the Baghdad database and should be available to plan future operations. However, care should be taken such that this sensitive and detailed information is not available to the Iraqi military and used in future mine activities.

The regional government is urged to allocate a fixed share of its annual budget raised from oil and gas revenue sharing to landmine awareness and

clearance, and landmine related health care provision and rehabilitation programs. This will make the region independent of foreign NGOs with different priorities. Planning and management of mine action in the region should be strictly in the hands of local people. Currently, the stalled mine action activity is in the hands of the central government authorities, part of which in the past authorized minelaying in the region. Thus, a centrally nominated and financed authority is not trustworthy in leading the clearing actions in the Kurdistan region.

Although Iraq has recently signed the international anti-personnel mine treaty, none of the minefield records have been made available to the Kurdistan region's mine action program. This lack of records has made the minefield clearance costly and lengthy. It indicates an unchanged central government policy towards the Kurdish population and its regional government. The regional landmine agency should be cautious in distribution of the collected data to the central government landmine agency which provides detailed information about the locations of landmines and their impacts. The information is too sensitive to be accessed by the army and security forces of Iraq and there is no doubt that these forces will use the information in future minelaying activities in the region.

#### **4. Policy Recommendations**

We suggest a number of recommendations on enabling the Kurdistan regional government to sue the Iraqi government as an illegal user of landmines and to sue the countries who supplied the landmines. Due to the complicated nature of the issue, the KRG is required to establish a legal committee to raise the issue of Kurdish mine victims in a way that secures their families financially and forces the Iraqi government to allocate a necessary budget for those victims. Furthermore, the KRG should make a serious effort to implement a landmine law and force the Iraqi government to legislate it, such that the victims and internally displaced people are protected and compensated for their sufferings.

Alongside of the legal committee, we suggest a research institute be established with the primary objective of conducting research on landmines to analyze collected statistics. Such institutes will play a major role in the coordination of research related to different aspects of landmines, such as information, prevention, training, disability, rehabilitation and the labour market. In addition, it will enable the gathering of evidence on the crimes committed which support the regional government in following up the landmine issue for matters of prevention,

reducing impacts, victim compensation and bringing the landmine users to justice.

After agreement on a united but federal Iraq, the landmine responsibility was transferred from international organizations and local agencies to the central government. From the Kurds' perspective the transfer of responsibility to a central mine action agency to plan and implement demining is a major step backwards. This is evidence of a lack of awareness and interest of the Kurdistan regional government to the issue. This action seems to be inappropriate considering the Iraqi government's crimes against Kurds, including the systematic laying of mines in the Kurdistan region. There is a likelihood that the collected information might be misused by the Iraqi army and security forces in a future conflict. The regional government should promote local capacity and through its legal system, or an international legal system with reference to international law related to landmine use, persecute those responsible for laying mines in the region. The KRG should do their utmost to force the central government to allocate a special budget to clean minefields and to rehabilitate the victims of their crime.

## **5. Conclusions about Legal Actions against Landmine Users**

The inequality in the use (and overuse) of some types of conventional weapons has been the main feature of armed conflicts in the current era. Although it is not a new phenomenon at all, it is important to consider the related principles of international humanitarian law in the use of certain conventional weapons in the absence of internationally clear expressions on this issue. It is no longer sufficient to refer only to these principles in the core of international instruments without finding a mechanism to curb the violations that characterize contemporary armed conflicts, especially after the 2003 war against Iraq and the war in Lebanon in 2006 that were characterized by serious and frequent violations of the principles discussed above. The principles refer only to use of landmines, but not to their production and supply.

In this chapter we have addressed two important principles of international humanitarian law related to the use of certain conventional weapons, their military necessity and the proportionality and adaptation of the use of certain types of conventional weapons. In this regard, landmines and cluster munitions are to be considered the most hideous and barbarous weapons known to today's military arsenals. It is clear from what has been put forward in this chapter that despite regulation by the international

humanitarian law regarding the major issues related to armed conflict, it has not been effective or sufficient in dealing with the terrible events associated with these armed conflicts.

Countries and non-international parties in armed conflicts often try to justify serious violations based on the principle of military necessity and proportionality. Because there is no international agreement to identify a mechanism in which it determines the legitimacy of using certain types of conventional weapons, the conflict parties will continue to violate the international humanitarian law. This is prevalent in cases where catastrophes and atrocities continue to kill many civilian people who have no direct relationship to these conflicts.

To curb these serious violations of international humanitarian law, there must be a specific mechanism to investigate them and to prosecute those responsible. This can be done through establishing a special international court dealing with violations of international humanitarian law to act as a deterrent to violations that the developing countries face amid the silence of the world's great powers and producers and suppliers of such inhuman weapons.

The countries responsible for the formation of such a court should be the same countries who led the negotiation in Ottawa and Oslo, as they contributed to two important humanitarian agreements, namely the Ottawa Convention to ban landmines in 1997, and the Dublin Convention of 2008 to ban cluster munitions. In the process, they should take advantage of the experience and evidence of atrocities in the countries suffering from the use of such inhuman weapons. The major powers with access to technical, financial and organizational capacities to contribute to the formation and operation of such a noble activity but with veto power in international institutions seem not be legitimate partners. They have shown in practice with no exception to take sides with their businesses. Under such conditions and their strong influence, it seems that many improvements along the lines discussed above, which favour the suffering civilian populations, are not forthcoming.

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## CHAPTER FIVE

# PISTACIA ATLANTICA KURDICA, THE KURDISH MEDICINAL PLANT

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This study represents the first comprehensive investigation into the composition and biological activity of the trunk exudates of *Pistacia atlantica kurdica* (*P. atlantica kurdica*), a native Kurdish plant that produces kurdica gum. *P. atlantica kurdica* is widely found in the region of the Zagros Mountains, particularly in Western and Northern Iran, Eastern and Northern Iraq, Southern Turkey and Northern Syrian Kurdistan.

*P. atlantica kurdica* shows a discontinuous pattern of distribution over this region and it is an important constituent of the natural vegetation. Kurdica gum was fractionated, and some of its fractions and chemical entities were found to be active against *Helicobacter pylori* (*H. pylori*) and some other Gram-negative and Gram-positive bacteria. Some fractions and chemical entities were found to have broad-spectrum antimicrobial activities. These chemical entities have a Minimum Inhibition Concentration (MIC) consistent with contemporary antibiotics and could represent viable lead compounds for commercial development.

### 1. Introduction

Historically, trunk exudates of the genus *Pistachia* have been used for the treatment of stomach ulcers. Archaeologists in 1982 found a late Bronze Age shipwreck with one hundred jars filled with mastic and some other gums from the genus *Pistachia* that had been used by the Egyptians for medicinal purposes (see Stefanos et al., 2000). The ancient Greek

physicians Galenus in “*Simplicium medicamentorum temperamentis ac facultatibus libri XI*” and Dioscorides in “*De Materia Medica*” have described the properties and usages of mastic oil. The Persian pharmacist, physician and philosopher Avicenna (980–1037) prescribed the gums for abdominal pain, heartburn and topological infections. The Arab physician Ibn Al-Baytar, living in the thirteenth century, prescribed these gums for upper abdominal pain, heartburn, gastric and intestinal ulcers. (see IbnAl-Baytar)

*P. atlantica kurdica* belongs to the family *Anacardiaceae*, a small family with about four hundred species of mainly tropical trees and shrubs. Some of the more well-known of these species are *Anacardium occidentale* (Cashew, Pajuil, Maranon), *Mangifera indica* (Mango) and *Pistachia* (Pistachio).

Leaves are alternate and pinnate without stipules in all the European species. Flowers are small with sepals and three to seven petals in some of the species, and without petals in others. All members of this family produce a resinous sap. The most well-known species of this family are *Anacardium occidentale* and *Pistacia vera*, trees that are cultivated for their nuts (Cashew and Pistachio).<sup>3</sup> *Pistacia* is sometimes placed in its own family, the *Pistaciaceae*.

Within the genus *Pistacia* are eleven species of trees and shrubs, These species found in some Mediterranean countries, Central Asia and in Southern and Central America. (see De Rougemont, 1989) The most well-known of these species are: *Pistacia atlantica* (Mount Atlas Pistache, Mount Atlas mastic tree and kurdica), *Pistacia chinensis* (Chinese Pistache), *Pistacia lentiscus* (Mastic Tree, Evergreen Pistache), *Pistacia terebinthus* (Terebinth), *Pistacia vera* (Pistachio). (see Faucon, 1998). *P. atlantica kurdica* is found widely in the region of the Zagros Mountains, particularly in Western and Northern Iran, Eastern and Northern Iraq, Southern Turkey and Northern Syrian Kurdistan. (see Aohary, 1952). *P. atlantica kurdica* shows a discontinuous pattern of distribution over this region and it is an important constituent of the natural vegetation in this area. Saghez Sazi Kurdistan has made a successful attempt to cultivate some trees in Hasan Abad, Sanandaj, where the factory is located. We highly recommend the cultivation and protection of this species by the Kurdistan Regional Government (KRG).

Initially, the kurdica gum was fractionated and its chemical compositions were characterised and screened against *Helicobacter pylori* (*H. pylori*), associated with a wide range of gastroduodenal pathologies and gastric cancer. The antimicrobial screening of the fractions and isolates led to the discovery of fundamentally new information that went

beyond *H. pylori*, expanding the original parameters of the project. The extent of these findings suggests that new classes of antibiotics may have been discovered. Primary studies on their structure and potential mechanism of action have been undertaken.

In 1994, a National Institutes of Health (USA) Consensus Development Conference concluded that there was an association between *H. pylori* infection and peptic ulcer disease, and recommended that ulcer patients with *H. pylori* be treated with antibiotics. These guidelines suggest that persons with active ulcers or a documented history of ulcer disease should be tested for *H. pylori*, and if found to be infected must be treated with antibiotics (Martin, 1996). One of the most widely used regimes to treat *H. pylori* infection following the acceptance of a role of infection in serious gastric disease consisted of colloidal bismuth subcitrate (DeNol) in combination with two antibiotics, either metronidazole and tetracycline or ampicillin/amoxicillin. This triple therapy is complicated as the patient has to take up to eighteen capsules a day for the first week and many experience mild side-effects, including nausea and a metallic taste on the tongue, caused by the 5-nitroimidazole (van der Hulst et al., 1996). The bismuth-based triple therapy became more effective when combined with acid suppressive proton pump inhibitors (PPI), such as Omeprazole (AstraZeneca). The effectiveness of bismuth-based triple therapy ranged from 87.9% and 89.2% for one-week and two-week therapy respectively, with increased efficacy when used in combination with a PPI, with claims of good success rates (94.8%) (van der Hulst et al., 1996). The PPI acts by increasing gastric pH, thereby allowing the antibiotics to be more active, probably due to bringing the gastric acidity into the range of optimal drug activity.

While classical triple therapy has fallen from favour, new treatment regimens using acid suppressive therapy, particularly proton pump inhibitors, to enhance antimicrobial drug efficacy have emerged as the preferred therapy for treatment of *H. pylori* infection. These regimens include one to two weeks' therapy with a proton pump inhibitor, e.g. omeprazole twice a day (b.i.d.) 20 mg, together with two appropriate antibiotics, such as a macrolide (e.g. clarithromycin 500 mg b.i.d.) and amoxicillin (1000 mg b.i.d.), or amoxicillin (500 mg b.i.d.) and a nitroimidazole (e.g. metronidazole 400 mg b.i.d.), or a macrolide (e.g. clarithromycin 250mg b.i.d.) and a nitroimidazole (e.g., metronidazole 400 mg b.i.d.) (Berstad et al., 1996)).

There is also evidence that a one week, low-dose regime consisting of omeprazole (20 mgs daily), clarithromycin (250 mgs, b.i.d.) and metronidazole (400 mgs b.i.d.) will eradicate *H. pylori* in 90–100% of

patients (Almari et al., 1997). The performance of these various combinations varies depending on the study design, the analysis performed (per protocol or intention to treat), the experience of the investigator and the level of patient education or supervision.

The eradication efficacy with a PPI such as omeprazole or lansoprazole in combination with clarithromycin and amoxicillin or metronidazole is between 79–96% (Hazell et al., 1997; Lind et al., 1996). In practice, it is rare to see successful treatment in greater than 90% of patients. The successful treatment of *H. pylori* infection results in the eradication of the bacterium, and also cures and prevents the development of the associated diseases (Riberio et al., 2004)). However, the development of the resistance by the bacterium to the antibiotics that are currently used is the major impediment for these therapeutic regimens (Hazell, 1999; Hyde et al., 1997; Jorgensen et al., 1996). When treatment with amoxicillin, clarithromycin and/or metronidazole fails, then patients will be treated with tetracycline-based combination regimens (Riberio et al., 2004). Also, treatment with tetracycline-based regimens is an alternative therapy to reduce the costs of treatment (Goodwin, 1997). Tetracycline is widely available and cheap, and until recently the resistance against this antimicrobial was rare in *H. pylori*. As this antibiotic is cheap and can be obtained in some countries without prescription, the incidence of tetracycline resistance is increasing, particularly in those countries where antibiotic use is less regulated (Hazell et al., 1986; Megraud, 1993; O'Rourke and Bode, 2001). The emergence of tetracycline resistance of *H. pylori* is a serious problem as it has a negative impact on the tetracycline-containing regimens (Riberio et al., 2004).

The challenge now is to find a shorter course of treatment and one more patient friendly by considering the antibiotics to one capsule which will be effective, efficacious, have fewer side effects and make *H. pylori* eradication less expensive (Goodwin, 1997). Regrettably, in recent times the pharmaceutical industry appears to have lost interest in the development of specific agents to treat *H. pylori* infection. A study was conducted to assess the efficacy of triple and quadruple therapy in patients who had failed one or more eradication regimens. The resistance to metronidazole, clarithromycin and amoxicillin were determined by an E-test (a strip impregnated with antibiotics across a gradient within it). Patients were randomly divided into two groups. The first was treated with triple therapy receiving PPI pantoprazole 40 mg, amoxicillin 1 g, levofloxacin 250 mg, all twice daily and for ten days. The second group was treated with quadruple therapy, receiving omeprazole 20 mg twice

daily, tetracycline 250 mg 4 times daily, metronidazole 500 mg twice daily, and bismuth subcitrate 240 mg. This study showed that the levofloxacin-based triple therapy was more successful (70% eradication) in comparison to quadruple therapy (37% eradication) (Bilardi et al., 2004).

So far there has been no report of resistance to any bismuth compound that has been used in classical triple therapy (e.g. a nitroimidazole plus a bismuth compound, together with either amoxicillin or tetracycline). This therapy was reported to affect a cure in more than 80% of patients. Unfortunately, problems with poor patient compliance and the ability of *H. pylori* to develop resistance to nitroimidazole has resulted in recurrent reports of treatment failure. (see Bateson, 2000).

The antimicrobial resistance patterns should differ among countries and regions as the basis of therapies are different, and antimicrobial use is also variable. However, the occurrence of resistance is worldwide. Evidence from a number of countries supports the former assertion. *H. pylori* resistance to antimicrobial was tested in Poland by the in vitro susceptibility of 337 isolate from children (N=179) and adults (N=158), cultured from various regions of the country between January 2001 and December 2004. All the isolates were susceptible to amoxicillin and tetracycline, 28% were resistant to clarithromycin, 46% were resistant to metronidazole and 20% of isolates were simultaneously resistant to clarithromycin and metronidazole (Dzierzanowska-Fangrat et al., 2005). A retrospective analysis in Saudi Arabia revealed 35.2% resistance to Metronidazole in patients receiving the first line therapies and 78.5% in patients receiving second line therapies. In this study, only one strain was found to be resistant to tetracycline (Al-Qurashi et al., 2001). The high resistance to Metronidazole may be a product of the availability and use of this antibiotic in this region for the treatment of other infections. In a Korean study, two hundred and twenty patients who failed first line treatment underwent an endoscopic examination and had biopsies taken. Overall, 50% of these patients were infected with antibiotic resistant *H. pylori*. The isolates were obtained from both the antrum and the corpus. They were tested against various antibiotics and their resistance profile was found to be amoxicillin (0.5%), clarithromycin (5.9%), furazolidone (1.4%), metronidazole (45.5%), nitrofurantoin (1.4%), and tetracycline (6.8%). Heteroresistance were also present in 38% of the patients. DNA fingerprinting genotype analysis on the forty-one pairs of isolates showed identical or similar patterns which in turn suggest that the antibiotic-resistant *H. pylori* develop from a pre-existing susceptible strain rather than co-infection with a different strain (Kim et al., 2003). These results

could also suggest the resistance may have developed due to the use of low doses of antibiotics during the initial treatment (Kim et al., 2003). These findings suggest that care is needed to ensure appropriate dose and duration of therapy and the importance of patient compliance.

After thirty years since the discovery of *H. pylori*, no ideal treatment regimen has been found. Even with the most effective triple or quadruple therapy, 20% of patients develop a resistance to the antibiotics (Gisbert and Pajares, 2002). Even the so-called rescue therapies (such as a quadruple combination of PPI, bismuth, tetracycline and metronidazole or levofloxacin-based triple/quadruple therapies) fail to eradicate all *H. pylori*, with the best data suggesting success in only 80–90% of patients (Gisbert et al., 2004). Due to the emergence of antibiotic resistance, the effective lifespan of any given antibiotic against any pathogen can be limited. Worldwide spending on the discovery of new anti-infective agents (including vaccines) is expected to increase 60% from the spending levels in 1993. New lead compounds including plant sources are also being investigated (Alper, 1988).

Antibiotic resistance in *H. pylori* has emerged as a significant clinical problem. Furthermore, contemporary therapy is expensive and complex, particularly for the third world, developing countries and the newly-forming nation of Kurdistan. The body of work contained within this article was carried out to investigate an alternative therapy based on observations of the traditional therapy for gastric disease in the Middle East and Kurdistan. One of these traditional therapies centres on plants of the genus *Pistacia*, particularly kurdica gum. In 2000, I screened some natural products including kurdica and mastic gum for their anti-microbial activity against *H. pylori*. My first article was published in 2001, reporting on the first thorough investigation into antimicrobial activities of mastic gum. (see Sharifi et al., 2001)

Kurdica gum has been used by traditional healers for the relief of upper abdominal discomfort, gastralgia, dyspepsia and peptic ulcers, as well as a masticatory and by dentists for filling teeth. It has also been reported to possess stimulant and diuretic properties. In 1984, a double-blind trial of mastic (arguably kurdica gum) and placebo in the treatment of duodenal ulcers claimed to heal them in 70% of patients as compared to 22% of the placebo group (Al-Habal et al., 1984).

## 2. Experimental

### 2.1 Extraction of essential oils and resin

The isolation of the essential oils from a sample of crude composite kurdica gum, collected from the Iranian Kurdistan province, was achieved by steam distillation with water cohobating of the gum (50g) in a Dean and Stark apparatus, which was modified to give a lower phase return of the water. The steam distillation was carried out over 10 h. The essential oil solution was dried using anhydrous sodium sulfate (2g) and, after decanting and filtering to remove the sodium sulfate, the solution was transferred to another container. The essential oil from the gum (10g) was then retained for further analysis and for anti-microbial activity trials against *H. pylori* and other Gram-negative and Gram-positive bacteria. The crude resin (42g) remaining after steam distillation was then fractionated.

### 2.2 Fractionation of the Resin

The finely powdered crude resin (42g) was dissolved in anhydrous diethyl ether (50 mL.), diluted with anhydrous methanol (350mL.), and allowed to stand in a stoppered flask overnight. After decanting from any insoluble residue (0.1g), the solution was evaporated under vacuum. The resulting solid was dissolved in anhydrous diethyl ether (50 mL.), diluted with anhydrous methanol (350mL.), allowed to stand, and then decanted from any insoluble residue (0.80g). After evaporating, the supernatant solution under vacuum, solid product was allowed to dry in air overnight. The dry residue was accurately weighed (41.7g), dissolved in anhydrous diethyl ether (50mL.), diluted with anhydrous methanol (350mL.) and then to this solution a milli-Q water was gradually added, followed by 3g of magnesium chloride. The solution was mixed thoroughly and allowed to stand overnight. The precipitate that had formed was decanted and classified as "Polymer Fraction" (10.2g).

The ethereal layer was dried over anhydrous sodium sulphate, filtered, evaporated and the resulting solid product accurately weighed (30.3g). This product was then dissolved in anhydrous diethyl ether (50 mL) and diluted with anhydrous methanol (300mL). The resulting solution was extracted with sodium carbonate solution 5% (w/v) (100mL) and the sodium carbonate extract acidified and then re-extracted with fresh anhydrous diethyl ether (100mL). This ethereal solution was evaporated

under vacuum and a sodium carbonate acidic fraction was obtained (11.05g)—“fraction a.”

The original ether solution was then extracted with 0.5 N sodium hydroxide (70 mL), producing a viscous liquid above the aqueous layer, a light yellow aqueous solution. The viscous liquid and light yellow solution were individually acidified, re-extracted into fresh ether and the ethereal extracts were dried over anhydrous sodium sulphate, filtered and evaporated under vacuum. Thus, a sodium hydroxide-(in) soluble acid fraction from the viscous liquid, “fraction b” (6g), and a second sodium hydroxide-soluble acid fraction, “fraction c” (2g) were obtained. The original ethereal layer was dried over anhydrous sodium sulphate, filtered and then evaporated under vacuum, giving the “neutral fraction” (13g).

The polymer fraction (10.2g) was air dried and any remaining moisture was removed by freeze drying at  $-40^{\circ}\text{C}$  (9.7g) then retained for further analysis and anti-microbial activities. The molecular weight distribution of the polymer was determined by Gel Permeation Chromatography (GPC).

As the bioactivity of the acidic fractions “a” and “b” were much higher than other fraction having a lower MIC, they were therefore chosen to undergo further analysis and characterization. The chemical entities of these fractions have been reported elsewhere (Sharifi and Hazell, 2012).

## 2.3 Bacterial strains and culture conditions

*H. pylori* strains 26695, J99, RSB6, P10, SS1, SS2000, N6, NCTC11637 and RU1 were obtained from the culture collection of the University of New South Wales and were used for the MIC determinations. Strain 26695 was used for kill studies. The strains were grown on Blood Agar Base No. 2 (Oxoid, Basingstoke, UK) supplemented with 7% defibrinated horse blood, amphotericin B ( $2\mu\text{g/mL}$ ) and Skirrow’s selective supplement, consisting of the antibiotics Trimethoprim ( $5\mu\text{g/mL}$ ), Polymixin B ( $2.5\mu\text{g/mL}$ ), and Vancomycin ( $10\mu\text{g/mL}$ ). Bacterial cultures were incubated in an atmosphere of 10%  $\text{CO}_2$  in air, 95% relative humidity at  $37^{\circ}\text{C}$ .

### Minimum Inhibitory Concentration

Stocks of 100mg/ml of kurdica gum and its fractions and isolates (test samples), except the essential oils, were prepared in methanol and used to determine the Minimum Inhibitory Concentration (MIC) and also to investigate kill kinetics. To sterile molten blood agar base (184mL at  $55^{\circ}\text{C}$ ), 2 ml of test samples from the stock was added, mixed and allowed to stand overnight at  $55^{\circ}\text{C}$ . Then, 14 mL of defibrinated horse blood

(Oxoid, UK) was added to give a concentration of 1mg of test sample in 1mL of blood agar. Serial dilutions were then performed by diluting the above blood agar-containing test sample with freshly prepared blood agar, giving test sample concentrations of 1.0mg/mL, 0.5mg/mL, 250µg/mL, 125µg/mL, 62.5µg/mL and 31.25µg/mL to 0.01µg/mL. Plates were poured from each dilution, and were inoculated with the aforementioned *H. pylori* strains and some other Gram-negative and Gram-positive bacteria listed in table 5.1. The presence or absence of growth was noted after five-days incubation at 37°C in a CO<sub>2</sub> incubator, with each test being performed in duplicate.

**Table 5.1 Gram-positive and Gram-negative bacteria obtained from UNSW**

Gram-negative bacteria			Incubation
<i>Escherichia coli</i> type 1	UNSW	048200	37° C
<i>Salmonella typhimurium</i>	UNSW	086300	37° C
<i>Serratia marscens</i>	UNSW	052001	37° C
<i>Pseudomonas aeruginosa</i>	UNSW	029101	37° C
<i>Alcaligenes faecalis</i>	UNSW	034000	37° C
<i>Enterobacter aerogenes</i>	UNSW	045800	37° C
<i>Pseudomonas fluorescens</i>	UNSW	036800	30° C
<i>Proteus vulgaris</i>	UNSW	027800	37° C
<i>Porphyromonas gingivalis</i> (W83)	UNSW		37° C
Gram-positive bacteria			
<i>Bacillus cereus</i>	UNSW	052300	37° C
<i>Staphylococcus aureus</i>	UNSW	056201	37° C
<i>Streptococcus faecalis</i>	UNSW	055440	37° C
<i>Staphylococcus epidermidis</i>	UNSW	001402	37° C
<i>Bacillus subtilis</i>	UNSW	030702	30° C
<i>Corynebacterium sp.</i>	UNSW	000400	37° C

For all MIC tests 10 $\mu$ L/mL, 5  $\mu$ L/mL, 2.5  $\mu$ L/mL, 1.25  $\mu$ L/mL, 0.62  $\mu$ L/mL or 0.32  $\mu$ L/mL methanol in agar base was used as a control. The MIC was determined as the lowest concentration of the test sample that showed no growth.

## 2.4 MIC of the essential oils

The strains were grown on Blood Agar Base No. 2 (Oxoid, Basingstoke, UK), supplemented with 7% defibrinated horse blood, amphotericin B (2 $\mu$ g/mL) and Skirrow's selective supplement, consisting of the antibiotics Trimethoprim (5  $\mu$ g/mL), Polymixin B (2.5  $\mu$ g/mL), and Vancomycin (10  $\mu$ g/mL). Bacterial cultures were incubated in an atmosphere of 10% CO<sub>2</sub> in air, 95% relative humidity at 37° C. Isosensitest (Oxoid, Basingstoke, UK) broth was prepared containing 0.5% Tween 80 and 1.00% essential oil of Kurdica (EOK). Serial dilutions were made until the EOK concentration of 0.0625% was achieved. Dilution tubes containing 1ml of mixture were stored at 4° C. The inoculum was prepared with Isosensitest broth from 36 h cultures grown on CSA, using the above-mentioned *H. pylori* strains diluted to an optical density (OD) of 0.1 (0.5 McFaellan standard) at A<sub>600</sub> with Isosensitest broth containing 0.5% Tween-80. Each culture was incubated for 2 h to allow for the recovery of the bacteria. The serial dilutions of EOK were then inoculated with 1ml of diluted culture and incubated using tissue culture flask at 37°C in a CO<sub>2</sub> incubator for 48h. CSA plates were then inoculated with samples from the dilutions using a spiral platter and incubated at 37°C in a Stericult incubator (Forma Scientific, USA) at 37°C with 95% relative humidity and 10% CO<sub>2</sub> to reduce oxygen and provide a microaerophilic environment, with each test being performed in duplicate. Control cultures were prepared in the same manner without adding EOK.

The Minimum Bacterial Concentration (MBC) was defined as the concentration of EOK that killed the entire inoculum and was equivalent to the Minimum Inhibitory Concentration (MIC).

## 2.5 Agar plates

All other Gram-negative and Gram-positive bacteria were grown on Luria Bertani medium. Plates were incubated at appropriate temperature for 12–18 h in an aerobic/anaerobic environment. Agar plates were used for maintaining cultures and also as a source of inoculum for liquid cultures.

## 2.6 Liquid culture

LB broth was used to grow all Gram-positive and Gram-negative listed below. The cultures were grown for 12–18 h in an aerobic/anaerobic environment. Liquid cultures were used to determine MIC.

## 2.7 Kill kinetics

Time-kill kinetic experiments were performed with static liquid cultures containing Isosensitest broth (Oxoid) supplemented with 5% horse serum (Oxoid), 4.2 mg/mL Amphotericin B and Skirrow's selective supplement. The inoculum was harvested with Isosensitest broth from 36 hr cultures grown on *Campylobacter* Selective Agar (CSA). To ensure that the strain was at the same phase of growth, the Optical Density 600 (OD600) of the inoculum was adjusted to 0.1 and diluted in the culture medium to give a starting concentration of  $1.00 \times 1.00 \text{ E} + 07$  at 600nm. Each culture was incubated for 2 h. to allow for the recovery of the bacteria before the test samples were added at their respective MIC and 5MIC concentrations. Control cultures at MIC and 5MIC containing the appropriate solvent/s were also performed. Samples were taken at 0 to 120 min at 5 min intervals, diluted with 0.9% saline, plated on *Campylobacter* Selective Agar (CSA) using a spiral platter and incubated at 37°C in a CO<sub>2</sub> incubator for 48 h to determine viable colonies.

## 3. Results and Discussion

The major constituent of the essential oil of *P. atlantica kurdica* is  $\alpha$ -pinene 97.20% that gives a unique characteristic to this species, as shown in Table 5.2 below (Sharifi and Hazell, 2011).

**Table 5.2. The composition of essential oil of kurdica gum in the order of elution time**

Peak No.	Compounds	RA <sup>a</sup> (%)	RI <sup>b</sup> (Exp)	RI <sup>c</sup> (lit)	MWt	Identification
1	$\alpha$ -Thujene	0.07	920	931	136	1
2	$\alpha$ -Pinene	97.18	935	939	136	1
3	Camphene	0.41	946	953	136	1
4	Sabinene	0.16	972	976	136	1,2
5	$\beta$ -Pinene	1.26	975	980	136	1
6	$\Delta$ 3-Carene	0.11	1010	1011	136	1,2
7	Limonene	0.06	1089	1088	136	1,2

<sup>a</sup> RA; relative area (raw peak area relative to total peak area).

<sup>b</sup> RI (Exp); programmed temperature retention indices as determined on BP-5 column using a homologous series of *n*-alkanes (C<sub>8</sub>-C<sub>30</sub>) as internal standard and H<sub>2</sub> as carrier gas.

<sup>c</sup> RI (lit); values from literature data using He as carries gas, with T denoting programmed temperature values.

MWt: molecular weight; values with subscript “d” confirmed from GC-MS (CI) data.

<sup>e</sup> 1; based on retention index, 2; based on comparison of mass spectra with literature data (NIST, NISTREP) or authentic sample, 3; retention time identical to authentic compound.

The EOK is active almost equally against *H. pylori* and all other Gram-positive and Gram-negative bacteria ranging from 500–1000 mg/mL (see Table 5.3) and it is also bactericidal. As the major constituent of EOK is  $\alpha$ -pinene which has a very low toxicity (Zlatkis et al., 1973; Koppel et al., 1981), this essential oil could be a good candidate for the health products, for example a mouthwash replacing other monoterpenes which possess higher toxicity. The broad antimicrobial spectrum of the EOK with high MIC could be used for topological infections. It can also be used as an antiseptic and a disinfectant. Alpha pinene is also used in perfumery and as an antioxidant in edible oil and processed food. Hydrogenated monoterpenes can also be used as a fuel additive. Mixtures of diesel fuel and up to 10% of saturated monoterpenes have been tested by ASTM D975 to evaluate the 2,6-dimethyloctane and 1-isopropyl-4-methylcyclohexane as diesel fuel additives (Tracy et al., 2009). The results show that the tested mixtures were within the acceptable ranges specified by ASTM for diesel fuel. These monoterpenes could be a renewable source of fuel additives. Beside this, the additive lowered the measured cloud point, compared to the base diesel fuel.

The MIC values against nine strains of *H. pylori*. and all other Gram-positive and Gram-negative bacteria listed in Table 5.1, for polymer fraction of the kurdica gum ranged from 200µg/mL-500µg/mL. The MIC data of these polymeric compounds are not consistent with contemporary antibiotics but are rather consistent with topical disinfectant-like compounds. The details of the thorough investigation into the polymeric fraction have been published elsewhere. (see Sharifi et al., 2012; Ebrahimi et al., 2008)

The chemical components of the acidic fraction “a” and “b” were isolated,<sup>30</sup> characterised and screened against the strains of *H. pylori* and all other Gram-negative and Gram-positive bacteria listed in Table 5.1. The MIC results are shown in Tables 5.3, 5.4 and 5.5 below.





**Table 5.5 The MIC values of the isolated components of the acidic fractions of the kurdica gum against the Gram-positive bacteria ( $\mu\text{g/mL}$ )**

Sub-fractions of acidic fractions "a" and "b" of gums	Bacillus cereus	Staphylococcus aureus	Streptococcus faecalis	Staphylococcus epidermidis	Bacillus subtilis	Corynebacterium sp.
Moronic acid	50	50	75	50	100	50
Oleanonic acid	50	50	50	50	50	50
Ursonic acid	100	100	100	100	100	100
Oleanolic acid	20	20	20	25	20	20
Isomasticadienonic acid	5	5	10	5	5	5
3-epi-isomasticadienolic acid	5	5	5	5	5	5
Masticadienonic acid	5	5	5	5	5	5
Dihydromasticadienonic acid	2	5	2	5	2	2
3-O-acetyl-3epi(iso)masticadienolic acid	0.01	0.05	0.01	0.02	0.02	0.01
Masticadienolic acid	5	10	5	5	10	5
Dihydromasticadienolic acid	2	2	2	2	2	2
3-acetoxy-3-epiisomasticadienolic acid	2	2	5	2	2	2
3-acetoxy-3-epimasticadienolic acid	2	5	2	2	2	2

It is important to state that most of these chemical entities have MICs consistent with contemporary antibiotics. Most of these chemical entities have not been tested for antibacterial activity previously, particularly with respect to *H. pylori*. Thus, it was important to further characterise these compounds with respect to their capacity to inhibit or kill bacteria.

The antimicrobial screening of these chemical entities led to fundamentally new information about a new class of antibiotics. The mechanism of their action and structurally related activities has been discussed in a separate paper.<sup>30</sup> Furthermore, the potential to enhance the antimicrobial activity of antibiotics has been incremented and as a result the ability to design a new class of antibiotics has become possible.

#### 4. References

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**PART II**  
**DIASPORA**

## CHAPTER SIX

# IMMIGRATION AND IDENTITY CRISIS AMONG KURDISH YOUTH IN DENMARK

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### **Abstract**

The frequency and duration of migration affects family structures and has psychological effects on the well-being of individual family members. Present psychological and sociological studies confirm that migration has a complex impact on the mental health of children who are living in immigrant families and whose parents are immigrants. It is obvious that problems facing children growing up in immigrant families can be different to those specific to childhood in the more normal environment of their home country. In the case of migrations, the crisis complexity may worsen over time. Several factors can affect the crisis magnitude: the cultural distance between home country and the country of migration, the background of the people who migrated to the new country, the host country with immigrants, family structure and many other environmental factors. Migration problems and cultural identity among Kurdish youth is one of the important issues which should be intensively focused on in applied research. Teens' inabilities in explaining their cultural identity can often produce intense anxiety. These anxieties, in many cases lead to unhealthy behaviours by the youth and result in undesirable outcomes from the family and social point of view. Therefore, in this study the objective is to investigate immigrant teenagers' behaviour and to try to analyse encounters between two Kurdish cultures and that of Denmark as the host country. This will help us to identify some factors as the source of identity crisis among the Kurdish youth, and an attempt is made to find an optimal solution to tackle the issues, alternatively reducing their negative effects through different preventive measures.

**Keywords:** Immigration, identity crisis, causal factors, mental health, preventive measures, Kurdish youths, Denmark.

## 1. Introduction

Immigration and identity crisis among the youths are important challenges to the individuals, their families and society in general. This report examines immigration and identity crisis among the Kurdish youth in Denmark from a multi-faceted perspective. It draws on original field research and an extensive review of scholarly and policy studies to examine how migration effects the young refugees' identity crises, social behaviour, and mental health and culture characteristics. The report highlights how migration affects the lives of the youth that migrants leave behind, which often changes depending on how they are organized and function. This report devotes particular attention to how migration—by one or both parents—affects the children left behind. The frequency and duration of migration affects family structure and has psychological effects on the well-being of individual family members, especially the youth.

The greatest health risks for adolescents and youths around the world are behavioural or have a strong behavioural component (e.g. suicide, peer violence, delinquency, substance abuse and sexually transmitted diseases), rather than being of a more bio-physiological nature, as is the case for most child and adult populations (Laurie et al. 1999). Many of these health risks result from youths' attempts to cope with elevated levels of psychosocial stress experienced as a result of transitions that occur during social adolescence, a developmental period that generally includes biological, cognitive, and social-relational transitions (Lowe 2003). In this regard, many researches have been written but only a few studies have been devoted to the real crisis of this phase, termed by Ericsson (1968) as an "identity crisis."

Therefore, the current study seeks to shed light on what is going on in the adolescent struggles of this crisis stage, and the resulting behaviour that may harmonize with the social values and principles, or contradict the terms of the deviation and identity disorder. This study contributes to a better understanding of the problem of identity crisis facing Kurdish immigrants in Denmark. In addition, it provides policy recommendations on how to prevent or remedy such negative effects.

## 2. Why do People Choose to Migrate?

The numbers of international migrants have more than doubled since 1960, and one occasionally reads of a “migration crisis.” Migration experts point out that the proportion of people living outside their country of origin today is really not much different from parts of the last century, or earlier eras when population movements peaked (Richter & Sherr 2008). Migration is the movement of people who are working or living in one place or another. By the beginning of the twenty-first century, international population movements evolved into five discernible migratory systems, each one characterized by a rough stability of migrant flows across time and space. In general, the flows of people within these systems parallel the flow of goods, capital and information that are partially structured by international politics (Douglas 2003). With the oil crisis in 1973–74, economic growth slowed and new labour inflows fell sharply. The 1974 SOPEMI report mainly took stock of problems on the horizon. It noted, prophetically, that should the crisis settle into one of a long duration, relations between national and foreign workers were likely to deteriorate and tensions between them would grow. In some cases, there was an awareness that the geography of migration was shifting, with increasing movement from physically and culturally distant countries, especially in Asia (Garson & Salt 2011).

Recent statistics show that international migration is increasing in all world regions. While the percentage of international migrants in the world’s population remains roughly constant at between 2–3%, the world’s population continues to grow and will do so for several decades into the future, before peaking at about nine billion. Most future growth will occur in Africa and Asia. Nevertheless, the growth of international migration is not inexorable, and will significantly reduce some refugee populations (Mark 2008).

Most people move in search of better opportunities, hoping to combine their own talents with resources available in the destination country so as to benefit themselves and their immediate family, who often accompany or follow them. The second reason could attract circumstances and factors such as more health facilities, better education, more income and better housing in the migration destination (Mosselson 2011). However, migration, especially youths moving from their areas of origin, is a major feature of global population change. It tends to be the cause of tensions, at least for those who migrate (Swinnen & Selten 2007), and as such is an identity crisis.

### **3. Why do Kurdish people Choose to Migrate?**

Kurds are the fourth largest ethnic group in the Middle East (Alynn & Emek 2001). Within each state, the Kurdish minority has faced considerable oppression. Kurds reside in at least six countries (Iran, Iraq, Syria and Turkey). Their case is intriguing, and the discontent of certain segments of these separatist movements has splashed into the political pools of other states where Kurds do not constitute a sizeable minority. Many Kurds have not been able to express their “Kurdishness” in their traditional homelands, and this presents a challenge for the conventional understanding of ethnicity (Alynn & Emek 2001). Many groups that are disseised due to the political climate in their home state can opt to migrate to other countries, especially if they find that they cannot find viable avenues for dissent.

A world cleanly divided into nation states does not correspond to the contemporary reality of political identity and territory. Many ethnic groups straddle borders and reside within several countries. The Kurds are but one example of this and the tensions that emerge with multi-state ethnicities. The Kurds have also established enclaves in states outside their Kurdish homelands. Interestingly, the struggle for statehood has recently moved into the countries of the European Union (EU) (Alynn & Emek 2001).

The problem of Kurdish refugees and displacement occurred over the twentieth century in the Middle East, and continues to loom today. Displacements of Kurds had already been happening within the Ottoman Empire on the pretext of suppression of local rebellions over the period of its domination of the northern Fertile Crescent and the adjacent areas of Zagros and Taurus. In the early twentieth century, massive displacements were forced on the Christian minorities of the Ottoman Empire (especially during the First World War and the Turkish War of Independence), but many of the Kurds also suffered a similar attitude as some of their tribal confederations co-operated with the Ottomans, while others opposed it and revolted in several areas. The situation for Kurds in the newborn nation of Turkey turned disastrous over the 1920s and 1930s, when large-scale Kurdish rebellions resulted in massive massacres and the expulsion of hundreds of thousands of people. Since the 1970s, renewed violence of the Kurdish-Turkish conflict created about three million displaced people, many of whom remain unsettled (see the Wikipedia entry on Kurdish refugees).

Conflicts such as the Iran-Iraq war of 1980 to 1986, the 1991 Gulf War, guerrilla campaigns by Kurds against central governments, and the attempted genocide of Iraqi Kurds by the Saddam Hussein regime have

long wracked Kurdish populations and provided an impetus for many to relocate as “forced” migrants (King 2006). The control of Kurdistan has been contested by non-Kurdish political powers, most notably the Ottomans and Persians prior to the First World War, and since then by Turkish, Iranian and Arab governments. Kurds have to a lesser extent also suffered from intra-Kurdish conflict among tribes, political parties and other groups.

The Kurds fled a failed revolution in Iraqi Kurdistan. The revolutionary attempt began in 1961, although the Kurdish rebellion, initially supported by the United States and the Iranian regime, began in March 1974. However, when Saddam Hussein entered into an agreement with the Shah of Iran at the expense of the Kurdish rebels, foreign support came to an abrupt end and the Kurdish population was left vulnerable to the vengeance of the Iraqi regime. Consequently, hundreds of thousands of Kurdish people sought exile in the neighbouring countries. A number of Kurds from Iraqi Kurdistan continued to arrive in the years that followed, though the greater part of the second wave that came in 1979 were Kurds from Iranian Kurdistan. These Kurds escaped because of their opposition to the theocratic system that would follow the Iranian revolution that, under the auspice of Ayatollah Khomeini, endeavoured to overthrow the Shah and replace his government with an Islamic Republic.

The third wave took place between 1991 and 1992 and is assumed to be the largest of the four. This included Kurds who desperately fled the genocidal campaign, known as *Anfal*, imposed by the dictator Saddam Hussein in the late 1980s. The intention of this campaign was the calculated extermination of the Kurdish people by the Ba’athist regime under Saddam Hussein. The regime destroyed over four thousand Kurdish villages and killed an estimated 182,000 Kurds (Karimi 2010).

At the end of the 1960s, the Syrian government decided to create an “Arab belt”—a 280 km long and 10–15 km wide band of arable, well-cultivated land along the Turkish border. The plan anticipated the deportation of 140,000 Kurds living in 332 villages situated inside this band who were supposed to be replaced by Arabs. However, the plan was not realized until 1975 where around four thousand Arab families of the Walda tribe were moved to forty-one model farms in Jazira as well as to fifteen model farms north of ar-Raqqa. The Arabization campaign of Jazira was halted by Hafiz al-Asad in 1976, but the status quo remained unchanged (Jordi 2009).

In 1962, the government carried out a special census in the al-Hasakeh province in northeast Syria (Lowe 2006). Kurds had to prove that they had lived in Syria since at least 1945 or lose their citizenship. The government

conducted the census in one day, and around 120,000 Kurds lost their citizenship and became stateless. The number of stateless Kurds in Syria has grown since to reach an estimated three hundred thousand today, because the children of stateless people are themselves considered stateless (Human Rights Issues Concerning Kurds in Syria 2010).

However, Kurds of all persuasions, from soldiers who did not want to kill their own countrymen to those seeking to escape violence, have found refuge across the border in other countries. Most had to be smuggled across over, avoiding the boundary security forces, after facing what they said was discrimination and oppression in Kurdistan (Al Arabiya news 2012). In addition, many groups that are disseised with the political climate in their home state can opt to migrate to other countries, especially if they find that they cannot find viable avenues for dissent in their homelands.

The reports show that Kurdish migration is still increasing. Greater numbers of asylum-seekers were reported in the second half of 1997 and at the beginning of 1998 notably in the following countries: Denmark, France, Germany, the Netherlands, Sweden, Switzerland and the United Kingdom (Mrs Ruth-Gaby and Vermot-Mangold, Switzerland 1998).

#### **4. The Migration of Young Kurdish People**

It is estimated that 214 million people, or 3% of the world's population, live outside their country of origin. There are some thirty-three million migrants under the age of twenty, which represents around 16% of the total migratory population (United Nations database 2011). As a consequence of the increase of immigration in numerous industrialized societies during recent decades, the number of children who are brought up in immigrant families has progressively risen and the educational attainment of immigrant children and children of immigrants has become an important issue of psychology of migration. Immigrant youth may experience ongoing mental health issues due to relocation and potential atrocities experienced in their home country, as well as adaptation issues with school and peer groups in the host country. Like their parents, immigrant children may lack a larger social support network of family and friends that was present in their country of origin (DuPlessis & Cora-Bramble 2005). The youth of different cultures who are forced to deal with each other, forced to live on the margins of the host society or after spending many years in exile, drawing distance from the same practices ancestors and rejecting the foreign country customs, have suffered certain kinds of cultural duality.

Youth make up a disproportionate share of the world's migrants, with about a third of the migrant flow from all developing countries in the age range of twelve to twenty-four (World Bank 2006).

However, the migration's management has received considerable attention in recent years, with the question of the opportunities to capitalize on migration with a special focus on child and youth roles, at least in the Kurdish context, often neglected. But since children and youth are very important for the future of both receiving and sending countries, their well-being, mental health and social opportunities are important.

Typically, children and young affected by migration are among groups that are most vulnerable to risks resulting from movement. Children are affected by migration in a number of ways, such as when they migrate with their families, or when they are left in their home communities to be cared for by someone else when one or the other parent migrates, or when both parents do (UNICEF Office for Barbados and Eastern Caribbean Caroline Bakker 2009).

Considering Kurdish youth, there are several identities that simultaneously link them to two countries. They feel an emotional attachment and belonging to their Kurdish families in Kurdistan and promote their ties to their parents' country of origin as a way to express these connections. As a group, Kurdish youth immigrants have assimilated their perception of Danish life. At the same time, they have maintained a Kurdish identity formed by a diaspora consciousness of Kurdish traditions or of Kurdishness.

## **5. Erik Erikson's Theory of Identity Development**

The emergence of personal identity is an important developmental task of adolescence and one in which the aspects of psychosocial development discussed earlier play a key role (Kroger 2007). As documented in many empirical tests of Erikson's (1968) theory of the adolescent identity crisis, the process of identity formation includes considerable exploration and experimentation over the course of adolescence (Steinberg 2002). Although identity crisis may occur in middle adolescence, its resolution, with the coherent integration of the various retained elements of identity into a developed self, does not occur until late adolescence or early adulthood (Waterman 1982).

Other issues that tend to renew identity concerns are: one's first job, marriage, parenthood, the death of one's parents, divorce, unemployment, serious illness, widowhood and retirement (James 1996). The ability to cope with these later identity issues that result from major changes in one's

role in life may well depend on the degree of success with which one has mastered the adolescent identity crisis:

Erikson has recognized that identity formation consists of two distinct components. He refers to these as ego-identity and as self-identity. Ego-identity refers to commitments to such things as work, and ideological values associated with politics, religion, a philosophy of living, and so forth. Self-identity theory can be illustrated from the most contemporary and visible theorist of identity formation.

(Gerald, 1998)

Identity essentially means how a person sees themselves in relation to their world, a sense of self or individuality in the context of life and what lies ahead. Unlike many other developmental theorists of his era, Erikson's psychosocial theory of human development covers the entire lifespan, including adulthood (see Table 6.1). Erikson used the term "crisis" to describe a series of internal conflicts linked to developmental stages. According to Erikson's theory, the way a person resolves the crisis will determine their personal identity and future development (Oswalt 1995–2012). Young people struggle to belong, to be accepted and affirmed, and yet also to become individuals (Gregg 2006). In itself, this is a big dilemma, aside from all the other distractions and confusions experienced at this life stage.

**Table 6.1 Psychosocial Crisis Stage Life Stage age range, other descriptions**

Stage (age)	Psychosocial crisis	Significant relations	Psychosocial modalities	Psychosocial virtues	Mal adaptations & malignancies
I (0-1) infant	trust vs mistrust	mother	to get to give in return	hope, faith	sensory distortion—withdrawal
II (2-3) toddler	autonomy vs shame and doubt	parents	to hold on, to let go	will, determination	impulsivity—compulsion
III (3-6) pre-schooler	initiative vs guilt	family	to go after, to play	purpose, courage	ruthlessness—inhibition
IV (7-12 or so) school-age child	industry vs inferiority	neighbourhood and school	to complete, to make things together	competence	narrow virtuosity—inertia
V (12-18 or so) adolescence	ego-identity vs role-confusion	peer groups, role models	to be oneself, to share oneself	fidelity, loyalty	fanaticism—reputation
VI (the 20s) young adult	intimacy vs isolation	partners, friends	to lose and find oneself in a another	love	promiscuity—exclusivity
VII (late 20s to 50s) middle adult	generativity vs self-absorption	household, workmates	to make be, to take care of	care	overextension—rejection
VIII (50s and beyond)—old adult	integrity vs despair	mankind or "my kind"	to be, through having been, to face not being	wisdom	presumption—despair

Source: adapted from Erikson's 1959 *Identity and the Life Cycle* (Psychological Issues vol 1, #1)<sup>1</sup>

<sup>1</sup> Natalie B. Phelps, *Psychology* 132, M.S. Ed. NCC, Chapter Four.

Adolescence has been characterized by Erikson (1950) as the period in the human life cycle during which the individual must establish a sense of personal identity and avoid the dangers of role diffusion and identity confusion. Identity achievement implies that the individual assesses strengths and weaknesses and determines how he or she wants to deal with them. The adolescent must find an answer to the identity questions: "Where did I come from?" "Who am I?" "What do I want to become?" (Muus 2004). Identity, or a sense of sameness and continuity, must be searched for. Identity is not readily given to the individual by society, nor does it appear as a maturational phenomenon when the time comes, as do secondary sex characteristics. Identity must be acquired through sustained individual effort. The unwillingness to work actively on one's identity formation carries with it the danger of role diffusion, which may result in alienation and a sense of isolation and confusion. The search for an identity involves the establishment of a meaningful self-concept in which past, present and future are brought together to form a unified whole. Consequently, the task is more difficult in a historical period in which the anchorage of family and community tradition has been lost and the future is unpredictable (John 2010).

In addition, not every adolescent goes through an identity crisis but instead accepts the roles and values handed down by his or her parents. Some adolescents remain in a permanent state of crisis. Because there are more than two ways that people navigate their adolescent identity issues, researchers following Erikson's theory expanded his concept of the identity crisis (Whitbourne 2012).

Building upon Erik Erikson's work on identity formation, James Marcia (1966) developed the Identity Status model to describe four levels or statuses of identity formation as follows:

- Identity Diffusion is the least developmentally-advanced status, although like all of the statuses, it has adaptive aspects and may represent, for certain groups at certain times, a functional mode of being.
- Identity Foreclosure represents a high level of commitment following little or no exploration.
- Moratorium is arguably considered a stage, rather than a resolution of the process of identity formation, even though a few people may remain in identity moratorium over many years.
- Identity Achievement represents a self-constructed autonomous resolution to the task of identity formation (Marcia 1966; Patterson 1991).

## 6. Setting

“Statistical Overview—Population Statistics on Foreigners” is based on the most recent register data from Statistics Denmark available to the Ministry of Refugee, Immigration and Integration Affairs via the Immigration Database of the Ministry of Refugee, Immigration and Integration Affairs, managed by Statistics Denmark.

Estimating the numbers of Kurdish youth living in Denmark is extremely difficult for several reasons. First, countries differ by the extent to which they document migration. When data is collected this is not done in a standard way, and migration data is often not broken down by Kurdish nationality. Furthermore, the data does not allow comparison by sources. Second, a number of youth are living in the asylum centres, thus the statistics are not final or complete. Studies must thus rely on secondary data sources which have their own distinct limitations. Third, as shown in the Table 6.2 and Fig. 6.1, there is no exact statistics on Kurds who are living in Denmark, because these have not been registered to a country called Kurdistan and are classified as Iranian, Iraqi, Turkish and Syrian.

## 7. Factors that Influence Youth Migrant Identity

Migration is often associated with problems and challenges as everything is alien for the individual immigrants into the new society. Naturally, every individual has a value, and mass culture, ethnicity and individual values are naturally known to them. With regard to irregular migration, the Global Migration Group (GMG) has stated that “[a]lthough the number of migrants without proper legal status in transit or host countries is unknown, they are estimated to be in the tens of millions worldwide. Within this context, millions of children are likely to face severe human rights violations and deprivations due to their migration status or that of their parents” (Committee on the Rights of the Child 2012).

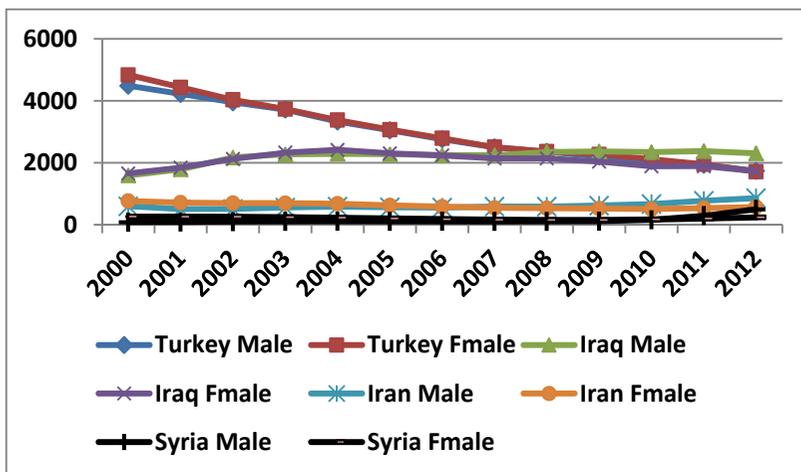
There are some physical and mental illnesses that are unique to particular cultures and are influenced directly by cultural belief systems and other cultural factors. In 1994, the DSM (Diagnostic and Statistical Manual of the American Psychiatric Association) added culture-bound syndromes (i.e. troubling patterns of behaviour/experience that may not fall into one of the traditional Western DSM diagnostic categories) (Vaughn, Jacquez & Baker, 2009). Multiple factors associated with migration can affect Kurdish youth migrants, either positively or negatively.

Table 6.2 Immigrant population by citizenship (country of origin) and sex in (2000-2012)

Country/ Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Turkey	Male	3,952	3,716	3,331	3,048	2,756	2,499	2,351	2,201	2,055	1,934
	Female	4,032	3,733	3,377	3,067	2,791	2,504	2,362	2,268	2,115	1,953
Iraq	Male	2,170	2,269	2,286	2,272	2,242	2,240	2,349	2,364	2,341	2,374
	Female	2,123	2,329	2,413	2,304	2,234	2,142	2,142	2,036	1,887	1,888
Iran	Male	507	553	583	561	552	585	583	616	664	771
	Female	695	694	676	622	579	544	531	519	502	534
Syria	Male	93	107	111	106	108	105	104	111	157	292
	Female	258	238	226	200	174	158	150	153	169	198
Total	14,268	13,639	12,963	11,406	10,777	10,572	10,268	9,890	9,944	9,629	

Source: StatBank Denmark (2012)

Fig. 6.1. Immigrant population by citizenship (country of origin) and sex in (2000–2012)



Source: StatBank Denmark (2012)

There are some challenges that a migrant faces during migration, such as modern societies and how the migrant matches with the new environment that is alien from their original. Everything is different in the new country, for example: etiquette of eating and how to approach school, work, friendships, celebrations and recreation opportunities, responsibilities and rights. The most important challenges are classified as vulnerability, introversion and depression, loneliness, cultural shock, family structure, and increased violence among families, and second generation immigrants. These are further explained in the following.

### 7.1 Vulnerability of migrants in the country of asylum

Vulnerability begins with the fact that the migrant has crossed an international border, and are not citizens of the country in which they live. Unlike citizens, they may generally enter and live in another country only with the express consent of its authorities. Cultural, social, political and legal factors contribute to the degree of vulnerability among migrant populations (Kahf 2009). Factors most often mentioned are language problems, marginalisation and social exclusion, and legal obstacles (Bröring 2009). Originating from racist colonial structures, racialization assigns negative identification to dark skin, a big nose, and ringed dark hair, whereas white skin, bright eyes and fine features are marked with positive identification as being pure and perfect (Mostofi 2003).

Like many other immigrant groups, the Kurdish minority have forged an identity incorporating elements from both their ethnic traditions and the new Danish mainstream civic society which they separate into private and the public spheres. A child may experience identity conflict, a division of personality resulting from the contemporary membership in groups that have different or even contradictory goals and interests, but request identification, loyalty and involvement from their members (Seweryn 2007).

### **7.2 Introversion and depression**

Depression is in fact an adaptation, a state of mind which brings real costs, but also brings real benefits (Andrews & Thomson 2009). During the migration and resettlement process, migrants realize the gap between their culture and values with those of the new host society. Pressures, particularly the inability to integrate into the "culture majority" (Ameli, Faridi, Lindahl & Merali 2006), can cause impotence, humiliation and frustration, and may lead to stress, mental disorders, desire to return to the country of origin, a sense of uncertainty and waiting, anonymity and interpersonal tensions and imbalances.

Conversely, because of this rejection, immigrants will seek ways—religious, militant, or social—to express their frustration and assert their identity. Such scenarios not only represent a threat to public safety, but also provoke negative attitudes towards migrant communities which act as obstacles and blockades in the way of integration and social cohesion (Richter & Sherr 2008).

### **7.3 Loneliness**

Cultural differences in loneliness levels have been observed (Cacioppo & Hawkley 2012). Migration can significantly affect migrants' social support network, and can lead to loneliness and social isolation because of a lack of significant relationship with the Kurdish community, wherein even close friends and family can be disassociated from them. Migrants often feel lonely in their new locations, a situation that is heightened when they are ill or when a life transition takes place, such as giving birth (Silva & Dawson 2004). For some migrants, this can be substantially softened if they settle in an area with an established community of people from their cultural background, being a group sharing several important and common ties. Not only do they speak closely related languages, but they also share a common culture, geographical homeland, and sense of identity.

### **7.4 Culture shock**

Culture shock is primarily a set of emotional reactions to the loss of perceptual reinforcements from one's own culture, to new cultural stimuli which have little or no meaning, and to the misunderstanding of new and diverse experiences (ZAPF 1991). Humans are afraid of variation and repetition in normal daily life. The difficulty in learning new languages, acquiring new skills and the fear of failure are causes for young immigrants to take refuge in their own customs and habits, also due to the lack of common cultural aspects from the host community. In the new country they will become friends with their countrymen and only communicate with them, listen to radios on his own language, and make a small country within the host country with the customs they have brought with. Some are forced to return home prematurely, and others remain but fail to perform to the best of their potential (Juffer 1985). They continue to choose actions consistent with it, and to interpret their own and their host's actions in terms of it (ZAPF 1991). Culture shock can be understood as a challenge to identity or as a transformation of how an individual views him or herself (Tohyama 2008).

### **7.5 Family structure**

It is obvious that problems facing children growing up in immigrant families are different to crises specific to childhood in the more normal environment of the home country. The most frequently acknowledged difference between cultures is that of family structure, and throughout the world people have organised themselves into an amazing variety of these. The family structure and the experience of migration itself have a profound effect on the degree of control parents have over their teenage children (Mary 1994). Cultural negotiations within the family demonstrate the ability of the actors to make use of different levels of interpretation allows for the negotiation of compromises satisfying to all (Streiff-Fénart 1999), for instance most of the Kurdish youth migrants use Danish significantly more often with their parents and siblings than their ethnic language.

### **7.6 Second generation identity**

There are now second and third generations of Kurds living in Denmark. The second generation came out from the country in its infancy and only a few things remain in their memories about their homeland. But some of

the second generation and all the third and fourth generation born abroad have grown up and been educated in Denmark, and in some cases have even been married. The majority of this group are married to non-Kurdish nationalities, and the fourth generation as a "hybrid" are not oriented towards marrying Kurdish nationals. Therefore, most of the latter do not speak Kurdish because they spent their childhood in kindergarten in Denmark, and speak Danish with pedagogues and other children.

This generation faces other types of problems, like their names and surnames as some of them have both Danish and Kurdish names. Because of the difficulty with the pronunciation of the Kurdish names, they are often abbreviated, or a Danish name is taken.

Findings on identity formation among members of the visible minority second generation are limited (Reitz & Somerville 2004). Due to their connections to both the Kurdish and Danish, these youths share unique experiences as the children of immigrants in Denmark. Their identities cannot be specified based on existing identity categories, such as Kurdish, Asian or Danish, among others, so they feel an increased need to manage their identities and the processes through which they express these identities.

## **8. Types of Migrant Youth Adjustment to Reduce Identity Crisis**

Migration problems and identity crisis among Kurdish youths is one of the important issues which should be intensively focused on. The youths' inability to explain their identity can often produce intense crises for them, in many cases leading to unhealthy behaviours and resulting in undesirable outcomes, from the family and social points of view. Therefore, in this study the objective is to investigate the immigrant youths' behaviour and to analyse Kurdish migrant history and the factors that are effecting migrant identities. This will help us to identify some factors sourcing identity crisis among the Kurdish youth and attempts will be made to find optimal solutions to tackle these issues to reduce their negative effects through different preventive measures.

One of the simplest methods to reduce the pressure from internal and external conflicts that some immigrant youths turn to is the complete removal of one of the cultural models and the creation of another. Sometimes, this is combined with denigration of one of the cultures. To examine this issue further we divide it into three parts as follows.

The first is how the life pattern is based on a person's culture and how it shapes their character and defines their identity through the feeling that

only Kurds understand the value of life. The thinking is that they will one day find a Kurdistan situation they like, and so there will be no reason for them to continue living in Denmark.

Youth relations with Kurds and Kurdish culture are more emotional. They remember their love for their family, and seek to know them as a Kurd. However, the reason for being in Denmark is to seek further social values, for example a sense of freedom in having an "emotional experience" and "not to talk to the people behind them." Even if they are critical of Kurdish culture, this is raised indirectly in Danish society, and this could be because of guilt at having anything bad to say about Kurdish culture, and there is also some guilt about being Danish. Youth try to evade this responsibility, asserting that: "Despite my desire, Danish society affects me, but I do not agree with it." To be Kurdish is to be more sentimental about certain aspects for the youths, and for the love and education that their parents have given them, they try to maintain their Kurdish traditions.

The second aspect is the exploitation of values of the Kurdish and Danish cultures based on their needs. They change their behaviour from one culture to another, but this is only to keep up appearances rather than to make the value intrinsic. In this regard, youth try to be acceptable in both Kurdish and Danish communities and cultures. However, this behaviour can be conscious or unconscious. This youths feel that they are Danish when in Denmark, but Kurdish when travelling to Kurdistan. This may become problematic if the youths do not become aware of their true beliefs.

Most children have resolved the cultural issue, with all its contrasts. From the perspective of social psychology, this method is regarded as one of the safest strategies of identity and is called the "third culture." The third culture is defined by a combination of the two cultures, meaning that while the youth try to be like the host culture, at the same time they hold both of their differences in terms of identity. Distinguishing between Third Culture Youth and those who only belong to their culture and Kurdish culture is their ideal, and is significant. Belonging simultaneously to both Kurdish and Danish culture are aspects that they have added to their Canadian friends. For example, mastering another language or celebrating the New Year twice. Belonging to two cultures allows them to have different cultural groups that are closely related.

The third technique involves youth inventing models in which they will fit the values of the two cultures. They try to minimize conflicts between the two cultures and at same time keeps points from two cultures and set aside their cumbersome obligations and funds. Most youths are

involved in this procedure. Depending on the situation they have and which benefits they receive, they feel they are either Kurdish or Danish. Youth use this aspect to reduce anxiety arising from identity crises, so they remove any resemblance to the parent culture and attempts to convert to the dominant culture model, by change their name or aspects of their appearance etc.

This may be associated with humiliation for their. For example, this could be realised by not wanting to talk in the mother tongue, dislike of appearing in public using their own languages, or denial or concealment of their lineage. This technique brings about anxiety for many youths, such as fear of losing support from their peer group, fear of harm to the family or the feeling of betraying themselves.

Family factors can be effective in this respect, and there are many parents who have a relative flexible grasp of the dominant culture. This flexibility is not associated with humiliation or alienation from their own culture. This parent's flexibility is one of the reasons allowing the youths to belong to two cultures easier, because they are not forced to choose one or the other, and are sometimes able to reconcile the two.

## **9. Summary and Conclusion**

Migration is influenced by several "push" and "pull" factors, individually or jointly. The push factors encourage people to leave an area. For many young people all over the world, spending time abroad is considered a normal part of life experience and migration marks the transition to adulthood. Scarcity of resources, underdevelopment, economic necessity and finally and most importantly violent conflicts in Iran, Iraq, Turkey and Syria have forced Kurdish people to leave their homeland. This chapter has made an attempt to incorporate two strands of immigration literature and identity crisis studies to better understand diaspora mobilization in this globalised world.

Kurds are the fourth largest ethnic group in the Middle East. Within each state, the Kurdish minority has faced considerable oppression. Kurds reside in at least six countries (Iran, Iraq, Syria, Armenia, Azerbaijan and Turkey). Their case is intriguing as the discontent of certain segments of these separatist movements has splashed into the political pools of other states where Kurds do not constitute a sizeable minority. Many Kurds have not been able to express their "Kurdishness" in any of their traditional homelands.

Migration experiences can contribute to depression. For example, Kurdish migrants in Denmark have noted their feeling depressed, which

they attribute to homesickness, loneliness, lack of family support, lack of cohesiveness among Kurdish in Denmark, and a sense of not belonging in Denmark. Some of them, for security reasons, do not trust other migrants in Denmark and have avoided integration in the Kurdish community.

Adolescence is the most complex and the most sensitive stage of human development, and in the lives of young individuals, as characterized by developmental changes and evolution in the maturity of the body, are affected by internal psychological requirements as well as adaptation to their culture or the environment.

This chapter discusses factors that influence migrants' identity, including vulnerability, introversion and depression, loneliness, culture shock, the influence of families and increased violence among families and second generation immigrants. It focuses on identity crises and questions pertaining to livelihood possibilities and the preservation of a distinct Kurdish identity in a context of increasingly numerous interactions with Danish society.

In addition, not every adolescent goes through an identity crisis at all, but instead accepts the roles and values handed down by their parents. Some adolescents remain in a permanent state of crisis.

There are several types of migrant youth adjustment to the new culture that reduce identity crisis. To examine this issue further, it was divided into three parts: (i) the life pattern based on a person's culture and shaping of character; (ii) values of the two Kurdish and Danish cultures based on needs, and; (iii) youths' invention of models in which they fit the values of the two cultures.

There are big differences between Kurdish youths living in their homeland and who living abroad, because these youths have no support from within their country and in their migration to another. Therefore, the management of culture for the Kurdish youth abroad is important to achieve their goals.

Language is one component of identity; it preserves native character which is necessary in societies like Denmark, and its preservation and native language instruction for children and youth, who grow in these lands, must be observed. The interests of indigenous culture must be included in the context of art and music, because youths who live in a safe and quiet country like Denmark see no reason to have concerns similar to their parents.

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## CHAPTER SEVEN

# THE KURDISH DIASPORA: A NEW SUBJECT FORMATION IN TRANSNATIONAL SPACE

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### **Abstract**

In recent decades, a Kurdish diaspora has begun to appear and its emergence has influenced the nature of the Kurdish question, which until then had been a conflict mainly involving the Kurds and the states of the Middle East. Subsequently, Kurdish communities have become very active in the diaspora, imposing themselves on the political agendas of most European countries. This change was most dramatic when the Kurds in Iraq began to develop self-government in 1991, constitutionally recognized after the fall of Saddam Hussein regime. Iraqi Kurdistan turned out to be a centre of attraction for the Kurds who were living in the diaspora and in Turkey, Iran and Syria. The relationship between the diaspora and the homeland is addressed in this chapter in the context of such changes. The aim is to study how the ongoing nation-building process in Iraqi Kurdistan affects the Kurdish diaspora. It explores how the enduring Kurdish struggle for nationhood and the relatively new transnational space of the Kurdish diaspora can interact and how changes take place in both spaces. It is argued that the Kurdish diaspora has responded to the developments in the homeland through different forms of diaspora circulation, rather than returning to the homeland, as was supposed in previous studies. More importantly, people in the diaspora develop a distinct identity in a very general sense. Briefly, this identity

refers to a duality between homeland and diaspora, a sense of belonging to both. This chapter is based on the results of qualitative research conducted among the “elites” of the Kurdish diaspora in Sweden, the UK, the Netherlands and Belgium in 2008.

**Key Words:** Kurdish diaspora, myth of return, diasporic identity

## 1. Introduction

*Kurdistanê Azad Çebû* [“A free Kurdistan is born”]

The Kurds in different countries of the Middle East and the diaspora have used the above popular motto to express the developments in the Kurdish region of Iraq since the collapse of Saddam Hussein’s regime. What it implies is the realization of a historical dream of the Kurds which can be summarized as the quest for their own state. This chapter aims to explore the impact of these developments taking place in Iraqi Kurdistan on the Kurdish diaspora in terms of identity formation. What is the importance of the emergence of Iraqi Kurdistan as a self-governing body to the Kurdish diaspora? And how did the Kurdish Diaspora react to these developments in Iraqi Kurdistan? These are the main questions I tried to answer in this chapter, which is based on my master’s thesis.

In general, the nation-building process of the Kurds is related to those in Turkey, Iraq, Iran and Syria, the countries governing the Kurds in the Middle East, which have given rise to different forms of exclusion of the Kurds within them.<sup>1</sup> This exclusion embodies a very wide range of policies towards the Kurds, from the genocidal poison gas attack of Saddam Hussein in 1988 in Iraq, to the denial of the Kurds as a distinct ethnicity, as in modern Turkey. One of the most important results of this exclusion has been the migration movements of the Kurds leading to the formation of a Kurdish diaspora. Therefore, the formation of a Kurdish diaspora has, from its beginning, been intertwined with the nationhood process of Kurds and nation-building in their so-called “host” states. In other words, the Kurdish Diaspora is based on strong ethno-national ties and has also been very active and politicized since its inception.

In this sense, the relationship between diaspora and homeland is a very common focal point for studies on the Kurdish diaspora, although this was

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<sup>1</sup> M. Van Bruinessen, “Shifting National and Ethnic Identities: The Kurds in Turkey and the European Diaspora,” *Journal of Muslim Minority Affairs* 18 (1) (1998): 39–53.

studied from different perspectives.<sup>2</sup> In these studies, two arguments concerning the relationship between diaspora and homeland have come to the forefront: “Almost all Kurdish refugees wish to return to Kurdistan when conditions are appropriate,”<sup>3</sup> and “the concept of homeland for the members of diaspora is vague and ambivalent, since Kurdistan does not exist as a juridical- political reality.”<sup>4</sup>

This chapter aims to advance these two arguments, assuming that the conditions are now appropriate given the concept of the homeland has become concrete through the self-governing experience in the Kurdish region of Iraq, which has become a *de facto* Kurdish state. In another chapter, I tried to discuss the general impacts of this *de facto* statehood on the Kurdish diaspora, and argued that instead of a returning diaspora, we are witnessing alternative forms of diaspora circulation.<sup>5</sup> In this chapter, I will trace the impact of Iraqi Kurdistan on the Kurdish diaspora in terms of identity formation. How do the members of the Kurdish Diaspora identify themselves? Does the Kurdish Diaspora formulate a more inclusive and cohesive discourse of the diasporic identity instead of the “home-oriented” nationalist discourse based on victimhood? And what do they think about the perception of their identity in the homeland (in this case, Iraqi Kurdistan)?

These questions are discussed from the perspectives of the people who are involved in the Kurdish diaspora. Qualitative research through semi-structured in-depth interviews was conducted with those people who can

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<sup>2</sup> O. Wahlbeck, *Kurdish Diasporas: A Comparative Study of Kurdish Refugee Communities*, Macmillan Press, London, 1999; D. E. King, *When Worlds Collide: The Kurdish Diaspora from the Inside Out*, Washington State University, Washington, 2000; D. J. Griffiths, *Somali and Kurdish Refugees in London: New Identities in the Diaspora*, Research in Migration and Ethnic Relations Series, Ashgate, Burlington, 2002; E. Østergaard-Nielsen, *Transnational Politics: Turks and Kurds in Germany*, Routledge, London, 2003; M. Alinia, *Spaces of Diaspora: Kurdish Identities, Experiences of Otherness and Politics of Belonging*, Goteborg University, Goteborg, 2004; A. C. Emanuelsson, *Diaspora Global Politics: Kurdish Transnational Networks and Accommodation of Nationalism*, Goteborg University, Goteborg, 2005; K. Khayati, *From Victim Diaspora to Transborder Citizenship? Diaspora Formation and Transnational Relations among Kurds in France and Sweden*, Studies In Arts And Science, No. 435, Linköping University, Linköping 2008.

<sup>3</sup> Wahlbeck, 106.

<sup>4</sup> Alinia, 232.

<sup>5</sup> A. H. Akkaya, “Kurdish Diaspora: Creating New Contingencies in Transnational Space,” in *Identities in Transition*, G.Tsolidis (ed.), 57–66. Inter-Disciplinary Press, Oxfordshire, 2012.

be considered as the “elites” of the Kurdish diaspora.<sup>6</sup> The present analysis draws on seventeen life stories which refer to the themes of the relationship between diaspora and homeland, and the formation of a diasporic identity. My sample is composed of people from different parts of Kurdistan who now live in Sweden, the Netherlands, Belgium and the UK. They all have strong connections to Iraqi Kurdistan, therefore all references made to the “homeland” are to Iraqi Kurdistan. All interviewees can be considered as the elite of Kurdish diaspora in the sense that they have been (and are) politicians, academicians, NGO representatives etc. This is important because, as stated: “Diasporas are social constructs that are constructed by the political entrepreneurs who are acting rationally and strategically through the strategic deployment of identity frames and categories.”<sup>7</sup>

This chapter is composed of four parts. First, I trace the evolution of the Kurdish diaspora as the result of population movements from different parts of Kurdistan. In the second part, I take a closer look at the structure of this diaspora. In the third part, the formation of diasporic identity based on the creation of Kurdish transnational space is discussed. Finally, in the fourth part, this new diasporic identity is discussed in terms of the contingencies it creates for a new relationship between the diaspora and homeland.

## 2. The Formation of Kurdish Diaspora

Before talking about the formation of the Kurdish diaspora, it should first be noted that the population movements from different parts of Kurdistan, namely Kurds in Turkey, Iraq, Iran and Syria, differ from each other significantly. Secondly, there are also significant socio-cultural and political differences among the Kurdish communities from these parts. And lastly, in terms of the policies of the “host countries” toward migrants, we can also talk about considerable differences. In this sense, instead of the one diaspora, it is much more realistic to talk about Kurdish diasporas, as suggested by the title of one of the pioneering studies made on this subject.<sup>8</sup>

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<sup>6</sup> A. H. Akkaya, *The Impact of the Nation-Building Process in Iraqi Kurdistan on Kurdish Diaspora*, Master’s Thesis, Ghent University, Ghent, 2008.

<sup>7</sup> F. B. Adamson, “Constructing the Diaspora: Diaspora Identity Politics and Transnational Social Movements,” paper submitted at the 49<sup>th</sup> Annual Meeting of the International Studies Association, San Francisco, CA, March 26–29, 2008, 12.

<sup>8</sup> O. Wahlbeck, *Kurdish Diasporas*, 1999.

Concerning the Iraqi Kurds' population movements and the formation of a Kurdish diaspora, we can talk about four great migration waves since the 1970s which should be discussed in conjunction with the social and historical development of Iraqi Kurdistan. The first three occurred as a result of the ongoing struggle against the Iraqi state and had mainly a regional and temporal character. The first wave came in the second half of 1970s, just after the Algiers Agreement between Iraq and Iran following the defeat of the Kurdish uprising begun in 1961. It had a mainly regional character, and more than two hundred thousand Kurds crossed the border into Iran. However, during this period, a first international migration movement, at a small scale, had also taken place in a way, seeing many frustrated Kurdish politicians or fighters flee to European countries and settle there. The second migration wave came after the *Anfal* campaign<sup>9</sup> in the late 1980s. This also had a foremost regional character, but this time hundreds of thousands of Kurds crossed the border into Iran and Turkey where they had to stay in makeshift camps for a long time. The third wave occurred after the Kurdish uprising in Iraqi Kurdistan in April 1991, when almost 1.5 million Iraqi Kurds crossed the Turkish and Iranian borders. In all of these waves, different numbers of people have been able to migrate to Europe, and so the Kurdish diaspora continued to grow in size. However, the main Kurdish exodus to Europe from Iraqi Kurdistan took place in the 1990s, and can be considered as the fourth wave. This started mainly after 1993 due to the economic embargo imposed upon Iraqi Kurdistan and accelerated during the internal fighting among the Kurdish groups between 1994 and 1998. The composition and aims of this group of refugees are very different from the previous ones.

The migration movements of the Kurds from Turkey, Iran and Syria have followed their own ways. However, it can be generalized that the population movement had a "transnational" character after the 1960s, when the wave mainly comprising workers from Turkey towards West European countries began. Among them, the Kurds contributed a significant number, although in the beginning their Kurdishness was not explicitly stated. Transnational migration continued in 1970s and 1980s in the form of refugee movements following the oppressive policies of

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<sup>9</sup> The *al-Anfal* was a genocidal campaign against the Kurds in Iraq, led by the regime of Saddam Hussein in the final stages of the Iran-Iraq War. The campaign takes its name from Surat al-Anfal in the Qur'an, which was used as a code name by the former Iraqi Baathist regime for a series of systematic attacks against the Kurdish population of northern Iraq, conducted between 1986 and 1989 and culminating during February 23 to September 6, 1988; see HRW Report, 1993, *Genocide in Iraq*.

Turkish, Iraqi and Iranian states against the Kurds. In the same period, a very wide economic migration also took place.

As a result of these different waves of migration, the Kurdish diaspora(s), composing different Kurdish communities living in different Western countries, has emerged. Although no precise and reliable census of the Kurdish diaspora in Europe has been carried out, the most widely accepted estimates set their number at about 1.4 million in Western Europe and North America, nearly 85% of them from Turkey.<sup>10</sup> The number of Kurds from Iraq increased in the 1990s and now form the largest part of the Kurdish communities in Great Britain, the Netherlands, Sweden and the United States.<sup>11</sup>

This newly emerged diaspora, at the beginning, was mainly based on the “home-oriented” nationalist discourse which depicted itself as a victim diaspora.<sup>12</sup> The Kurdish popular narrative of exile considers the Kurds’ tragic and traumatic past a major driving force for them entering the diaspora and their practice of “long-distance nationalism,” which they maintain vis-à-vis their “land of origin.” In this sense, arguments such as “we are all Kurds” and “we do not belong here because here is not our country” have been very common among the Kurds in the diaspora, independent of their social or political affiliations.<sup>13</sup> One of the researchers, who is also a member of the Kurdish diaspora, summarizes it with these words:

The feeling of commitment and duty for the real or imagined homeland Kurdistan is extremely strong among the Kurds. Among the political refugees and other politically active migrants nearly everything is explained or legitimized by its degree of usefulness or harm to the homeland and the cause of establishing that homeland. Sometimes, extreme acts of sacrifice and denial for self and family are committed for the sake of the homeland.<sup>14</sup>

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<sup>10</sup> Russell-Johnston Report, “The Cultural Situation of the Kurds,” presented to the Council of Europe Parliamentary Assembly in July 7, 2006, in *Council of Europe*, <http://assembly.coe.int/Main.asp?link=/Documents/WorkingDocs/Doc06/EDOC11006.htm> (accessed at July 15, 2008).

<sup>11</sup> Emanuelsson, 85.

<sup>12</sup> R. Cohen, “Rethinking Babylon: Iconoclastic Conceptions of the Diasporic Experience,” *New Community* 21 (1) (1995): 5–18; R. Cohen, *Global Diasporas: An Introduction*, University College London Press, London, 1996.

<sup>13</sup> Khayeti 2008.

<sup>14</sup> O. Sheikmou, “Crystallisation of a New Diaspora: Migration and Political Culture among the Kurds in Europe.” Paper presented at the Conference On

However, the emergence of the de facto Kurdish state in Iraqi Kurdistan has led to important changes, including a change in the depiction of the Kurdish diaspora as a victim diaspora and the reconstruction of a new diasporic identity. Before going into the details of these changes I tried to find out how the respondents define the Kurds who live abroad, and thus, in a sense how they define themselves. It appears that this depiction is very closely related to their personal migration history and their position in the host country they now live in, as well as their relationship to their homeland which is, at least rhetorically, considered their “true land.”

### **3. The Victim Diaspora and the Myth of Return**

Most of the interviewees narrated their personal migration history and their position as a kind of “victim diaspora,” and their status as “guest,” at least at the beginning. One of the interviewees explained this as such: “When we first got here, everybody was thinking ‘we will stay for a limited period of time here.’ Many people thought of themselves as guests and many still think of themselves as guest.”

Having said this, the interviewees were generally using the term “diaspora” to define themselves. Through this usage they were mostly focusing on dispersion from their homeland of origin and the preservation of a distinctive identity vis-a-vis the host society. However, there were also some hesitations in using this term, which may have been due to the fact that they were still considering themselves guests. In this sense, it can be argued that the conception of the diaspora is developing, as one interviewee noted:

The Kurds are gradually becoming a diaspora. Maybe in the next twenty to thirty years, Kurds will have genuinely something called diaspora. They are becoming a diaspora in the sense that they are organizing abroad, joining the political parties of their host societies, establishing the lobbies, and they are accepting the fact that they will stay abroad. They are no longer immigrants or exiles that had their eyes on returning to their home.

In terms of the formation process of the Kurdish diaspora, all interviewees narrated their personal experiences as refugees on the basis of the critical events of the nation-building process in their homelands. They had mainly migrated in the refugee waves of the late 1970s and 1980s and had been

politically very active. Therefore, they had been very sensitive to the political developments in the homeland which led to the assumption of a returning diaspora, as noted by Safran: “when the conditions are appropriate, they or their descendants would (or should) eventually return to their ancestral homeland.”<sup>15</sup>

However, the figures did not bear this out.<sup>16</sup> Only a very limited number of the refugees, mostly from the political and cultural elite of the Kurdish diaspora, have returned to assume posts in the universities and the governmental offices. Some of the interviewees had gone to Iraqi Kurdistan to participate in some ongoing projects. In this sense, a returning diaspora is a kind of myth which was explicitly described by the interviewees: “It would be individual cases. As a group I do not expect them to go back for a simple reason—their living conditions here are much better. The most expected thing that will happen is that they will have a residency here and another there.”

Instead of a returning diaspora, as has been assumed by the previous studies on the Kurdish diaspora, alternative forms of diasporic circulation among the members of the Kurdish diaspora have developed. The development of the self-governing experience in Iraqi Kurdistan since 1991 has opened doors for more contact with the homeland. This process developed significantly after 2003—for example, the opportunity of direct flight between the diaspora and the homeland has accelerated transnational connections. As one interviewee noted: “Visiting Kurdistan has become a part of our everyday life. There are many families who stay there for six months and here for six months.”

Mobility between the diaspora and the homeland took also other forms, including the movement of people, knowledge and capital. The interviewees seem very confident about their roles as actors in this process. They mainly consider the diaspora as representing human capital and the homeland physical capital, especially economic capital. This became very obvious when they talked enthusiastically about the various projects they had developed. They saw this period as a construction process and the “making of the project” as the most popular way of communicating with the homeland. Another interesting finding regarding the relationship between the diaspora and the homeland is the changing mentality of the political forces in Iraqi Kurdistan towards diasporic Kurds. As one interviewee stated: “Until the 1990s, the political forces in Iraqi Kurdistan saw diasporic Kurds as lost. During the 1990s there was a

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<sup>15</sup> W. Safran, “Diaspora in Modern Societies: Myths of Homeland and Return,” *Diaspora* 1 (1) (1991): 83–99.

<sup>16</sup> Akkaya 2012.

significant change in their attitude. They came to look at diasporic Kurds as a national resource to be used and to accounted for.”

However, this increasing contact between the diaspora and the homeland can also create tensions due to changing expectations. In general, the leadership in Iraqi Kurdistan expects the Kurds in the diaspora to help with the building of the country and lobby for it. On the other hand, members of the Kurdish diaspora criticize the Kurdish authorities for having expectations but no clear policy towards the diaspora. The members of the diaspora also consider themselves as more “modern” and “developed” than those Kurds with political power. Some respondents, for example, talked about how the discourse of democracy is stronger in the diaspora than in Iraqi Kurdistan. This has the possibility of leading to a divergence in the relationship between the diaspora and the homeland.

However, the more important change in terms of the relationship between the diaspora and the homeland can be observed in the formation of a new identity. To investigate this relationship, I asked the respondents how they, as member of the diaspora, identify themselves and how they are perceived in the homeland, and I tried to understand how diasporic identity which is “far-from fixed or pre-given, is constituted in the everyday stories we tell ourselves individually and collectively.”<sup>17</sup>

#### 4. The Diaspora and Identity

Kurdish national identity has been denied and suppressed by the states which govern Kurdistan. In this sense, the emergence of the diaspora had an explicit impact on the ethno-national identity of the Kurdish immigrants in a way that they had the chance to rediscover or recreate their Kurdishness. As noted by one interviewee: “When I came to Sweden, I just realized that I have no need to be Iranian since I was no longer under the oppression of the Iranian regime. I discovered my Kurdishness here.”

On the other hand, modern Kurdish identity, which has largely developed as a reaction to cultural and political domination by the Turks, Persians and Arabs, has a very fragmented character based on its internal as well as transnational structure.<sup>18</sup> Another important impact of the diaspora on identity is related to its unifying capability towards the

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<sup>17</sup> A. Brah, *Cartographies of Diaspora: Contesting Identities*, Taylor & Francis e-Library, New York, 2005.

<sup>18</sup> A. Vali, “The Kurds and Their Others: Fragmented Identity and Fragmented Politics,” *The Kurds: Nationalism And Politics*, 49–79, Saqi, Beirut, 2006; M. Van Bruinessen, “Transnational Aspects of the Kurdish Question,” Working Paper, European University Institute, Florence, 2000.

formation of a general Kurdish identity. Therefore, the creation of a diasporic identity can make it possible to transcend the fragmented structure of the Kurdish identity. As one interviewee noted:

The Kurds in the diaspora have more in common together than Kurds in Kurdistan. A Kurd in Sulaimaniyah would have very little in common with a Kurd in Diyarbakir in terms of dialect, culture, sense of humour and daily life. But a Kurd from Britain, a British Kurd whose parents are from Diyarbakir and a British Kurd whose parents are from Sulaimaniyah have more in common. They understand each other more and they have values that can actually be matched.

For other diasporas, a similar process has been experienced:

Sets of connected immigrants who did not have a common identity at the point of origin acquired a new identification with others at the destination. In the United States, Piedmontese, Neapolitans, Sicilians and Romans became Italians.<sup>19</sup>

Although Kurdish identity has been based on a very strong reference to the homeland, diasporic experience has allowed the Kurds in the diaspora to have multiple identities rather than only one, and most of the interviewees explained this diasporic identity in the following way:

I am Kurdish. I sometimes say British/Swedish Kurd. If they ask me, which part of Kurdistan, I say Southern Kurdistan. But the first thing when someone asks me who are you, with great pride I say I am Kurdish.

Another interviewee also stresses this multi-layered structure of identity in the following way:

People in the migration situation do not have one identity. They develop many identities. Some people who are very narrow minded say they have one identity. I say that I am Kurd, Swedish, Middle Eastern. We have also other identities as academics, journalists etc.<sup>7</sup>

However it should be noted that the homeland still has importance in defining members of the Kurdish diaspora. Moreover, the development of Iraqi Kurdistan as a locus for Kurdish national identity has exerted a very positive influence over the members of the diaspora personally, as one interviewee noted:

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<sup>19</sup> C. Tilly, "Transplanted Networks," in *Immigration Reconsidered*, edited by Virginia Yans-McLaughlin, 79–95. Cambridge: Cambridge University Press, 1990.

Even up to 2003, the mental and sentimental power that I had was lesser. After that, when the Kurds became stronger, I felt myself strong here as well. Now the people regard me as somebody valuable, as somebody having a valuable identity.

How they are perceived in Iraqi Kurdistan is much more complex, and for some of them, especially those from parts other than Iraqi Kurdistan, it can even be considered as “traumatic.” However, in some cases this is also true for those who are from Iraqi Kurdistan. One of the respondents explained this as “being a guest in both places”:

I tried to behave like I am at home. But they treat me like a guest; like a VIP, but still a guest. Sometimes they do not allow me to feel at home. The way they treat me, the way they behave, the way they speak is a constant reminder that you do not belong here. It gives us a strange feeling. Because here you always have in your mind Kurdistan as the homeland, as home. When you go home and people think you do not belong there, that you are a guest and asks “where are you from?” it creates a feeling that you have lost both, instead of gaining both. Being a guest in both places gives you a strange feeling that is not comfortable.

Another interviewee summarizes his experience in these words:

“You are no longer from here, you are a Swedish Kurd,” they say, because they suppose that I am thinking like a Swedish that I have a Swedish mentality and that this mentality is foreign.

The perception of the respondents who are originally from the other parts of Kurdistan is mainly based on the country from which they come. One interviewee expresses this as:

They see you as an outsider anyway. I went to the passport authority, and they sent me to the Iranian section, although I had a European passport. I said to them “There is no word ‘Iran’ in that passport,” because all ideas of being a refugee was to be not Iranian. I am Kurdish. It is sad for me, because the Europeans never told me that I am an Iranian, but twenty years later I came back here and you called me Iranian. This has been very insulting for me.

Some other respondents from Iraqi Kurdistan told of how they did not experience anything different in terms of identification and were welcomed as a Kurd from the region, but also admitted that the situation for their children is different, as one of them noted:

For the 2nd generation there are some differences. For example, their Kurdish is not in the same rhythm with mine. They are thinking in another language and translating it into Kurdish. So when they speak, people easily know that they are from abroad.

In summary, it can be said that the respondents consider themselves within the framework of a diaspora community in its broader meaning. This mainly involves integration in the host societies as well as keeping alive the relations to the homeland. However, diasporic experience provides new opportunities for the creation of a new diasporic identity which has a transnational character. This diasporic identity is still being formed and confirms the idea that: “identities are marked by the multiplicity of subject positions that constitute the subject. Hence, identity is neither fixed nor singular; rather it is a constantly changing relational multiplicity.”<sup>20</sup>

## 5. Conclusion

In this article, I discussed how the Kurdish diaspora was influenced by the developments in Iraqi Kurdistan. And as a general conclusion, it can be said that the relationship between the homeland and the diaspora has gained a new form rather than a returning diaspora, as assumed by the previous studies on the Kurdish Diaspora. Iraqi Kurds have experienced different forms of diaspora circulation, involving integration in the host societies as well as keeping the relations to the homeland alive. These new forms of circulation include homeland visits, return-visits, transferring knowledge capital and investment, acting as human capital in developing various projects and lobbying for the homeland. The establishment of the de facto Kurdish state in Iraq has qualitatively affected this process in the sense that it has created a more stable atmosphere and greater resources to advance it. In this sense, the homeland still plays an important role, especially in Kurdish diasporic identity and belonging. The assumed identification of the diaspora members themselves with the homeland, which can take other forms in the course of time, shows the “homeland not as something left behind but as a place of attachment.”<sup>21</sup>

More importantly, it appears that people in the diaspora develop a distinct identity in a very general sense. However, this new identity is still being formed and “is not a singular but rather a multifaceted and context-

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<sup>20</sup> Brah 2005, 123.

<sup>21</sup> J. Clifford, “Diasporas,” *Cultural Anthropology* 9 (3) (1994): 302–338, 311.

specific construct.”<sup>22</sup> Briefly, this identity refers to a duality between homeland and diaspora, a sense of belonging to both, and this paradoxical nature of diasporic identity can be transcended through the building of a multidimensional relationship between diaspora and homeland. As a matter of fact, the creation of diaspora as a transnational space for Kurds, which adds a new dimension to the Kurdish case, has already made this possible, especially in view of the change in the depiction of the Kurdish diaspora. What takes place is a shift from being a victimized, ethno-national, homeland-oriented diaspora to one that is orientated towards being a transnational-diaspora. A recent study calls this “from a victim diaspora to transborder citizenship.”<sup>23</sup> This shift also implies a change in the conception of homeland and the nationhood or nation-building process. In Khayeti’s words: “the practice of transborder citizenship creates a new notion of home, which can be imagined beyond any assimilationist form of state belongingness as it is lived both here and there.”<sup>24</sup> So the connection between the national and transnational spaces, or in other words between territorialisation and de-territorialisation, can be established. The diaspora as a social form and consciousness that exists across state borders, i.e. a de-territorialized entity, and the nation-state as a territorialized entity, and their interaction, can be understood within such a framework. In this sense, the Kurdish diaspora now has a greater capability and opportunity to be an influential actor for the general process of Kurdish nationhood.

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<sup>22</sup> A. Brah, 2005, 46.

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## **PART III**

# **EDUCATION AND RESEARCH**

## CHAPTER EIGHT

# UNIVERSITY OF KURDISTAN HEWLER: A POSSIBLE MODEL FOR ESTABLISHING INDEPENDENT INTERNATIONAL UNIVERSITIES WITHIN DEVELOPING COUNTRIES

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### **Abstract**

The development process requires highly-skilled professionals to deliver and manage it, hence the need to build and achieve higher standards in the fields of science, technology and management. The majority of higher education institutes in developing countries are seemingly incapable of generating professionals with the necessary knowledge and skills to actively contribute to sustainable development, nation building and wealth creation. This is mainly due to the fact that higher education institutes were traditionally developed with a mandate to educate and qualify the workforce to work as government employees without much consideration for market forces or competition.

Improving Higher Education is the foundation for development as it can deliver the essential components for a sustainable society and create wealth. However, reforming higher education as a system is a difficult task and it cannot be achieved by internal reformation, hence the need for a pilot model to develop and implement practical policies, structures and systems.

This chapter will focus on the issues and challenges facing forward-looking universities in developing countries, ways of making the

universities relevant to national needs, and will present the University of Kurdistan Hewler as a possible model for an independent international university that can lead reform.

## 1. Introduction

The higher education sector is an essential part of any nation's effort to sustain and modernise its society. As leading actors within the civil society, universities can offer an institutional venue for understanding and managing the society's scientific, technological, social and political conflicts as well as promoting respect for human rights and democratic principles both on campus and in the wider society, hence providing opportunities for faculty and students to work as agents for social change (Harb 2008; Baban 2012)

Iraq's universities were founded in the 1960s and 1970s and were well known for their quality and intellectual contributions to human society worldwide. Advances were made in both the arts and the sciences, and the Iraqi Academy of Sciences became a nexus for research in language, history and literature. The University of Baghdad's medicine and science faculties attracted students from throughout the Arab world. Fuelled by oil wealth, the universities' research helped support an aggressive import-substitution drive that produced household items, construction materials, and agricultural machinery (Harb 2008).

Unfortunately, political change undermined the vitality of the Universities. As the Ba'athists gradually came to dominate public life after 1968, the higher education sector became a venue for political correctness and manipulation of resources to advance the regime's ideology and policies. Within this context, the sector was centralized in 1970 under the control of the Ministry of Higher Education and Scientific Research (MHESR), in the process losing any semblance of academic independence. Segments of it remained outside the control of MHESR but only because that arrangement served the militaristic aspirations of the regime. The Ministries of Defence, of Petroleum and Minerals, Industry and Military Industrialization and the Nuclear Energy Organization each had a claim on the human resources, curricula, and acceptance policies of universities and technical colleges. The higher education sector quickly became politicised in the service of the regime, directing its research and talents to the political agenda of the Ba'ath party (Harb 2008; Baban 2012).

The retention and advancement of faculty members became more politicised. Those who were close to the regime found lectureships quickly

and advanced rapidly. Admissions policies were skewed to favour of the children of regime personnel (who were admitted without any restrictions) and members of pro-regime Arab organizations and parties; other would-be students had to meet stringent entrance requirements and were pressured to join Ba'athist organizations. Some universities also received preferential treatment. Most, however, had to cope with poorly maintained facilities and buildings, old and dilapidated equipment, a lack of technology, outdated journals and books, and low faculty salaries. Corruption and isolation affected morale, further damaging performance at all levels of education. Many academics left the country seeking opportunities elsewhere. Then a series of wars and sanctions followed, isolating and damaging the higher education system even further (Harb 2008; EL-Ghali et al. 2010).

Experience indicates that the Middle East as a region has largely failed to keep up with today's knowledge-oriented world. Additionally, this region has noticeably low levels of research and scholarly products. For example, book publication in Arab countries represents about 1% of the world total. In fact, the Arab world, with an estimated 220 million people worldwide, published fewer books than those published in Greece, which is spoken by just 11 million people. Furthermore, roughly one-fourth of all university graduates from Arab countries migrate, and technology is largely imported (Greater Middle East Partnership 2004).

Higher education institutes in most developing countries were developed with the intention to educate and qualify the workforce to work within the country without much consideration for market forces or competition. Consequently, the workforce will not possess the necessary knowledge and skills to become active leaders and innovators in a competitive environment (Baban 2011a; Baban 2012).

Evidently, reformation of higher education is now urgently required, and this is a difficult task that requires overcoming some daunting obstacles, such as the lack of resources and the overcentralization of decision making. However, this is a must as higher education can help lead the way in the quest for democracy and education in society. It can also drive the country's economic development, for universities can play a vital role in improving scientific and technological education, business and management training, and public administration. The reform must focus on renovating the curriculum and training faculty members to make them fit for purpose. Reforming the higher education system is a difficult task and it cannot be achieved by higher education reform from within alone; hence the need for a pilot model to develop and implement modern and workable polices, structures and systems (Baban 2012).

This chapter will focus on the challenges facing Universities in developing countries and will present the University of Kurdistan Hewler as a possible model for an independent international university that can lead reform.

## **2. Main Issues and Challenges for Higher Education**

The higher education sector in developing countries has the potential to play an important role in overcoming society's widening sectarian divides, fostering long-term peace and stability. Universities can play a leading role within civil society; they can offer an institutional venue for resolving the society's s political, social and economic problems while promoting respect for human rights and democratic principles both at the campus level and in the wider society (Baban 2012).

Unfortunately, political interference, wars and conflicts in developing countries tend to make higher education, research and scholarly development a low priority for spending, and in Iraq for example the average spending on higher education was about 0.2% of GDP, compared to a global average of 1.7% (UNDP 2009). Consequently, higher education and scientific research are often degraded and are facing a number of challenges, including isolation from international academic communities, poor infrastructure, lack of reliable sources of utilities and a rapidly growing student population (EL-Ghali et al. 2010; Baban 2011a).

It should be noted that higher education institutes in most developing countries were originally developed to suit a country with a closed market, hence the workforce which may have obtained formal qualifications initially designed to work in a non-competitive market will not have the necessary knowledge base and skills to compete in a global market, and will be inadequately qualified (Aubert & Reiffers 2003; Moran & Stevanovic 2009; Baban 2011a). Under these conditions, the education process as a whole fails and undermines the base necessary to produce higher order thinkers who can move the knowledge society forward (Kirk 2010).

The goals of the reforms include quality assurance in education, evaluating the plans of professors and students, encouraging students to participate in the evaluation and decision-making process, creating infrastructure and benefiting from human resources, and re-structuring universities.

Sustainable development and nation building requires highly skilled professionals to deliver it and dictates the need to develop and achieve higher standards in the fields of science, technology and management,

encouraging investment in people and raising the capacity of professional cadres (Baban 2005). In addition to developing the traditional disciplines, there is a need to develop curricula in fields such as conflict resolution and reconciliation, institutions and institution building, civil society, rule of law, women's studies, and human and civil rights. These new areas of study will help to turn Iraqi universities into centres for civil society development. The curriculum should define key issues, explain and articulate how they can best be taught, and provide examples from the recent history of countries and nations which have attained inclusive democracy through nonviolent resolutions to their conflicts.

Clearly developing a sustainable society and economy at the national level will require improving access to quality and modern university education; hence, it is critical for governments to invest in its human capital and human development through universities to achieve higher standards in the fields of science, technology and management (EL-Ghali et al. 2010; Baban 2012).

Korea and Malaysia present two excellent success stories for reforming their education and higher education systems to unlock human potential, hence developing workforces capable of leading, critical thinking and innovation.

### **3. University of Kurdistan: Hewler, UKH**

As indicated previously, the current higher education system in Iraq, also used in the Kurdistan region, is rather antiquated and does not prepare graduates for the new realities of nation building, market demands and competition. Therefore, a significant number of potential talents are not used for nation building and are frustrated through unemployment or unsuitable employment (Baban 2011a; Baban 2012).

At the same time, the Kurdistan region is experiencing a rapid rate of development and needs world class trained professionals (Baban 2005, 2006). However, the development process is hindered by a lack of suitable homegrown talent and professionals (Baban 2011a).

Plainly, there is a mismatch between what higher education is offering and society's needs. Higher education needs to be reformed so it can prepare graduates for the new realities of nation building, wealth creation, market demands and competition, hence the need for reforming the curriculum, teaching and learning methods and revising assessment methods. The reform should focus on "understanding" and "deep learning approaches." In addition, higher education institutions need to follow clearly defined and easily measurable quality assurance procedures and be

subject to external evaluation and international benchmarking. More importantly, higher education institutions need to be independently managed and should facilitate and reward research. Finally, promoting the use of the English language in teaching and learning in higher education is needed to connect with, benefit from and contribute to the global community in all relevant fields (Baban 2011a; Baban 2012).

Evidently the higher education system needs reform and reform cannot be achieved by higher education reformation from within. Hence, there is a need for a model to develop a new vision for an independent international university as well as the necessary tools for implementing such as policies structures and systems. This creates the idea of establishing a pilot institution to lead reform to be the change agent and deliver international level education whilst being an independent public university. UKH was developed on this model.

The UKH is a public and independent international university modelled on the UK Higher Education System (Fig. 8.1 below), in which all programmes are taught in English by internationally recruited academic staff. UKH was established during 2006 and the first class graduated in 2010. UKH has its own admission process and is open to all who qualify on academic merit.

The UKH mandate is to educate and train young talents to become the driving force for sustainable development, to improve the standard of living and to lead intellectual life in the Kurdistan region and in Iraq in general. UKH degrees are accredited by the Ministry of Higher Education and Scientific Research, Kurdistan regional Government, Iraq. It is also recognised by and affiliated to the International Association of Universities. UKH's world ranking is 6,931 and it is consistently ranked in the top five universities of Iraq (University Web Ranking 2011, 2012).

### **3.1 Factors governing UKH's learning, teaching, research and enterprise**

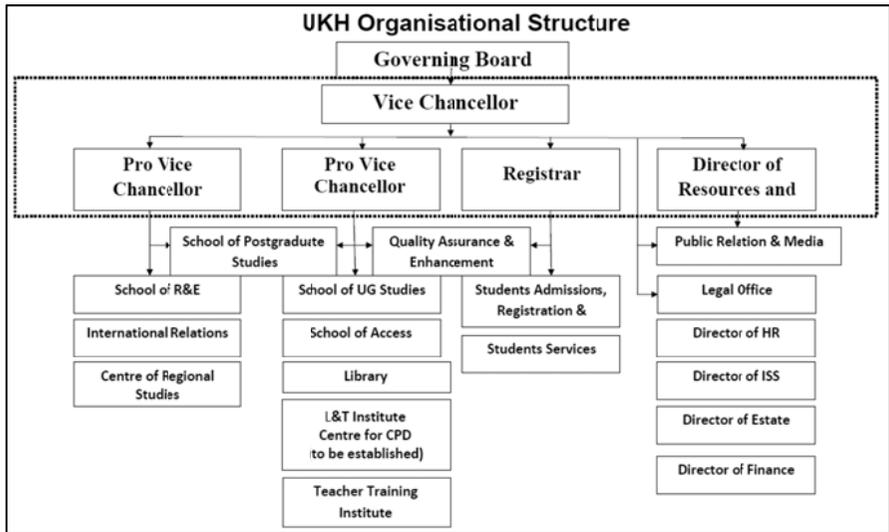
- (1) Graduate Profile—aiming and planning to produce independent, critical and creative thinkers with a mastery of their discipline and developed skills supporting their employability prospects.
- (2) Graduate Employability—aiming and planning to provide graduates with knowledge and skills relevant to the job market and the developmental needs of Kurdistan. This is achieved through ensuring the relevance of the curriculum to the needs of Kurdistan Region.

- (3) Teaching and Learning—providing students with factual knowledge in specific disciplines, critical analytical thinking, practical skills and attributes, innovation in curriculum design, delivery methods, learning and teaching methods and assessment strategies. Finally working towards up-skilling the workforce in Kurdistan Region through developing flexible and personalised training courses
- (4) Research—commitment to quality applied research that contributes to the industrial, economic, governance, cultural and social development of Kurdistan. In addition to research training through establishing a competitive suite of postgraduate research degrees at the Masters and PhD levels.
- (5) Learning and Teaching Support through commitment to student-centred learning and independent learners, and having a well-stocked library that provides access to all the essential learning resources, and ensuring that the environment is stimulating and supportive as well as being able to respond flexibly to learners' needs and aspirations.
- (6) Students' Voice—students have an input to the planning and decision making processes through the student's union (an independent and elected body), staff-students liaison committee, and the students' module feedback process, in addition to working with UKH Alumni to improve UKH and support their careers.
- (7) Quality assurance—Quality is built in through programme approval process, student feedback, staff performance appraisal, external examiners and stakeholder feedback sessions.
- (8) Staff appointment and promotions are based on merit and a transparent and a competitive process.
- (9) Student admissions are based on merits and competition. UKH rules and regulations as well as policies and practices are published and adhered to at all time.

### **3.2. Overall academic structure**

The University of Kurdistan Hewler degrees are five years of study consisting of a two-year Access programme and a three year honours degree (see Fig. 8.2 below). The access programme consists of two main components: English for Academic Purposes (EAP) and selected, relevant topics provided to elevate students' knowledge base and skills as a preparation for studying degree programmes at the international level and exclusively in English.

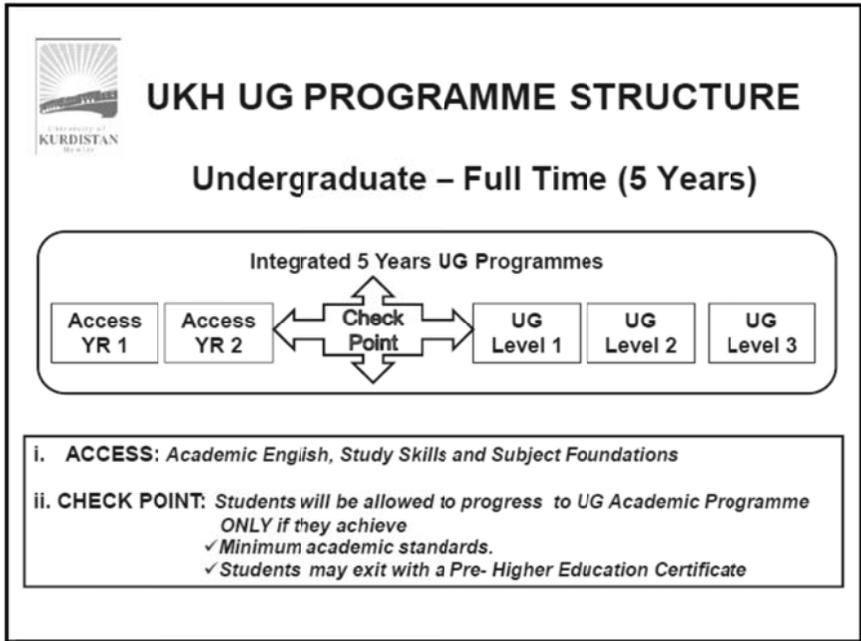
Fig. 8.1. UKH organisational structure



The University of Kurdistan Hewler offers degrees in the following fields:

- (i) Arts and Humanities—Degrees in business, management, economics, finance, politics and international relations.
- (ii) Science and Engineering—Degrees in natural resources engineering, management, computer science and engineering.

Fig. 8.2. The overall academic structure at the University of Kurdistan Hewler.



### 3.3. Academic structure: principle degrees and diplomas

The following are offered within each department at UKH;

- (1) Department of Natural Resources Engineering and Management
  - (i) BSc. (Hons) Water Resources Engineering
  - (ii) BSc. (Hons) Mineral Resources Engineering
  - (iii) BSc. (Hons) Petroleum Engineering.
- (2) Department of Applied Computing and Computer Engineering
  - (iv) BSc. (Hons) Computer Science
  - (v) BSc. (Hons) Computer Engineering
- (3) Department of Business and Management
  - (vi) BSc. (Hons) Business and Management
  - (vii) BSc. (Hons) Economics and Finance

- (viii) BSc. (Hons) Public Administration (in collaboration with Politics and International Relations)
  - (ix) Masters in Business Management
- (4) Department of Politics and International Relations
- (x) BA. (Hons) Politics and International Relations
  - (xi) BSc. (Hons) Public Administration (in collaboration with Business and Management Sciences).
  - (xii) Masters in International Studies

#### **4. A Preliminary Evaluation of the Barriers to Progress**

A significant number of the workforce was recruited before clear cut job descriptions, rules, regulations and contracts were developed. The geopolitical circumstances of the Kurdistan region (despite the excellent tax free salaries, free furnished accommodation and free flights to home addresses) led to few international applicants, and therefore not providing the university with a strong field to choose from. Hence, UKH became populated with international staff working and living in close vicinity and having no recognized job descriptions or workable rules and regulations. Consequently, the following aspects represented barriers to progress:

- (1) Lack of a clear vision, leadership and the ambiguity of academic, human resources and financial rules and regulations.
- (2) The lack of experienced middle management at the head of department level.
- (3) A significant number of international staff having UKH as their first post in higher education after obtaining their degrees.
- (4) A classic difficulty facing institutions mixing the American and the British format of functions was also present, particularly when processes required external and peer evaluation.

The environment produced a very strong and polarised group disputing management decisions, which in combination with “self-interest” represented a strong barrier to progress. This was most evident through university committee work being constantly pre-empted by certain groups which, having met prior to committee meetings, already had an agenda to slow down the development and approval of essential and standard academic, human resources and financial policies. This also hindered the development and implementation of essential policies such as probation and workload models. However, this is to be expected as colleagues had

the authority to approve polices that would measure their performance and make them accountable for their academic records when applying for promotion or renewing their contracts.

The local culture was also a challenge as it promoted and accommodated favouritism, a feature known as “*Wasta*.” This negatively influenced quality, hence the UKH developed and strongly implemented a “No *Wasta*” policy which applies at all times to all relevant processes including admission, appointments, probation and progression. This stand caused significant difficulties when the “Zero Tolerance for *Wasta*” was implemented and publicised.

An institutional scan showed that two departments were not sustainable due to lack of interest by students and the inability to convince the Kurdistan society of the need for these disciplines. One department was discontinued and the other reformed based on a review by an international external scholar in the field. These actions generated ill feeling and some staff reacted through negative campaigns, including disparaging the university using social media and the local press.

## **5. A Preliminary Evaluation of the performance over the period 2009–2012**

The Success of HE institutions and universities at the international level can be examined using the following indicators (Balderstont 1995; McCaffery 2004; Peterson 2008; Kyung Hee 2011; Mee-Souk KIM 2011; Baban 2011):

- (1) Consistent, merit- and evidence-based decision making—at UKH, decisions regarding admissions, appointments and promotions are based on clear rules, regulations and international practices. UKH benefits from having external examiners to ensure quality and maintain consistency and standards.
- (2) Healthy student recruitment and admission records—records show that student applications have increased fifty fold, and the quality of applications has also significantly improved.
- (3) Successful student progression and completion—UKH successfully graduated the second cohort whilst celebrating its fifth anniversary.
- (4) Development of a new academic portfolio in line with international standards—UKH developed a validation process, reviewed existing programmes using international reference benchmarks (e.g. access, computer science and computer

- engineering, economics and finance, public administration and management)
- (5) Development of a new academic quality manual—UKH developed a clear academic quality manual outlining all academic processes in a clear and consistent manner using recognized international benchmarks (admissions, assessment, academic regulations, external examination, annual programme reviews, students' feedback, staff peer observation, staff induction and development, staff appraisal and performance management, etc.)
  - (6) Graduate quality and employability—UKH has focused on matching graduates to market needs, and workshops related to self-awareness, CV preparation, interview skills and career fairs are held on regular basis.
  - (7) Administration & Management—the management have introduced performance management, purchased power campus software to automate UKH processes and systems, reviewed staff contracts, developed a HR manual, refurbished the admissions and registration office, expanded the campus and developed productive associations with international universities.
  - (8) Liberal environment and stable academic life—UKH ensures that all political and religious views are represented and respected through the code of ethics and conduct, which is signed by and adhered to by all students and staff. Furthermore, UKH teaches students how to think, not what to think.
  - (9) Continuously developing and introducing relevant quality programmes—UKH over the last two years, as a response to government and market needs, has developed validated undergraduate degrees in water resources engineering, mineral resources engineering and petroleum engineering in addition to new masters programmes in business management and international studies.
  - (10) Developing staff qualifications and skills—several staff members obtained higher academic qualifications; two completed their PhD's from international universities, five will obtain their PGCE in teaching and learning from the University of Brighton, UK; two staff members attended training in Malaysia on supervising PhD students and projects, and the VC was awarded a DSc, a higher doctorate degree, from the prestigious School of Environmental Sciences in UEA, UK.
  - (11) Recognition both locally and internationally—UKH has successfully obtained two externally funded projects, obtained

recognition from UNISCO and joined the International University Council, and led and participated in MoHE working groups including accreditation of new HE institutions, QA in higher education, and research management and development. In addition, UKH continued with its successful student exchange programme with the University of Amsterdam, bestowed an honorary degree upon Sir John Major and successfully developed and established the International English Language Centre with the University of Leicester, UK. Finally, the university has gained recognition from the University of London in the United Kingdom and UKH students can obtain a University of London degree in several disciplines whilst studying in the Kurdistan region. In addition, UKH students and staff have full online access online to the University of London library.

In Conclusion, based on internationally recognized success indicators, UKH is developing and progressing in a healthy manner, despite the barriers and teething troubles.

## **6. Conclusions and Discussions**

Developing human resources and capacity building are the solid basis for planning and development in developing countries. Evidently, unfortunate circumstances have resulted in having a higher education system that is unable to deliver graduates capable of actively contributing and shaping the future toward sustainable development, nation building and wealth creation. Clearly, improving higher education is the key for nation building as it can deliver the essential components for a sustainable society and wealth creation.

The obvious questions are what to do and how to proceed? The following suggestions are recommended;

- (i) To learn from others, namely South Korea and Malaysia, in reforming education and higher education with an emphasis on unlocking human potential and utilising natural resources towards achieving a sustainable way of life. A basic road map was proposed under section 4 above.
- (ii) Enforcing and promoting the independence of institutions, developing a curriculum that is focused on sustainability, nation building, national Kurdish pride and wealth creation, as well as

insisting on quality, external elevation and international benchmarking.

In conclusion, based on evidence and arguments presented in this chapter, higher education institutions in developing countries, given the right conditions, can play a significant role in the process of nation building and wealth creation.

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## CHAPTER NINE

# MULTIDISCIPLINARY AND INTERDISCIPLINARY RESEARCH AND EDUCATION IN KURDISTAN

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### **Abstract**

Research and education (R&E) are fundamental to the advancement of human societies. These two inseparable concepts are in a constant mutual feeding cycle. Education provides the skills required to perform research and make discoveries, which in turn improve education. Human's instinct to explore the world over hundreds of thousands of years has led to the creation of disciplines such as mathematics, biology, economy and the like. In a traditional R&E system, disciplines are independent entities in which students receive a depth of knowledge in one field of study. Graduates of a disciplinary R&E system usually lack the skills to develop and perform multi- or inter-disciplinary research. The past two decades have experienced an enormous diversification of disciplines to the extent that it has effectively hindered communication in academia. This is perhaps why the world is still struggling to deal with major problems such as population growth, water and food shortage, pollution, global warming, women's rights and terrorism that have an interdisciplinary nature. Real world and complex problems require interdisciplinary skills and collaborations among experts. It is now clear that state of the arts research and technology is achieved mainly by crossing the borders of traditional disciplines and integrating them. To address the shortcomings of disciplinary R&E, developed countries have adopted a multi- and inter-disciplinary strategy. In the former system, bridges are made between the classical disciplines and in the latter they are integrated, enabling

collaborative research and even creation of new disciplines. In this chapter an overview of approaches to R&E and their differences and history are provided. The nature and dynamics of R&E in developed versus undeveloped countries are then demonstrated. In the final part of the chapter several suggestions in relation to the advancement of R&E in Kurdistan will be provided.

**Keywords:** multidisciplinary and interdisciplinary education, dynamic society, advanced society

## 1. Research and Education Systems

Research and education (R&E) are two fundamental and interlinked topics that have a direct impact on all aspects of human life. It is fair to say that education is the most important factor in promoting research, which in turn is vital in revising education. In this dynamic cycle of education and research it is hard to imagine how one could work without the other. Let's give an example. We receive education about human genetics at university and then apply this acquired knowledge in our new research career. This leads to the discovery of a new gene pathway or perhaps to the falsification of previously reported results. The new findings will then be used to modify the educational textbooks on human genetics. In addition, a revised educational strategy will be put in place to minimize the misleading results and optimize reliable research output. Therefore, research and education are in a dynamic cycle. R&E can be classified in different ways, one of which is the status of discipline. Generally, R&E can be classified into the following three categories:

- (1) Disciplinary
- (2) Multidisciplinary
- (3) Interdisciplinary

In disciplinary R&E, subjects of broad interest that have also accumulated significant amounts of basics are regarded as discrete and independent.<sup>1 2</sup> Examples of disciplines are mathematics, chemistry, biology, history and economics. In this system, disciplines do not need each other to exist as they function in a totally independent manner, and each discipline has its own rules and structures. Research and training are limited to the subjects and fields within each discipline, and collaborations and team work also occur within each discipline. As an example, a chemistry student receives education in chemistry but not in history or

biology. They might be offered introductory lectures on mathematics, physics and the like, but those are mainly for making the chemistry topics understandable for the student. For this reason, the students are not expected or allowed to perform research in disciplines outside their own. They are neither able to select topics outside their discipline, nor can they move from one discipline to another. For example, an undergraduate of mathematics is not permitted to pick chemistry or economy as their postgraduate subject of study. In this system, disciplines are usually located in physically distant and isolated buildings and environments, there are many cases where separate campuses are allocated to medical science, basic science and the like. Also within each campus, there is usually no requirement for disciplines of the same type, such as physics and chemistry, to be close to one another.

In a multidisciplinary R&E system<sup>3 4</sup> the traditional disciplines still exist but a significant amount of collaboration between disciplines is in place. Teams of researchers with diverse backgrounds work together, each responsible for a unique aspect of the work, to answer questions that are of wide interest. When it comes to education, students usually specialise in one discipline but are allowed to select courses from others, so for example, a chemistry student can attend labs or lectures in biology. Students can also select more than one (usually two) majors from different disciplines. In this R&E approach, disciplines are regarded as discrete and stand-alone entities but the need to make a bridge between them is emphasised. Sometimes this bridge is made by housing different disciplines of the same type in the same or nearby buildings. This facilitates the organization and management of multidisciplinary teaching and research projects.

Interdisciplinary R&E<sup>5 6 7</sup> is referred to as a system in which disciplines are seen as semi-dependent entities. Therefore, a successful interdisciplinary R&E needs to satisfy the requirements of several traditional disciplines. As opposed to bridging between disciplines in a multidisciplinary R&E, here the aim is to integrate disciplines by developing research that requires skills in several fields of study. An extensive critical thinking and exchange of ideas is in place and everyone is involved in this process. This is in contrast to multidisciplinary R&E, where each individual is mainly in charge of their own disciplines only, and often does not enter critical discussions involving others. Students of an interdisciplinary R&E are required to pass courses in which knowledge from several disciplines are integrated and presented as unique and novel subjects. Examples are courses in bioinformatics that involve computer science, mathematics, statistics, chemistry and biology. Here the students

do not specialise in any of these subjects but learn how to integrate them to address complex problems. In addition to having disciplines in close physical proximity, centres specifically allocated to interdisciplinary R&E are established that attract people with highly diverse backgrounds and, more importantly, with creative minds. The aim in this system is to address significant problems and find solutions for them by removing the so-called boundaries of disciplines. Here everyone is responsible for every aspect of the projects and need to critically assess it regardless of their background and qualifications. As opposed to the disciplinary and multidisciplinary R&E, in an interdisciplinary system a chemist is liable for the chemistry as well as the biology, mathematics, engineering, management and even social aspects of a project about designing flu detectors for migrating birds, for example.

## **2. History of Research and Education**

It appears that research and education have been around at least since the existence of modern humans. As an example, survival skills have been passed on from the cave people to their descendants over thousands of generations. These skills have changed dramatically as a result of continuous research and experience. However, research and education began to be transformed into modern entities by the olden times philosophers. The limited breadth and depth of research and education in the early days enabled philosophers to explore several subjects at once. It is not surprising to see that Omar Khayyam has written treatises on a tremendously wide range of topics including mechanics, geography, mineralogy, music, climatology and Islamic ethology, or Avicenna who added alchemy (chemistry), psychology and mathematics to this list. It is obvious that none of these subjects had a great deal of detail at that time, and were certainly not regarded as separate disciplines, as opposed to now. This implies that R&E, as we know it now, started with an ancient interdisciplinary structure. In ancient times, students were introduced to a wide range of subjects that had been explored only at a basic level. However, this trend did not last long as knowledge experienced exponential expansion in many directions, to the extent that each direction became a discrete discipline. In addition, many new disciplines were established, and mathematics, philosophy and astronomy were explored and no longer thought of together. Disciplines functioned so independently that it was hard to imagine that they had the same root. This trend has continued to the present time and the disciplinary R&E system has gone to an extreme, dominating many higher education institutions. The “unavoidable”

expansion of knowledge has resulted in countless sub-disciplines and branches within each sub-discipline. The vast amount of R&E material within each of these branches makes communication among them appear unnecessary. This trend of over-specialisation has allowed for the detailed analysis and deep understanding of many individual processes, such as the precise kinetics of a particular chemical reaction in a particular solvent at a particular pressure and temperature. However, the lack of communication and collaboration among the specialists without broad knowledge did not allow the disciplinary-bred knowledge to be of significant use. A few decades ago, developed countries realized that disciplinary R&E, while necessary for expanding knowledge, does not lead to the knowledge necessary for solving complex problems. In other words, it does not lead to discoveries with broad and significant impacts. Multidisciplinary and later interdisciplinary R&E systems were then introduced and are currently practiced in those countries. This change has had a significant role in many important discoveries and the advancement of knowledge in the past few decades. However, traditional disciplinary R&E is still the dominant system in almost all undeveloped countries.

### **3. Pros and Cons of R&E Systems**

Supporters of disciplinary R&E argue that it needs to have a disciplinary structure in order for students to receive adequate expertise necessary to advance the discipline. It is believed that this level of expertise (e.g. three to four years of a BS degree, two to three years of a MS degree and four to five years of a PhD degree) cannot be compromised by the replacement of even a small portion of disciplinary R&E materials with those of interdisciplinary R&E. For example, it is argued that a chemistry student has a lot to learn about chemistry topics and there is no room left for teaching mathematics or physics. Graduates of this system have a deep knowledge and understanding of a few limited topics. Often they can develop projects and solve problems within those topics without the need to collaborate. The new knowledge produced in this system mainly feeds back to the same discipline. In most cases, problems are approached from a single angle that can be comprehended by the knowledge from within the discipline. For example, obesity is dealt with as a behavioural issue in psychology, but it is targeted as a metabolic disorder in medical research. Often only one facet of multi-facet problems is dealt with in each discipline and there is no communication between disciplines to integrate different facets of the same problem. Departments allocated to each discipline are usually separated both intellectually and physically. When

psychology and neuroscience are regarded as two discrete and independent disciplines, there is in fact no need for the departments to be in close proximity.

The advantage of disciplinary R&E is that each discipline has a well-defined and standard structure and language. The requirements and education path of a degree in each discipline are, to a great extent, clear. As an example, in the universities there are standard courses designed to cover basic and advanced chemistry topics to prepare students for a research, teaching or industry career in chemistry. Many details of possible chemistry related jobs are also easily accessible by students before they have started their study. These features help the students to pick a discipline for their study that matches their interest and skills. The other advantage of this R&E system is that people who receive disciplinary education have a detailed knowledge in the subject of their discipline, thus can contribute to its advancement.

The disadvantage of the disciplinary R&E system is that it cannot solve complex problems that have a multidisciplinary or interdisciplinary nature. The world we are living in is enormously complex. The advancement of science and technology has uncovered the tip of this iceberg of complexity and interconnectivity among all components of life. Finding solutions to significant and global problems is not possible in a disciplinary R&E system. The issue of global warming is highly unlikely to be resolved by chemists, environmental scientists or mathematicians alone. By the same token, topics such as aging, cancer, human rights and pollution do not fit into the themes of any single classical discipline, thus cannot be dealt with in a disciplinary R&E system. For the same reason described above, the impact of disciplinary research is usually subtle. Disciplinary-educated scholars cannot connect to a wide scientific community and their work is usually seen (and sometimes praised) by a relatively small number of specialised individuals. The language barrier among disciplines is another cause of this shortage of communication and teamwork. Each discipline has a standard and special language by which those who have received training in it can communicate. However, this language is not understandable by graduates of other disciplines.

The advantage of multidisciplinary R&E is that it promotes bridging between and communication among disciplines. Here, teamwork is practiced mainly by dividing the tasks among the team members based on their backgrounds and skills. This allows for the investigation of complex problems by engaging people from several different fields. For example, psychologists work with neuroscientists in understanding cognition. Physicists, engineers and biologists work together to develop a tool for the

analysis of biological compounds such as proteins and lipids. In many cases, the collaborative nature of this R&E system allows for the investigation of problems from different angles.

The shortcoming of multidisciplinary R&E is that, similar to the disciplinary system, disciplines are considered as independent entities. However, the need to bridge between them is emphasized. In this system, a biologist and an engineer can create some sort of common language and work together but they do not enter critical discussions that require skills in both disciplines. In other words, each expert stays within their own discipline border. The existence of such a discipline border does not allow for creative R&E that neither fit into any discipline nor can be achieved by bridging between disciplines, but exit right at the borders of disciplines. To understand and explore the borders, disciplines need to be integrated rather than being bridged, and this is in fact the aim of interdisciplinary R&E.

The advantage of interdisciplinary R&E is that it provides a wider and integrative education that is required for research at the intersection of disciplines. A diverse range of topics are included in the program but with the focus being on their integration. The students are not usually taught topics in great detail, but learn how to integrate several disciplines and perform creative thinking and research. In an interdisciplinary system, the biologist receives training in engineering to a sufficient extent that enables them to understand the engineering aspect of the project and vice versa. Therefore, all members of the team can engage in an interdisciplinary discussion and are able to critically assess the entire project.

The disadvantage of such an R&E system is that compared to disciplinary based R&E it has a less standard and less well defined education and career pathway. The requirements of an interdisciplinary degree are not always clear. This is because there is little limitation as to what knowledge is required to perform research and solve complex problems. Research is usually problem-based, and as can be imagined it is not trivial to establish an interdisciplinary education system to prepare students for a wide range of interdisciplinary research. By the same token, it is also nontrivial to create a common and standard language in an interdisciplinary R&E that involves the integration of several disciplines, each having its own standard language.

The other difficulty with interdisciplinary R&E is the shortage of critical performance assessments and peer reviews. There is usually one or a handful of teams working on the same research across the globe. Therefore, the research feasibility and performance as well as the educational pathway and outputs, may not always be thoroughly assessed.

#### 4. Which R&E System to Put in Place?

As described above, there are three main R&E systems, each with unique characteristics, advantages and disadvantages, and that are practiced differently in different part of the world. The question one might ask here is that “which R&E system is the best and should be in place?” To answer this question two important points need to be considered. Firstly, the types of problems we are dealing with, and secondly people’s natural skills and potentials.

As described earlier in this article the questions and projects that require research and education are very diverse. Some can be answered by research within a discipline, but others may require collaboration among or integration of two or more disciplines. Therefore, in terms of the types of problems all three R&E systems seem necessary. In other words, depending on the type of questions, different R&E systems are needed. As an example, universities need to have a disciplinary R&E to produce chemists and chemical engineers as well as businessmen and information technology experts for various tasks in the chemical industry. But at the same time there needs to be a multidisciplinary R&E in place to enable these people to work together efficiently. Additionally, an interdisciplinary R&E is needed to train people with skills in several of the above-mentioned disciplines, such that problems that are at the intersection of these disciplines can be coped with.

The second point to be considered when asking the question “what R&E system is the best” is related to people’s natural abilities. Humans have different natural potentials, talents and interests. Some are good at one discipline while others have multiple skills. Some enjoy exploring one topic in great depth while others prefer (and have the potential) to learn several topics but with lesser details. The ideal R&E system is the one that gives people the opportunity to explore their potentials and to follow their interests. The advancement of classical disciplines, such as physics and chemistry, is as equally important as the bridging between them, as well as integrating them. Therefore, to be inclusive in terms of the range of questions as well as the range of people’s natural skills, R&E needs to encompass all three types of systems described.

In developed countries, there are research and education centres and universities dedicated to all three R&E systems. As an example, in MIT there are classic departments allocated to fundamental disciplinary research. To also promote multidisciplinary R&E, many of these departments are located in close proximity in the same building and even share the same financial system.<sup>8</sup> There are many examples of academic

staff working in the fields that at first glance may seem irrelevant to their education background. For example, people with a PhD in mathematics and physics have positions in the biology section. Academic staff with diverse backgrounds have joint positions in two or more faculties. Students are allowed to select among highly diverse courses across faculties to complete their degrees. There are also centres designed specifically for interdisciplinary R&E. Perhaps the best example of this is the MIT media lab,<sup>8</sup> with a yearly budget of over \$30 million, designed to explore media and human-computer interactions.

## **5. Education in Kurdistan**

Multidisciplinary and interdisciplinary R&E systems are not adequately practiced in the Eastern countries, including Kurdistan. Currently, in this part of the world, disciplinary R&E dominates. This is partly due to the involvement of the region in war and ethnic issues over a long period, and also a lack of self-governance. For these reasons, the region has not had a chance to keep up with the R&E changes in developed countries. After the recent liberation of Kurdistan, several new and international universities and educational institutions have been established in the region. Academics from inside Kurdistan and the diaspora have contributed significantly to rebuilding the R&E system. However, the traditional mentality of disciplinary R&E only still dominates in the academic institutions of the region. The aim of this article is to stress that this pattern needs to change in order to keep up with the fast growing and dynamic research world and the needs of future generations. There are several cultural and religious complications in Kurdistan that can be tackled gradually by having an efficient R&E in place. The honour killing of woman and self-identification are two examples that deserve immediate attention. Women's rights is a multi-facet concept; thus, to address it effectively, Kurdistan needs fundamental investment in a multi- and interdisciplinary R&E. The identity, language, background and history of Kurdish people and their lands is also less understood, not only by the world, but also by the Kurds themselves. It is unfortunate to see that an important historical place known as Qizqapan<sup>9</sup> (the tomb of Cyaxares, the grandson of Diako who established the Median Empire) in Sulaymaniyah has been almost abandoned by Kurds and regretfully even by the Kurdistan government. Very few people in Kurdistan, in particular in the south, are aware of their ancient Zoroastrian religion, despite the fact that its symbols are carved out of stone in Qizqapan. Most people in the region self-identify themselves as Sunni Muslims. This not only has affected the

political and cultural aspects of Kurd's lives but has also created a point of divergence from the Kurds with different religions. It is worth noting that diversity in the society is an advantage in many ways, but the point here is that lack of knowledge about the roots of religions in Kurdistan is an imminent threat to its future. The historical migration and settlement of Kurds is also a matter of debate. The lack of local people's knowledge about their religion and history, as well as disagreements over the ancient history of Kurds and other ancient nations, may indicate that the disciplinary R&E system has proved to be ineffective. A multi- and inter-disciplinary research and education involving social science, religion, history as well as genetics<sup>10</sup> for the use of DNA to identify genetic similarities and differences among individuals can shed light on Kurdish history, settlement in Mesopotamia as well as their cultural and religious roots.

I suggest that a team of experts from academia and policy makers put together a committee to address the issue of R&E in Kurdistan. As a researcher who has received multidisciplinary education and performed multi- and inter-disciplinary research across chemistry, mathematics, statistics and biology, I suggest the following strategies as a guideline to assist the committee in developing an efficient R&E system in Kurdistan.

- (1) Design of compact courses to cover general engineering, history, science and the like, such that they are understandable, as an introduction to the topics for the students of all disciplines.
- (2) Establishment of an R&E system in which students can easily select courses outside their discipline as part of their degree.
- (3) Maximizing the interaction among disciplines by having joint seminars and retreats between universities, faculties and schools, or even by housing different disciplines in the same building.
- (4) Establishment of scholarships for multi- and inter-disciplinary research and education
- (5) Establishment of interdisciplinary research centres and allocation of funding.
- (6) Training of postgraduate students in the core interdisciplinary institutions overseas.

Some of the advantages of multi- and inter-disciplinary R&E include:

- (1) Greater networking and sense of belonging
- (2) State of the art research

- (3) Greater mutual understanding that leads to the advancement of a democratic society
- (4) Creation of a dynamic society that paves the way toward a developed society.

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## **PART IV**

# **HEALTH AND QUALITY OF LIFE**

## CHAPTER TEN

# EVALUATION OF CARDIOPULMONARY AND LADCA DOSE IN LEFT-SIDED BREAST CANCER PATIENTS BY UTILIZING THE DEEP INSPIRATION BREATH-HOLDING TECHNIQUE

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### Abstract

**Purpose:** Conventionally, breast cancer patients are treated in normal free breathing (FB). However, recent respiratory adaptive radiotherapy enables the tracking and monitoring of the patient's breathing cycles. Thus, the patient can be guided to hold their breath in deep inspiration (Deep Inspiration Breath-hold [DIBH]) during CT-simulation scans and treatment delivery. The DIBH-gating technique offers clinical advantages, where doses to the heart and ipsilateral lung might be reduced, while a curative dose to the Clinical Target Volume (CTV) is delivered. The objective of the current approach is the evaluation of cardiopulmonary and Left Anterior Descending Coronary Artery (LADCA) received doses for patients acquired for dual-CT-scans, both in FB and DIBH. The aim is also to investigate the potential for improving CTV dose coverage by the prescribed dose.

**Material and method:** During the initial clinical implementation of DIBH-gating (using Varian's RPM-system™) at our site, thirteen node positive left-sided breast cancer patients were CT-scanned twice, once in

FB and once in DIBH. For each patient, two treatment plans were designed by using Varian Eclipse treatment planning system (TPS); One DIBH-gated plan was used for clinical treatment, and one FB plan was used as a backup plan. The prescription dose was 50 Gy in 25 fractions.

**Result:** All patients underwent gated treatment. Evaluation of the thirteen dual-scanned patients revealed that the dose to cardiac volume reduced (from FB to DIBH) for constraints V17 Gy from 5.7% to 5.5%, while for V35 Gy it was from 3.1% (FB) to 3.0% (DIBH) (the presented data is the average value of thirteen patients). The LADCA max-dose reduction was from 47.25 Gy (FB) to 45.60 Gy (DIBH). The mean lung dose reduction was 16.08 Gy (FB) to 15.37 Gy (DIBH). Furthermore, the lung volume dose reduction for V20 Gy was 16.6% (FB) to 15.6% (DIBH). Eventually, the percentage Min, Max and Mean doses to CTV for FB/DIBH plans were found to be 14.27/36.09 Gy, 50.05/53.89 Gy and 49.69/50.40 Gy respectively. Similarly, the average CTV V95 coverage increased from 93.2% using FB to 96.7% using DIBH.

**Conclusion:** DIBH gating provides a valuable tool to improve target dose coverage while reducing an undesired cardiopulmonary and LADCA dose to left-sided breast cancer patients. Based on the current observations, further investigations are required to individually determine which patients can benefit from the DIBH-technique.

**Keywords:** DIBH, dose, gating

## 1. Introduction

Breast cancer, a malignant tumour, is a common cancer in women in Western countries. Postsurgical breast conserving radiation treatment has been known to improve local tumour control in early-stage breast cancer patients, thus significantly reducing the breast or loco-regional recurrence and the risk of death from breast cancer (Korreman et al., 2003; Whelan et al., 2000; Vinh-Hung et al., 2002; Clarke et al., 2005; Fisher et al., 2002). However, in several trial studies, using both old and recently developed techniques, it has been observed that breast or thoracic wall irradiation to breast cancer patients would increase risk of cardiovascular-related morbidity and radiation-induced pneumonitis. (Nixon et al., 1998; Paszat et al., 1999; Rutqvist et al., 1998; Vallis et al., 2002; Borger et al., 2007; Correa et al., 2007; Hoening et al., 2007; Clarke et al., 2005). An increase in late cardiac mortality among left-sided breast cancer patients has been observed, particularly for the follow up above ten years, and this may

offset any potential survival benefit of treatment (Host et al., 1986; Horner et al., 2008; Darby et al., 2005). Apparently this is clear evidence that cardiac volume is irradiated, i.e. higher radiation dose, correlated with cardiac mortality (Gagliardi et al., 1996; Gyenes et al., 1998), and that the volume of lung irradiated correlates with functional lung damage (Gagliardi et al., 2000; Ooi et al., 2000). These trial studies demonstrate that improvement in radiation treatment outcome is always compromised by the potential risk of long-term complications, i.e. due to the complex geometry of the irradiated structures in the region of the chest wall. The most-known challenging parameters which interfere in achieving the satisfactory treatment output and undesired complications are internal organ displacements due to respiratory motion. Recently respiratory gating of left-sided breast cancer patients has been introduced to radiotherapy to cope with these challenges, namely reducing cardiopulmonary complications. The most commonly used respiratory managing technique is Deep Inspiration Breath Hold (DIBH). As the rib cage and the lungs expand during inspiration, the distance between the heart and chest wall increases. In this approach, we have implemented the DIBH on the left-sided breast cancer patients. The objective is to investigate the impact of DIBH-gating on dose reduction of the surrounding normal organs such as heart, lung and LADCA. Moreover, the target dose coverage by the prescribed dose has been evaluated in tangential field breast radiotherapy.

## **2. Materials and Methods**

### **Patient selection**

Thirteen breast cancer patients, in the period of April to September 2010, were inducted in this study. The patients were referred for adjuvant radiotherapy after breast conserving surgery. The criterion for patient selection in implementing DIBH was left-sided lymph node positive breast cancer. All the patients received verbal and detailed written instruction about the DIBH-Gating procedure, including the objective of the DIBH-method and the main goal of using this technique. The message was delivered to each patient by an expert physician in breast cancer some days before the CT-simulation scan.

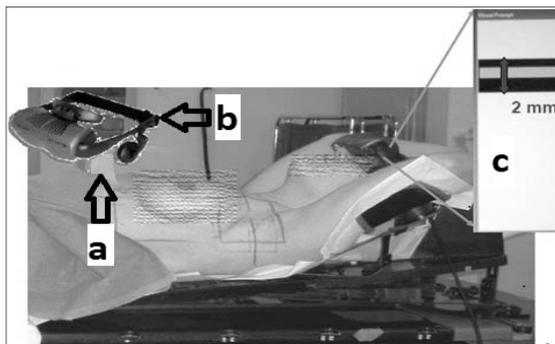
In implementing DIBH-technique, Varian RPM<sup>TM</sup> respiratory gating system, version 1.6, (Varian Medical Systems, Palo Alto, CA), was utilized to monitor and analyze the patients' respiratory cycle. Initially an infrared reflector marker box was placed on the patients abdominal wall out of the treatment field. An infrared camera, fixed on the end of the CT-

couch, and a camera mounted on the wall facing the treatment-couch, tracked and registered the markers' vertical displacement. Thus, the magnitude of anterior-posterior chest wall displacement due to the respiratory cycle was determined. Furthermore, for each patient the intended gating window, i.e. the upper and lower gate thresholds (CT-simulation, and linear accelerator treatment window) and the patients gating amplitude, i.e. the patients DIBH-capacity, were decided individually. All the patients underwent a breathing training session in about 45 minutes with RPM<sup>TM</sup>, prior to the CT-simulation scan. The main aim of this training was to give to each patient the opportunity to be acquainted with the entire RPM-system<sup>TM</sup> and thus establish more stable breathing amplitude, and also to evaluate their breath-hold capacity. Each patient was trained to hold their breath for approximately 20 seconds over several attempts. All selected patients were able to follow the instruction and hold their breath for the adequate time required for the CT-SIM scan and treatment delivery, and thus underwent the DIBH-treatment. During immobilization, the eligible patients were positioned supine (the treatment position) with both arms placed above the head using a breast board device (See Fig. 10.1 below). This immobilization device is used as a standard fixation technique for all breast cancer patients in our clinical site. The patient was guided by audio-visual guidance. The operator was informed the patient when they should hold their breath. Moreover, the patient could manage their breathing cycle into the decided breathing amplitude with visual feedback by means of fixed gamer-goggles.

### **CT simulation and planning**

For each patient a FB and a DIBH CT-simulation scan were performed from the middle of the neck to the upper abdomen in the supine treatment position. The main purpose for acquiring a FB CT-simulation scan was to design a backup for the DIBH-treatment plan. A helical CT scan was acquired for FB with a CT-slice thickness of 2 mm. Before acquiring a DIBH CT scan, several practices were again performed to ensure the reproducibility of the patients' breath hold for the duration of the scan and treatment. During this practice the expected CT-simulation window (used later as a treatment gating window), decided earlier within training session was confirmed. Once the patient was comfortable with the DIBH procedure, the scan was performed.

Fig. 10.1. The patient is fixed in the supine treatment position by means of a breast board, an immobilization device.



- (a) The infrared reflector marker box is placed on the patient's abdominal wall.
- (b) The patient can follow their breathing cycle's pattern visibly with a head-mounted goggles display.
- (c) Here the patient can see their breathing cycle, a horizontal green line, within the treatment window, the dark blue area (Gating window 2 mm).

### **Delineation of target and normal structures**

In Helev, the standard delineation procedure of left-sided breast cancer patients is defined in detail. For the thirteen enrolled patients, after breast-conserving surgery, the remaining mammary glandular tissue was delineated as CTV. The CTV encompasses visible breast tissue and the tumour bed being defined externally by the skin contour and internally by the outer contour of ribs. In our site, the margins included in delineated CTV did not take setup and motion uncertainties into account. These uncertainties were instead taken into consideration while applying larger fields. Structures, such as ipsilateral and contralateral lung, outer body contour, heart and left anterior descending coronary artery (LADCA) were delineated. The heart, LADCA and ipsilateral lung were considered as organs at risk and delineated without any margin. The delineation of the structures was performed by two radiation oncologists specializing in breast tumours using the Eclipse planning system, version 10.0 (Varian Medical Systems). In the case of cavities, the boost region was never closer than 5 mm to the skin (body contour). Since the breast chest wall moving almost in the same magnitude for FB and DIBH (range of 2–5

mm), and the margin accounting for motion uncertainty was chosen to be the same for both FB and DIBH.

### **Treatment planning**

For each patient, and for both CT image sets of FB and DIBH, the treatment plan was performed by one physicist and two technologists. All the treatment plans for both FB and DIBH were optimized thoroughly in such a way that the plan could be sufficiently designed (CTV dose coverage and dose limits to OARs). Eventually, for all the patients only the DIBH plan was used for treatment delivery.

Opposing 6MV tangential fields with multileaf collimators were used. To optimize the CTV target dose coverage, the plan was supplemented by subfields of 6MV and 15 MV, while holding the constraints for the OARs. Since the distance of the heart surface to the chest wall is smaller in the case of FB, the OAR constraints compromised the CTV dose coverage. The breast tangential field plan was prescribed with 50 Gy in 25 fractions. The boost, which was introduced in four patients, received an additional dose of 10 Gy in 5 fractions. All the plans were optimized in such a manner to ensure the institutional prescription goals and treatment criteria were achieved.

For each treatment plan the endeavour was to fulfil the following criteria:

Minimum 98% of tangential CTV and 100% of boost CTV should be covered by 95% of prescribed dose of 50 Gy and 60 Gy respectively. 2% of CTV may exceed 105% isodose line.

The mean CTV dose should be in vicinity of 100% of prescribed dose, and not over 102%.

Hot spots should preferably not exceed 107%. Maximum 2 cm<sup>2</sup> may have over 107% for both boost and tangential CTV.

Since the priority is to maintain the OAR's constraints, the CTV dose coverage might be compromised, particularly in the FB plans. Thus dose to OAR should be kept as low as possible. In the DIBH plan the endeavour is to cover CTV with the prescribed dose, while holding the OAR constraints.

For both FB and DIBH-plans, a Dose Volume Histogram (DVH) was calculated. Obtained dose results were extracted from DVH-histograms to compare dose coverage to CTV and undesired dose to OARs.

### 3. Results

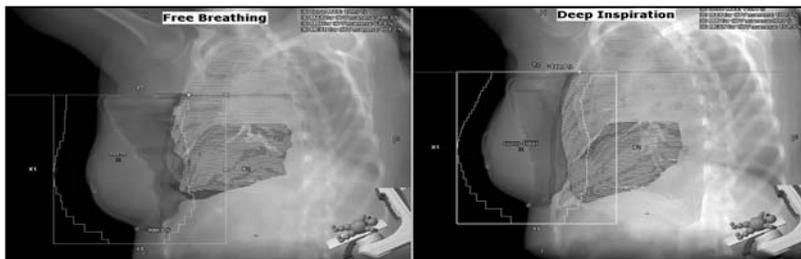
All thirteen left-sided breast cancer patients consecutively completed DIBH treatment successfully. Patient compliance was satisfactory, where all the patients collaborated well and were able to follow the audio-visual instructions. The standardized procedure was arranged in such a manner that each patient had sufficient time, approximately 45 min, for training. During training they had the possibility of being acquainted with the respiratory managing system. The median age of the patients was 55 (a range from 36 to 70). Four of the patients received a boost dose (additional 2 Gy in five fractions) on the tumour bed.

The booking time at CT-simulation for DIBH-gated patients was prolonged by 15 minutes in comparison to non-gated patients. Furthermore, the time extension at treatment room was 5 minutes for using the DIBH-gating technique.

#### Respiration Technique

For all the patients, patient respiratory data and breathing patterns were recorded and archived by means of the Varian's RMP-system<sup>TM</sup>. The mean antero-posterior chest wall excursion, i.e. the mean amplitude of the reflective marker vertical displacement, was 16.8 mm (range: 13.8-23.8) using the DIBH-technique (see Fig. 10.2 below). Furthermore, the mean value of the scanning and treatment window was 2.3 mm (range: 2.0-3.2). Daily treatment fraction was performed in deep inspiration mode and only when the amplitude reached a particular window, decided earlier during CT-simulation scan.

Fig. 10.2. Lateral tangential field (beams eye views) for left-sided breast cancer patient used for planning Free breathing (FB) (left image) and deep inspiration breath-hold (DIBH) (right image).



## Volume

Obtained average values of volume data ( $\pm$ SD) for CTV, CTV ( $V_{95}$ ), boost, Ipsilateral lung, and heart are listed in Table 10.1. Table 10.1 comprises data for used DIBH and FB, respectively. Using DIBH in comparison to FB resulted in volume reduction of CTV and CTV ( $V_{95}$ ) by a relative 4.5% and 2.0%. On the contrary, the DIBH-technique resulted in the volume-increment of the boost (data from four patients) by merely 2.5%. This volume-increment is statistically insignificant due to the low number of patients (four). Furthermore, the CT-simulation scan demonstrates that using DIBH will lead to a considerable increase in the ipsilateral lung volume by approximately 69%, compared to the scan performed in FB.

**Table 10.1 Comparison of volumes for target and organs at risk for Deep Inspiration Breath-hold (DIBH) and Free Breathing (FB) plans for all thirteen left-sided cancer patients. Four of the patients received a tumour boost.**

	DIBH [cm <sup>3</sup> ]	FB[cm <sup>3</sup> ]	Relative[%]
CTV	542.5 $\pm$ 391.2	567.9 $\pm$ 416.4	-4.5
CTV ( $V_{95}$ )	529,7 $\pm$ 391.1	540.5 $\pm$ 418.6	-2.0
Boost <sup>1</sup>	45.7 $\pm$ 22.2	44.6 $\pm$ 20.6	+2.5
Lung	1982.8 $\pm$	1173.8 $\pm$	+68.9
	471.7	248.0	
Heart	630.0 $\pm$ 98.8	646.2 $\pm$ 100.2	-3.5

Source: Data are displayed as mean values and standard deviation.

<sup>1</sup> Data based on four patients, irradiated with boost to the tumour bed.

DIBH, deep inspiration breath-hold; FB, free breathing; CTV, clinical target volume

## Planning

Fig. 10.3 shows the lateral tangential field (beams eye views) for left-sided breast cancer patients used for planning FB and DIBH. Obviously, the DIBH-technique provides a good management tool for moving the heart further from the posterior borders of the tangential fields and thus giving primary potential of tangential field extension, shaping in such a way to cover the delineated CTV by the desired prescribed dose.

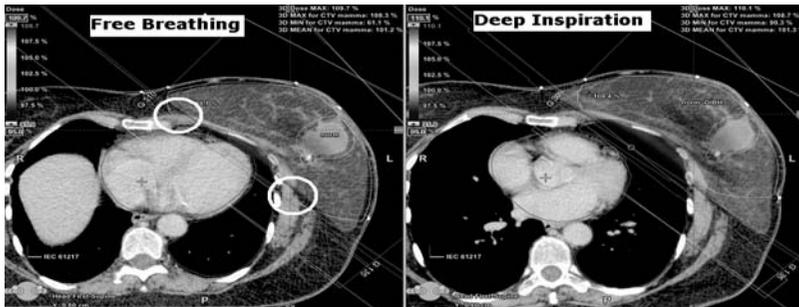
Fig. 10.3 compares the dose distribution of patient number 2 using FB versus DIBH. Clearly, the impact of the DIBH-gating technique is increasing the heart distance to the chest wall. Consequently, the heart

dose decreases radically, giving space for field expansion which in turn improves the CTV dose coverage.

### Ipsilateral lung doses

The impact of the DIBH of left-sided breast cancer patients on irradiated ipsilateral lung volume was also investigated. Initially, the Mean left Lung Dose (MLD) was studied using the planning DVH-histogram. The average value of MLD was reduced from 16.08 Gy using FB to 15.37 Gy using DIBH (barely by 5%) (see Table 10.2 below). Furthermore, the average value of percentage lung volume receiving 20 Gy (V20) was reduced from 16.6% using FB to 15.6% using DIBH (Approximately 6%). Similarly, the influence of using DIBH was observed even for V50 (volume of ipsilateral lung receiving 50 Gy) by 6% reduction, compared to using FB.

Fig. 10.3. Transversal CT-slices shows a comparison of dose colour wash, 95% isodose line, for free breathing (FB) and deep inspiration breath-hold (DIBH). Since the heart border to chest wall distance for FB limits keeping heart dose constraints, the CTV dose coverage will be compromised.



### Cardiac and Ladca doses

The average mean heart dose was insignificantly reduced from 4.17 Gy using FB to 4.06 Gy using DIBH (Table 10.2). Furthermore, the average percentage volume of heart receiving doses of 17 or more (V17) is reduced slightly from 2.9 % using FB to 2.8% using DIBH. Similarly, the mean value of the percentage volume of heart receiving 35 Gy or more (V35) reduced insignificantly from 1.6% using FB to 1.5% using DIBH.

**Table 10.2. Dose of lung, heart, LADCA and CTV in Deep Inspiration Breath-hold (DIBH) and Free Breathing (FB) for 13 enrolled patients.**

	DIBH	FB
Lung (MLD) <sup>1</sup> [Gy]	15.37 ± 1.56	16.08 ± 1.75
V <sub>20</sub> [%]	15.6 ± 1.8	16.6 ± 1.7
V <sub>50</sub> [%]	29.7 ± 3.7	31.6 ± 3.4
Heart		
Mean [Gy]	4.06 ± 1.52	4.17 ± 1.27
V <sub>17</sub> [%]	2.8 ± 1.5	2.9 ± 1.4
V <sub>35</sub> [%]	1.5 ± 1.0	1.6 ± 0.9
Max [Gy]	46.87 ± 3.01	48.30 ± 1.38
LADCA		
Max [Gy]	45.60 ± 3.75	47.25 ± 0.81
CTV		
Min [Gy]	36.09 ± 11.41	14.27 ± 13.40
Max [Gy]	53.89 ± 0.49	50.05 ± 12.66
Mean [Gy]	50.40 ± 0.41	49.69 ± 1.13
V <sub>95</sub> [%]	96.7 ± 2.2	93.2 ± 8.1

Source: Data are shown as mean values and standard deviations.

<sup>1</sup>MLD: Mean Lung Dose for ipsilateral lung;

DIBH, deep inspiration breath-hold; FB, free breathing; LADCA, left anterior descending coronary artery; CTV, clinical target volume

Eventually, the average maximum dose to LADCA was reduced by approximately 4% from 47.25 Gy using FB to 45.60 Gy using DIBH

## Target

Since the main objective of this study was to address the feasibility of improving target dose coverage while keeping the OAR constraints, the minimum, maximum and mean dose to CTV was investigated. Simultaneously, the average percentage CTV volume V<sub>95</sub> was addressed by means of DVHs (see Table 1.2 above). The average minimum dose to clinical target volume was considerably increased from 14.27 Gy using FB to 36.09 Gy. Similarly, the average percentage CTV volume receiving 95% of the prescribed dose V<sub>95</sub> or more was increased by approximately 4% from 93.2% using FB to 96.7 using DIBH. Slight differences in average values of maximum and mean CTV dose using FB or DIBH were observed.

## 4. Discussion

Lately, different techniques have been developed within radiotherapy to target the tumour more precisely while minimizing late radiation toxicity. As breast cancer is a most common cancer type of women, methods of diagnosis and treatment of breast cancer has been a major concern at all time.

This approach confirms that the DIBH-technique is an effective method in radiotherapy to treat left-sided breast cancer patients by more precisely targeting the tumour by prescribed dose, while reducing the dose to the normal organs. Several authors have previously showed that by using DIBH technique, dose to heart and lung volume, particularly ipsilateral lung, can be reduced considerably while delivering radiation treatment to left-sided breast cancer patients (Sixel et al., 2001; Remouchamps et al., 2003; Pedersen et al., 2004; Korreman et al., 2005; Stranzl et al., 2008; Nemoto et al., 2009).

Obviously contouring variations for FB and DIBH scans were expected due to changes in chest wall position and lung volume.

The major difference of this study in comparison to earlier published studies using the DIBH technique is that in our approach a higher priority was given to improving dose coverage of the CTV than dose reduction to the heart, LADCA or lungs, but never exceeding the OAR constraints. This may contrast with other institutions' endeavours by modifying the tangential fields in such a manner to minimize the irradiated heart volume, and compromising the target coverage medially and laterally. For instance, in a comparable study, Vikström et al. (2011) tried to keep equal 95% CTV dose coverage for both FB and DIBH-plans, which obviously resulted in further dose reductions to normal organ structures in comparison to the current approach. Consequently, the insignificant mean heart dose reduction of barely 3% in this study underestimates the extracted values by Visktröm et al., which reports a reduction of up to 55% (reduction from 6.9 Gy (FB) to 5.9 Gy (DIBH)) in the mean heart dose. Korreman et al. (2003, 28) demonstrated a reduction in the median heart volume receiving  $\geq 50\%$  of the prescription dose from 19.2 to 1.9%. Similarly, our mean lung dose reduction using DIBH was barely 6%, compared to Vikstöm's 15%. Stranzl & Zurl (2008, 29) demonstrated a mean lung dose reduction from 2.3 Gy to 1.3 Gy using DIBH. Our result of lung tissue for V50 was a reduction of 16.6% (FB) to 15.6% (DIBH) compared to the previously published results of Nemoto et al. (2009, 8–13) 5% (FB) and 4.3% (DIBH). But our study show that using DIBH will result in increasing the

average percentage CTV volume V95 by approximately 4% compared to the unchanged mean values from Vikström et al.

Our used visual-audio guidance to decide the respiratory amplitude and scanning and treatment window (average value of 2.3 mm) has been confirmed in earlier published papers, to be more stable and reproducible in comparison to using audio or visual coaching only (Vikstrom et al., 2011; George et al., 2006; Cervino et al., 2009).

It is worthwhile to mention that in the current study, the delineation of the structures was performed by two experienced physicians in our site. Thus the inter-observable variation was introduced in the result despite our standardized contouring protocol. Since the current approach was supposed to reflect our clinical reality, this uncertainty was perceived to be acceptable.

In this study the volume of heart and CTV was demonstrated to be smaller in DIBH than FB, which is consistent with previously published reports (8). Apparently, there are patients that may receive a minimal dose to the heart even in FB. These patients obviously have little benefit from the DIBH technique. Benefiting from DIBH is individual and depends on the patient's anatomy, heart shape and location relative to chest wall, and also the patient's inspiration capacity. In this study, we observed that for some of the patients, using the DIBH-gating technique was resulting in considerable reduction of dose to OARs and for some patients the effect was insignificant. This study is not conclusive and therefore further investigation is required to determine what benefits patients may gain from DIBH technique.

## 5. Conclusion

The current approach demonstrates the impact of implementing the DIBH technique in improving target dose coverage of left-sided breast cancer patients while reducing the dose to the normal structures. Observations from this study are not sufficient to be conclusive and therefore further studies are suggested to enable the individual evaluation of what benefits patients may gain from the DIBH-gating technique.

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## CHAPTER ELEVEN

# THE IMPORTANCE OF SATISFACTORY CLINICAL ENCOUNTERS IN HEALTH OUTCOMES AND PATIENT SATISFACTION

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### **Abstract**

Since clinical encounters between patient and healthcare providers are the first step in the diagnosis and treatment procedure, a satisfactory contact is essential. Ingredients that are necessary for an adequate encounter are often highlighted, and professional and caring attitudes and empathy are frequently mentioned in this context. The caring attitude implies a talent to bring about respect and esteem to the patient. The patient usually has less power than the provider and is dependent on the knowledge and competence of a staff member. A trustful co-operation needs to be aimed at and the self-esteem of the patient must not be diminished. The caring attitude also involves common civility like greeting each other in an equal way, introducing oneself properly, taking time and not interrupting unnecessarily. Empathy means the capacity to identify and understand another person's situation, feelings and motives and then be led by these feelings in caring for the patient. Empathy is a core element in a good encounter, and intellectual components must also be integrated into the process. Time is one of the most significant problem areas in the clinical communication consultation. Thus, lack of time might force the healthcare provider to shorten the patient interview, resulting in stress and incomplete information exchange.

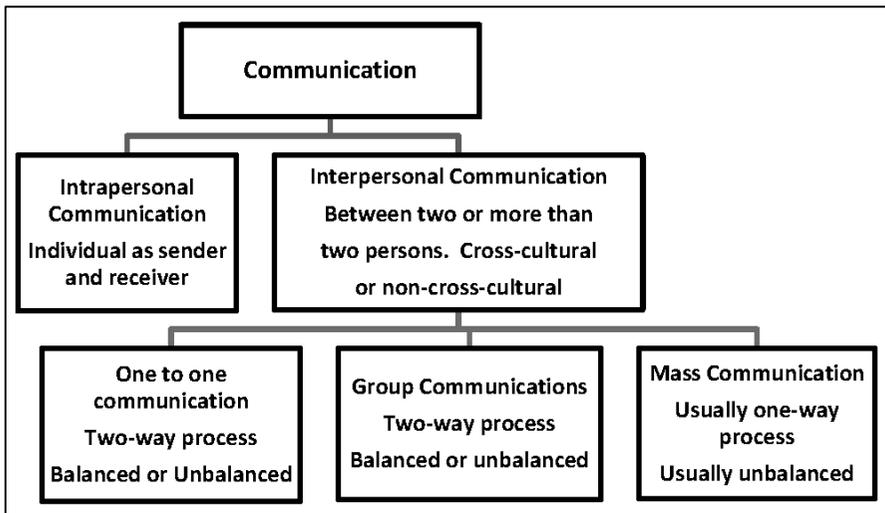
## 1. Introduction

Communication has been defined as “the sharing of experiences (Tubbs and Moss, 2003), and language is the most important tool for exchange of messages in interpersonal verbal communication. In this context, when talking about human communication language is normally in focus (Oblander, 1977; Cassell and Skopek, 1977). Human communication may take place in the following forms:

- Intrapersonal communication
- Interpersonal communication
- Group communication
- Mass communication

The above-mentioned communications may occur within one cultural entity, or constitute cross-cultural communication (Berry, 2007; Ho et al., 2008) (see Fig. 11.1 below).

Fig. 11.1 Different forms of human communication<sup>6</sup>



Intrapersonal communication refers to reflections within oneself, and writing or talking to oneself, and contains none or little inter-cultural communication element. At the same time, mass communication usually has an unbalanced power relationship between sender and receiver, while one-to-one

communication and group communications can be balanced or unbalanced. Communicative relationships within hierarchies (such as the military) and in relationships with an element of dependence, such as the doctor-patient relationship, tend to be unbalanced as regards power. As this article is dealing primarily with interpersonal communication (patient-physician), this issue is in focus (Fatahi and Fatahi, 2010). During recent decades, the role of sociology and psychology is more involved in clinical settings, and the context factors that influence these issues must be in focus in clinical communication. (see Wallin and Ahlstrom, 2006; Small et al., 1999; Wu et al., 2006; Harmsen et al., 2006; Schouten and Meeuwesen, 2006). Therefore, communication influences our everyday life, and in this way studying this issue is to study human cultural, psychosocial and psychological issues. As communication is an open system it may be influenced by factors such as interpersonal relationship, environmental factors, the circumstance of the interaction, the psychological state of sender and receiver, sex, age of sender and receiver as well as their qualifications, and the mode of communication (Von Raffler-Engel, 1988). The development of modern theories on communication in today's modern society is more important than before, and in this context more studies are needed (Malmberg, 1963).

## 2. Communication Theory

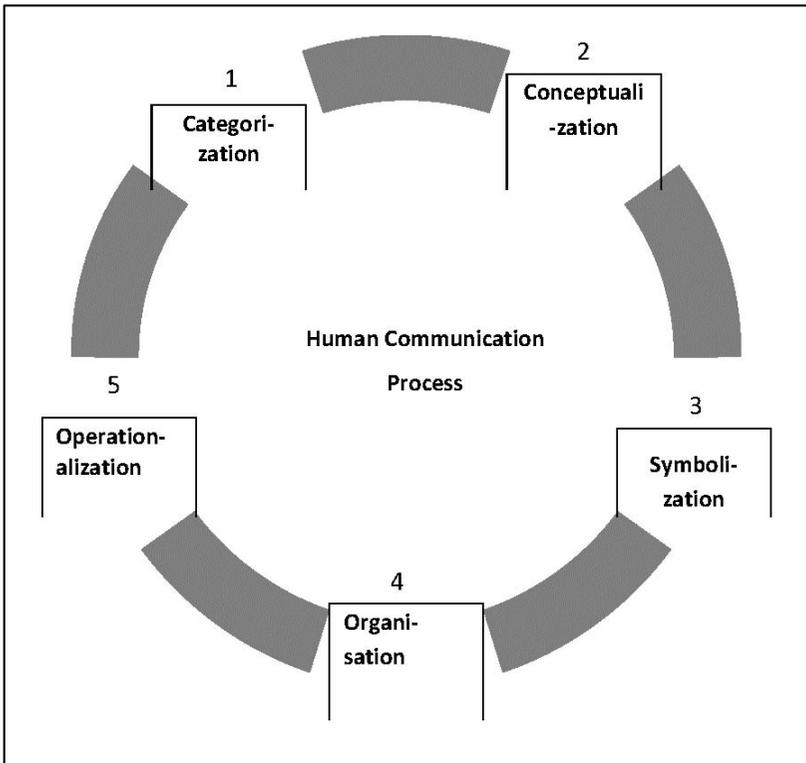
According to the obtained document, the history of human communication theory can be traced back to the fifth century B.C. The development of communication theories happened over three periods: the historical period (500 B.C. to 400 A.D.), the medieval and renaissance periods (400 to 1600) and the modern period (1600 to present). The first stage of this development began with Greek and Roman theories, and has been developed into a "five-part paradigm" (see Harper, 1979) (see Fig. 11.2 below).

Consistent with this paradigm, the human communication process contains five phases. The first, "categorization," has been considered as a basic stage of the process. Through our senses—sight, hearing, touch etc.—we perceive, learn, store and classify data, recalling relevant data and transforming it into information that constitutes the message in the light of the prevailing communication situation.

The second phase, "conceptualization" (making sense of data), or the process of discovery of relevant information, is an important step since at this stage of the communication process interpretation of information takes place. Conceptualization can be considered as both an objective and a subjective process, in terms of discovery of the relevant information and

the creation of information. In the conceptualization process, the sender must be aware of the receiver's values, beliefs, attitudes and cultural background. This issue is very important in patient-physician communication. Recalling relevant data and transferring it into relevant information in the light of the prevailing situation for an immigrant patient is dependent on their stored data and the patient's ability to transfer it into information in relation to the actual situation. Cultural diversities and patient healthcare literacy level are two factors that influence the communication process (McCray, 2005; Williams et al., 2002).

Fig. 11.2. Paradigm of human communication, specified for areas of research and theory construction.



Source: Harper (1979)

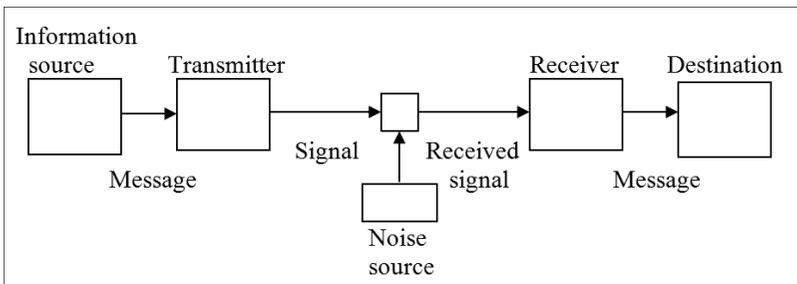
The third phase is Symbolization, the “cognitive representation of ideas in suitable symbols”<sup>14</sup> (phase 3), which is important in the human communication process, both for the sender and the receiver. This phase

holds words, action and artefacts of symbolic value, i.e. how one speaks, dresses and behaves (e.g. body language). In selecting symbols for interpersonal and intercultural communication, body language has an important role as about 65% of our messages are non-verbal (Eriksson, 1986).

After the symbolization phase the process of arranging and organising the information is begun (phase 4), as well as sending a message, which depends on the communication subject and relationship between the communication sender and receiver. The structure of the message that is sent is essential; ideally it should have three components, an introduction, a body and a conclusion (Harper, 1979). A well-constructed message makes it easier for the communication partner to understand it. The form of the message plays a significant role in how the receiver understands the message. If the message is sent in a physical form, such as a film or a book, it may be understood differently from a message delivered by oral communication, or by a combination of oral and visual communication.

In order to describe and explain the process of human communication, during the nineteenth century a number of communication models were developed. An early model that specified the elements in the communication process are the Shannon-Weaver model (see Fig. 11.3 below), which is a well thought out universal model for all forms of communication (Shannon and Weaver, 1949). According to this model, the communication elements are the source of information (sender's brain), transmitter (sender's vocal organ), channel (receiver's ear), and destination (receiver's brain).

Fig. 11.3. The Shannon-Weaver linear model of communication<sup>18</sup>



According to the Shannon-Weaver model, the interaction between sender and receiver is considered an active sender with a passive receiver. However the nature of human communication is a more complex process than that provided by the model. Human communication is a mutual activity and the sender is certainly affected by the receiver, both in verbal

and non-verbal forms. The linear model has been criticized as an inadequate model for human communication, and an alternative circular model of human communication has been suggested (see Fig. 11.4). (see Noth, 1990)

In the transferring of this circular model to clinical medical situations, the concept of patient-centred medicine will be of interest. This term was originally introduced by Enid Balint as “understanding the patient as a unique human being” and an application of patient-centeredness requires a constant interchange of communication between provider and patient (Balint, 1969). The patient-centred attitude implies the exploration of both the disease and the illness experience, understanding the whole person, enhancing of the relationship and finding the common grounds in the consultation. The alternative to patient-centred medicine, a disease-centred medicine, on the other hand, is characterized by a “doctor-centred” style, signifying questioning by the doctor and less of a dialogue in the encounter (Lint, 1957). The doctor-centred style is also labelled as a “police-detective” style (Yme and Long, 1976), which means that the communicative process is mainly pointed in one direction—from the provider to the patient. Patient-centred communication is helpful in building a working alliance with the patient and a tool for mediating the provider’s professional competence to the relationship.

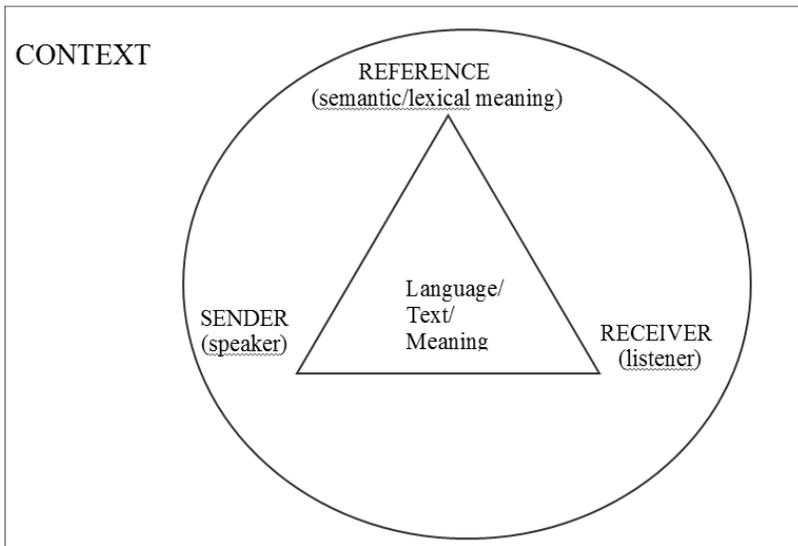
In a circular model of communication, the path of signals, i.e. the flow of information, is in constant movement in two directions between sender and receiver. Therefore, the circular communication model is a more appropriate model concerning medical encounters, because human communication is a process of production and exchange of meaning between speaker and hearer (Fig. 11.4). (see Buhler, 1985) Additionally, the key elements in the model are signs and language codes and partners in medical encounters exchange messages specific to this context, as well as medical issues. (see Nessa, 1999)

### **3. General Practitioner Patient Communication**

Since a satisfied communication between general practitioner (GP) and patient in clinical encounters has a significant role for the quality of health outcome, research in this area has been in focus during the last three decades. Many international published studies (Schiavo, 2007; Hagihara and Tarumi, 2006; Stebbing et al., 2007; Jackson, 2005; Magauran and Brennan, 2005; Suarez-Almazor, 2004) have indicated that a certain level of GP-patient communication improves their respective satisfaction, the patient’s quality of life, the treatment processes and the

clinical results. A clinical communication between patient and GP is the first step in the diagnosis, as well as the treatment procedure, and therefore a satisfactory contact is essential. In this way, an attempt to develop a satisfactory model for clinical consultation generally (Hantho et al., 2002), as well as in the explicit topic (Lubrano et al., 2010) (consultation through interpreter), has been in focus during recent decades. Ingredients that are necessary for an adequate encounter are often highlighted and professional and caring attitudes and empathy have frequently have been addressed in this perspective. (see Ottosson, 1999; Stumberg, 2009)

Fig. 11.4 The Circular Communication Model illustrating the interchange between sender and receiver and reference (the message and its meaning)



Source: Nessa (1999)

A professional attitude is referring to the ability of the healthcare provider not to be directed by own needs and feelings but instead be focused on issues that benefit the patient. A GP's need to be popular or to be authoritative can for example be destructive in the relationship and cause problems. The caring attitude of humanity implies an ability to bring about respect and esteem to the patient. The patient has usually less power than the GP and is depending on the knowledge and competence of a staff member. A trustful cooperation needs to be aimed at and the self-esteem of the patient must not be diminished. The caring attitude also involves

common civility like greeting each other in an equal way, introducing one self, keeping in step with the patient in the corridor, taking time and not interrupting unnecessarily. Empathy means the capacity to identify and understand another person's situation, feelings, and motives and then be led by these feelings in the caring for the patient. (see Fatahi and Fatahi, 2010)

Sympathy is a core element in a good encounter and intellectual components must also be integrated in the process. Empathy is reflected in the adaptation of the treatment or caring of the patient. (see Fatahi, 2010)

The patient usually has the most difficult position in the short encounter. A more or less pronounced fear for the illness itself is accompanied by the experience of being in an unfamiliar place, meeting unknown persons among the staff and uncertainties about the treatment and other consequences of the consultation. The importance of giving adequate information, the meaning of touch, being honest, respectful and present, giving time and being aware of the power structures are significant elements. (see Andersson et al., 1993) A longer consultation would usually result in better knowledge about the communication partner and would enhance understanding. However, for economic reasons, clinics are today ruled by time scheduling rather than the patient's actual need for consultation. Therefore, clinical encounters are characterized by short consultations in order to see more patients in a defined time period (Stumberg et al., 2009) Previous studies showed that consultation times differ between countries and are also associated with the physicians' attitude and the nature of the health problem and that it is also affected by many other factors such as culture, gender, age, environment and level of education. (see Kowalski et al., 2009; Street et al., 2008; Rundqvist, 1999)

Due to the limited time available in clinical encounters, openness and a good consultation technique are essential in establishing a good relationship with the patient, particularly when linguistic and cultural barriers are at hand. Time shortage in the clinical encounter often results in stress, a situation that may lead to misunderstanding and mistrust, which are obstacles to establishing a good relationship with the patient. Therefore, all additional hindrance factors should be avoided. If something goes wrong in the communication, it is usually difficult to repair during the scheduled time. According to a recent study, the mode of communication and GP behaviour during the clinical encounters has a significant impact on the GP-patient relationship (Waitzkin, 1991). A patient who communicates with a GP and asks for help brings not only a physical problem, but also a social context, which characterises the relationship at work, in the family and in the community. Pain and

pathology affect more than body, and to pay attention to patient's physical and psychosocial aspects during the doctor patient encounters has a significant impact on the health outcome (Ogden et al., 2004)

#### **4. The Short Encounter**

The scheduled time for clinical consultations in relation to the period of illness experienced by the patient, particularly in cases of chronic disease, is often shorter than the patient's subjective need of communication. The consultation time in Sweden is 20 minutes, but in Kurdistan there is no considered time for patient-GP encounters, and it is often less than 10 minutes. Furthermore, health literacy in the Kurdish society is much lower than Swedish society. Additionally, the patient integrity, which is an important issue in this context, is rarely in focus in the patient-GP encounters in Kurdistan. In today's Kurdish society there are many physicians from other part of Iraq, as well as thousands of people that don't have the Kurdish language as their mother tongue. This dissertation encompasses mainly studies that are characterized by short meetings between the provider and the patient, in settings requiring cross-cultural communication, often through a third person (the interpreter).

This adds complexity to the short encounter, and difficult interactions will therefore easily appear, and these conditions make heavy demands on all participants. If miscommunication occurs, it is often difficult to reconsider actions and steps that have been taken, and the consequences may sometimes be long lasting. A frequent objection to primary care in general is the shortage of time in the consultations and the lack of continuity in the provider-patient relation (Von Bulzingslowen et al., 2006). Yet, primary care consultations in Sweden are comparatively longer than in other European countries at about 15 to 20 minutes on average (Ster et al., 2008; Andersson and Mattsson, 1989)). The quality of the encounter is also associated with the physicians' attitude, the nature of the health problem and factors such as culture, gender, age, environment and level of education. A short consultation implies the special requirements of the persons concerned, and the possibility to establish a deeper relationship is limited. The starting point in the encounter is often that the persons are unknown to each other. Many facts and ideas need to be sufficiently elucidated during a time before decisions are made and actions can be taken. Of course, the possibility of displaying necessary attitudes and empathy are under threat when consultations tend to be hasty. Important decisions, difficult to revise, are sometimes made on insufficient underpinnings.

## 5. Gender Perspective

The issue of gender in consultation is an obvious problem in Kurdistan. A gender perspective is of interest when terms of equality are in focus. In this context, the consultation issue must be more difficult for females in Kurdistan as a result of the unequal footing between men and women. Gender bias is defined as an inconsistency between women and men that is rooted in a society and its culture (Kowalski et al., 2009; Street et al., 2008). Social and cultural dimensions such as ethnicity, age and social class exist at the same time and these features, including gender, interact and are bound to each other in a dynamic interaction (Rundqvist and Severinsson, 1999). Since a common position in the consultation is the dominant (male) power, this issue is more obvious in Kurdistan as a result of the unequal value between men and women.

The patient usually has the most difficult position in the short encounter. A more or less pronounced fear of the illness itself is accompanied by the experience of being in an unfamiliar place, meeting unknown persons among the staff and uncertainties about the treatment and other consequences of the consultation.<sup>6</sup>

Therefore, giving adequate information to patients, being honest, respectful and present, and giving adequate time and being aware of the power structures, are elements of significance for the healthcare provider (Stumberg and Cilliers, 2009)

## 6. Conclusion

A longer consultation time and patient-centred encounters would usually result in better knowledge about the communication partner and would enhance understanding. Unfortunately, for economic reasons, today's clinics are ruled by time scheduling rather than the patient's actual need for consultation time.

Because of the limited time available in clinical communication, GPs' openness and a good consultation technique are essential in establishing a good relationship with the patient. Time shortage in the clinical encounter often results in stress, a situation that may lead to misunderstanding and mistrust, which are obstacles to establishing a good relationship with the patient. Good relationship would lead to patient confidence in the GP, which is essential in the treatment process. Therefore, all additional hindrance factors should be avoided. If something goes wrong in the communication, it is usually difficult to repair during the scheduled time.

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## CHAPTER TWELVE

# REHABILITATION AND THE COMPUTERIZED PROSTHETIC CENTRE OF KURDISTAN

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### **Abstract**

There is a growing population base in Kurdistan and the surrounding nations that suffer from injured joints and amputations. This is a demographic that requires special attention and treatment in order to allow them to return to a fulfilling and productive lifestyle. This project's goal is to create the Rehabilitation and Computerized Prosthetics Center of Kurdistan, a facility that attends specifically to this rather large patient demographic.

This initiative requires attention towards three main points to be successful. The first is that it will require a centre that is well stocked and well-built, with top-notch surgical and large, ample rehabilitation facilities. The second is that technology in surgery, prosthetics and rehabilitation must be innovative and state-of-the art. The third is that faculty must be extremely well trained in the latest techniques of their practices.

If these points are attended to then this venture will provide benefit for three major groups. The patients who are treated here will receive the best possible care that they can obtain from anywhere, and they will end up

with a much improved quality of life. The groups who invest in this centre will see their money returned and profits quickly made. The doctors and therapists who practice here will be utilizing the very latest technology in their fields, and the students they train will receive a very unique educational experience.

### **Purpose**

The primary objective of this mission is to create a facility that offers a much higher quality of care for a unique population of patients with minimum expense. The main purpose of this project is to bring a completely cutting-edge, highly advanced centre of orthopaedic medicine and amputee care and rehabilitation to the region of Kurdistan. There is great benefit to be found in serving the already large, and still growing, amputee population of this area.

While treatment options are available here, they are not designed to actively bring these patients back to the most valuable physical state possible after their injuries. This venture seeks to found a facility that proactively implements surgical and rehabilitation techniques that are focused on restoring the health and functionality of amputee patients and patients of orthopaedic surgeries, such as joint replacement surgeries.

This facility will serve as a flagship orthopaedics clinic. It will cater to patients requiring amputations and orthopaedic surgery outpatients, and it will serve patients regionally, nationally and internationally. The facility will go above and beyond the current standard of care by using new innovative techniques in surgery, and by implementing thorough rehabilitation techniques designed to allow patients to return to fulfilling, productive lives.

## **1. Introduction**

The extremely prominent hazard of landmines in Iraq dates back to the 1960s. Abdul Karim Qasim, leader of Iraq at the time, employed them in his crushing of the Kurdish rebellion to prevent the Kurds from gaining autonomy, peppering the land indiscriminately with deadly landmines (Salaheddin 2011). There are also landmines present in the region from the 1980s Iran-Iraq War, due to the actions of Saddam Hussein (Salaheddin 2011). As a result, the threat of landmines has created an enormous impact on the welfare of the Kurdish people and others in Iraq and the surrounding nations and regions.

As of 2012, there are still approximately twenty-five million active landmines in Iraq, which will cost roughly \$12 billion dollars to clear (al-Iraq 2012). Efforts to clear Iraq of all these active landmines have been ongoing, but are slow because of staff shortages and the dangerous nature of the job. According to the Iraqi government, the goal of having a completely landmine free Iraq by 2018 will not be met (IRIN 2012). Iraq is currently one of the most landmine-contaminated countries in the world (al-Iraq 2012), and a large proportion of these explosives are located in the Kurdish region.

Landmine injuries can be fatal, and non-fatal injuries cause severe and debilitating damage (Soroush et al. 2008). Research on the effects that these landmines have on the civilian population reveals some disturbing facts. Between 1988 and 2003, 1,499 people in Iran required amputations due to landmine injuries; 33.1% of these victims were from Kurdistan (Soroush et al. 2008). Between July 1998 to July 2007, 285 patients were admitted to the Emergency Management Centre in Erbil with landmine injuries, 96.84% of whom were civilians (Shabila, Taha & al-Hadithi 2010). These injuries required limb amputations in 71.9% of cases (Shabila, Taha & al-Hadithi 2010). Half of the total number of landmine victims were between the ages of 19 and 35, when most people are at their prime physical condition (Shabila, Taha & al-Hadithi 2010). These numbers only include patients who were admitted to the Erbil Emergency Management Centre, no other medical centres; had landmine patients admitted to other medical centres been included, the numbers would, in all likelihood, paint an even grimmer picture (Shabila, Taha & al-Hadithi 2010).

The high frequency of landmine injuries in this region, and the high proportion of these requiring amputations, mean that the population of amputees in the Middle East has grown immensely, especially among Kurdish veterans and civilians. A large portion of amputees have difficulties in their mobility, either due to a lack of any type of prosthesis or because the prosthetics that are currently available do not provide adequate stability when performing everyday tasks. The kind of care that these suffering people receive is incredibly disappointing thus far. The victims of such injuries and disabilities deserve the highest level of treatment that can possibly be offered. It is the goal of this project to address the most important facets of this problem and to provide a solution that will bring benefit to the patients, the groups who fund the project, and the people who invest their time and knowledge in running the project.

This is a multi-faceted issue with social and economic implications. Victims of landmine explosions and other traumas who have lost limbs

have a hard time providing for their families. Not only do they lose the ability to provide for their families, but also communication becomes challenging. It becomes more difficult for them to interact with their families and friends on a day-to-day basis. Many of these victims become unable to work, and consequentially employers lose a valuable work force. Surely, there is a plethora of methods by which to alleviate the burden that these incidences and their ensuing damages place on individuals and families. In order to provide the best possible care and improve the quality of life among this population, we have identified two major needs that must be addressed and fulfilled.

The first requirement in facilitating faster acclimation to mobility with prosthetics is to construct a state-of-the art prosthetics lab and clinic. Amputee patients require a medical centre that is supplied with quality prosthetics that utilize the most up to date and advanced technology. Providing access to excellent prosthetics alone, however, is not enough to ensure that patients are receiving an excellent standard of care. Amputee patients will also require full facility-rehabilitation services that will promote a speedy recovery and allow the best possible capability in daily tasks.

The second requirement in addressing the needs of amputees, and of the general population of this region, is a well-equipped orthopedics surgical centre. Injuries to major joints such as the hips and knees, which are also common amongst victims of landmine explosions, along with ailments such as osteoarthritis that are more common amongst the elderly, are also health issues that drastically reduce quality of life and productivity. Recent advances in health care in Kurdistan allow people to live to an older age, thus increasing the demand for joint replacement surgeries for improved mobility and overall quality of life. Landmine patients who do not necessarily require amputations for their injuries will generally need some sort of orthopaedic treatment to fix broken bones or damaged joints. Patients requiring amputations also need to have well-trained surgeons with access to state-of-the art surgical technology available to perform these extremity surgeries.

The creation of a flagship clinic in Kurdistan that combines a high-tech orthopaedic surgical centre with access to cutting-edge prosthetics options and innovative rehabilitation services will benefit the patients, the groups who invest in the clinic, and the doctors and students who operate the centre. The next point of discussion is the means to fulfilling this goal.

## 2. Methods

There are, perhaps, many different ways by which these two necessities can be fulfilled. This project is designed from the viewpoint of a physician and the scope of delivering high quality healthcare to a deserving population. The primary objective kept in mind while creating the means to the end is that any patient who is treated at this centre should receive treatment that will provide them with a lifelong solution to their dilemma. The strategy to satisfying the aforementioned requirements involves three main points: the facility, the technology, and the faculty. Providing strong resources towards these three points and creating fluid integration between all three are essential to success.

The first point to be addressed is the quality of the centre itself. The surgical facility will require at least two well-equipped operating rooms, a minimum ten bed clinic, and large receiving and recovery rooms. The operating rooms will be of a functional size and fitted adequately with sterile equipment, proper ventilation and computerized surgical navigation systems. Surgical procedures are always best conducted when the proper equipment is readily available, and the environment is conducive to optimizing performance; as such, properly stocking the operating rooms with the best supplies is essential. The rehabilitation lab must be spacious with a large gymnasium for patients to comfortably practice rehabilitation exercises. Once again, an area that is designed for optimizing output is necessary. Patients need to feel comfortable practicing and implementing their rehabilitation regimens. The gymnasium will be furnished with a new, versatile therapy exercise equipment and various therapeutic sports facilities, such as a pool and arenas for organized sports.

State of the art technology is imperative, both in surgical equipment and in prosthetic design. Computer navigated surgeries utilize a minimally invasive technique. Our technique cuts no muscle at all, which means that patients will recover faster and become ambulatory much sooner, compared to traditional surgeries. These minimally invasive procedures also greatly reduce scarring, which is another point that patients will appreciate. The primary choice of computerized navigation software for performing the various non-amputation orthopaedic surgeries is Aesculap's OrthoPilot Navigation System.

The OrthoPilot Navigation System is one of the world's top performing solutions for minimally invasive orthopaedic surgeries. The OrthoPilot Navigation System software is available for many different types of surgeries including total hip arthroplasty, ACL reconstruction, and total knee replacement (Aesculap 2012). OrthoPilot's HipSuite software allows

the surgeon to position acetabular and femoral components of the hip implant in such a way that the offset, leg length and range of motion can all be determined before the final implantation (Aesculap 2012). The results of the implant can be simulated before the final implanting is conducted, using this software (Aesculap 2012). According to a 2008 study, the computerized data collection of intraoperative variables allows surgeons to: “develop intraoperative alignment targets most likely to yield positive clinical and patient-perceived functional outcomes” (Stulberg et al. 2008). In addition, adhering to the goal of utilizing minimally invasive surgical procedures, the OrthoPilot Navigation System will help to improve implant positioning even under a reduced field of vision, as is typically the case with minimally invasive surgeries (Aesculap 2012).

The OrthoPilot Navigation system also works particularly well with implants such as Aesculap’s Columbus Knee System. The Columbus Knee System is a state-of-the art knee implant that can be used for total knee arthroplasty or for revision surgeries, if need be. The Columbus Knee System was compared in a clinical study against a competing computer aided surgical system and implant, the NexGen Full Flex implant (Goebel & Schultz 2012). While both performed well, the study concluded that the Columbus Knee System can be recommended for total knee arthroplasties to achieve flexion angles up to 140° (Goebel & Schultz 2012). The study was conducted over a four-year period, and over this time the Columbus Knee System demonstrated no signs of loosening (Goebel & Schultz 2012).

Amputee patients will have access to computerized prosthetic options. These types of prostheses demonstrate superior stability over traditional prostheses, and allow for a much wider functional range of motion. Companies such as Ossur and Otto Bock produce incredibly sophisticated computerized knee prostheses. Otto Bock’s C-Leg is a knee prosthesis that utilizes a powerful microprocessor-controlled hydraulic system (Otto Bock 2012). According to Otto Bock, these computerized knee prosthetics take readings from many different sensors at a rate of fifty times per second, and so can make adjustments to match the user’s gait in real time. Ossur’s Symbiotic Leg consists of computerized knee prosthesis and powered ankle/foot prosthesis (Ossur 2012). The combination knee/ankle prosthetic system provides increased stability and fluidity in movement, and allows up to 120° of smooth flexion (Ossur 2012). In cases where computerized prosthesis are deemed not to be the best option for a particular patient’s needs, well-designed manual prostheses from top companies like Ossur and Otto Bock will also be available. Ossur’s hydraulic Mauch Knee is a strong contender for patients who will maintain a more active, high-impact

lifestyle (Ossur 2012). Though the computerized prosthetics like the C-Leg do reduce the cognitive burden of walking with an artificial limb, manual prosthetics like the Mauch Knee can be adequate in many situations (Williams et al. 2006); the decision will depend on the knowledge of the physician, preference of the patient, and what will ultimately yield the best results.

The facility will be operated by highly-skilled physicians from the United States of America with co-operation from the local health providers. These will be mainly doctors and therapists who are specially trained to run such a centre. Surgeons must be fully capable of working with new computerized navigation systems and well versed in amputation techniques. Therapists must be knowledgeable in applying the latest techniques in physical therapy for patients. The idea is to operate the facility as a teaching hospital. Experienced physicians and therapists will also perform teaching roles at the centre, and there will be hands-on rotation opportunities for surgeons and therapists in training. The nature of their educational experiences will be such that they are integrative with the experiences of their peers. The importance of special training here is that co-ordination between surgery, prosthetic design and rehabilitation is the key to a faster and higher yield of successful mobility in patients. There will be a team approach between surgery and rehab, so that a personalized post-op rehabilitation plan can be designed for each patient. Likewise, there will be a team approach between prosthetic design and rehab, so that the kinematics of each prosthetic can be incorporated into the rehabilitation plan. (see Table 12.1 below)

**Table 12.1 A rudimentary budget estimate for the project**

Item	Cost
Orthopilot Navigation System	\$147,569.67
Columbus Total Knee System	\$332,992.45
Biocontact/ Plasma Cup Total Hip System	\$210,885.47
Training	\$10,000.00
Annual Service	\$7,000.00
Amputee Clinic & Prosthetics Lab Estimate includes:	\$300,000
• Equipment	
• Training	
• Supplies	
• Staff	
<b>Total Cost</b>	<b>\$1,006,447.60</b>

### 3. Results

The above-mentioned methods for tackling the issue at hand are designed to create a centre that will benefit not only its patients, but all the people who are involved in its creation and functioning. The following discussion of the potential results from the successful execution of this project is by no means exhaustive, but merely the points that we have predicted and deemed to be most worthy of presentation. By following the fundamental tenet of providing superior quality of care to patients, we can ensure that the patients' satisfaction will be maintained and that the hard work of the people running the centre will be rewarded. This project will yield positive results for three important groups: patients, investors and physicians.

First and foremost, the patients who are treated in this facility will receive an excellent quality of care. Because of the emphasis on co-ordination and communication between the surgical, rehab and prosthetic design teams at this facility, patients can expect to return to normal everyday life much faster and more steadily than from treatment anywhere else. Very specific prosthesis designs and rehabilitation plans can expedite recovery, and highly-skilled physicians and therapists can ensure quality treatment for them. Because this centre is created with a very specific demographic in mind, more time and resources can be focused on providing extremely well-delivered care through a narrow and deep approach.

Not only will patients be able to perform everyday tasks again, but the cutting edge technology in surgeries and prosthetics will ensure a high survival rate for their prostheses and implants, so they can retain their peace of mind. This project will not only benefit patients medically, but it will also help them emotionally. With better medical care, patients feel a sense of security and trust in the institution and the groups who support it. A feeling of safeness contributes to healing the psychological damage that traumatic injuries can incur.

Second, this facility serves as an excellent place for investors to place their money. This centre will supply a solution to a steadily growing demand in the region. The population that will benefit most from such an establishment is growing, and the high quality of care will attract patients regionally, nationally and internationally. This means that there will be a large patient base that is seeking the kind of specialized treatment provided by this facility. It will generate revenue for both private and government investors, because patients themselves are willing to invest more money in high-quality care. By using a simple net benefit calculation, we can provide the potential for profit. The World Bank record

from 2011 shows Iraq's lending interest rate to be 13.6% (World Bank 2012). If we use an estimated initial cost of one million US dollars (see Table 12.1), and a reasonable yearly income estimate of US \$380,000, then the net benefit calculation shows that it will take a mere three years for the clinic to return the initial investment and start making profit. This is a short period for such a costly endeavour to become profitable, and it may be even less than this because it is possible that the yearly income of this clinic will be greater than US \$380,000.

Money that is used to fund and support this centre is not just an investment in the wealth of the investor; it is an investment in the wealth of the region as a whole. A study on chronic pain in landmine victims surveyed 57 patients, 1 year after the incident, and found that 85% of the subjects' families suffered from severely deteriorated economic standing (Husum et al. 2002). The study, in fact, found a positive correlation between patients' loss of income and rate of chronic pain syndrome (Husum et al. 2002). While this study only surveyed a small sample, it highlights the economic benefit of this specialized orthopaedics and rehabilitation centre for the region as a whole. The advanced treatment, specialized to treat the kind of patients that the Husum et al. (2002) study surveyed, will allow amputee patients and patients suffering from other kinds of injuries to be rehabilitated far more successfully. This means that they will hopefully suffer from far less chronic pain symptoms, and thus be able to go back to work and maintain their family's standard of living.

From an economic perspective, we can consider the impact on citizens who are unable to work due to their disabilities or injuries in terms of the effect on GDP. In Soroush et al.'s (2008) study, the mean age of landmine victims is 23. About 33.1% of the 1,499 amputees in the study were from Kurdistan, that is approximately 496 Kurdish amputees (Soroush et al. 2008). The 2002 Husum et al. study showed the large majority of its subjects as having a very poor economic standing after their incidents. To highlight the economic impact that disabled victims have on GDP, we shall assume that all 496 Kurdish amputees are in Iraq, and have been unemployed since their amputation. Using the 2011 CIA World Fact Book record for the per capita GDP of Iraq (US \$4,200) and an average retirement age of 65, we calculate for this 496 member population that Iraq's total GDP is diminished by a little over two million US dollars every year for 42 years; that is an eighty-four million dollar total loss in GDP from that amputee population. While this described situation is hypothetical, and would affect states besides Iraq, it is based on real potential and showcases what can be gained when these patients have access to treatment that can greatly reduce the obstacles that hinder them.

When these patients are able to successfully get back to working, earning money and increasing output, the entire nation will benefit.

Third, there is a great educational opportunity here that is made available by opening up the clinic as a major teaching centre. Clinical rotations and teaching opportunities will be available to medical students, new doctors and surgeons. Orthopaedic surgeons in rotation will be trained from the start to use minimally-invasive surgical techniques via computer guided navigation systems. This is a unique opportunity for hands-on training in very specialized, high-demand techniques. In this way, they can be trained to operate and work in this facility itself, to ensure that patients will continue to receive treatment from people who are highly skilled, and be well trained in providing the kind of care that they are seeking. It is also worth mentioning that the clinic will require non-medical staff to maintain its smooth operation, clerical needs and hygienic environment; this means that the clinic will create employment opportunities for many people in the area, again increasing the wealth and prosperity of the population in general.

The potential results of this project are tremendous, and affect a diverse array of people. Everyone, from the patients who seek treatment at the clinic, to the physicians and students who run the clinic, to the investors who allow this project to take off, will benefit from it. More than likely, there are additional positive outcomes that may result from the success of this clinic that have not been discussed in this proposal. The great value that these three major groups take away from the carrying out of this project stands as a reason to move forward and turn this proposal into a reality for the people of Kurdistan and the surrounding regions.

#### **4. Conclusion**

The wealth and resources are available to carry out the project, but the support of government officials and affiliations with local universities to provide the staff and students for learning and teaching is paramount to the success of this initiative. The clinic has the potential to be an enormous resource for students to learn, for research to be conducted, and for ties between government, universities and the general population to be strengthened.

There is an honour in undertaking such a cause that will provide great benefit for these deserving people, but its cost must be sustainable so that its benefit to the people can be consistent and ongoing. Because the patient base is large, and the incentive is strong for them to seek treatment at such

a high-quality facility, this project will return its initial investment in a very short amount of time, and become quite profitable thereafter.

The plan is currently to keep treatment extremely focused on amputee patients and patients of orthopaedic surgeries. The main benefit of creating a clinic that is focused on a narrow spectrum is that more resources, time and energy will be spent in finding better solutions for these particular patients. This does not, however, mean that there is no room for future expansion. As profits are made, there is potential to include very deep efforts in treatment for additional populations, such as cardiac patients who can also require extensive surgeries and rehabilitation after major traumas. The potential for growth is definitely an enticing attribute of this project.

This centre will provide a unique health service for the veteran and general population of Kurdistan. It is an effort that will improve the lives of many individuals and families in the region, the surrounding states, and around the globe. It is an effort that will require the dedicated work of many different people; from planning to execution and operation, the clinic will create invaluable opportunities for the individuals involved to showcase their skills and to come together for a noble and profitable cause.

It is true that there are some treatment options available in the area for amputee patients, or patients requiring joint surgeries, but none that display the commitment to utilizing the very best technology and techniques for this very large, very special patient demographic that this project demands. With the establishment of the Rehabilitation and Computerized Prosthetics Center of Kurdistan, we will empower people to regain control of their lives and bring them back to work and supporting their families sooner. The centre will allow each patient to enjoy the best possible quality of life. They will be able to feel a sense of normalcy return to their everyday lives, and will be able to feel proud of the advanced treatment centre that is found in their own homeland.

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CHAPTER THIRTEEN

THE KURDISH NATION  
AND ITS QUALITY OF LIFE:  
FIELD ANALYSIS WITHIN THE KURDISH  
POPULATION 1999–2011

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**Abstract**

Quality of life research and social reporting today belong to the most pragmatic research disciplines in social sciences and sociology. This may have been the main reason in declaring such scientific capacities as “social engineering.” The quality of life research within its short existence has developed itself from a simple material inspection of a country’s living conditions to a combination of multidimensional, post-material and subjective analyses of peoples’ lives. The number of field analyses in the subjective quality of life discipline, especially in industrialized countries, has firmly increased while most developing countries are still hesitating in such a scientific contribution.

Analysis of quality of life in Kurdistan or within its Kurdish population may have indirectly been discussed in some research or academic writings, but have never been considered for a holistic, scientific regard. In a series of field analyses started in 1999 and continued until 2011, the author examined the subjective quality of life of some Kurdish populations, in- and outside Kurdistan. In this chapter, some major findings of the discussed fieldwork are put together to shed some light on the well-being and general quality of life of Kurds for the first time.

## 1. Introduction

### Conceptual and theoretical background in quality of life

Any parameter or indicator which in any way shows and/or helps to indicate the social standing of a nation could be considered as a significant social indicator, and if this has a comprehensive and direct or positive effect on an individual could be considered a quality of life indicator. Although in the quality of life research many objective and material elements are significant and influential, most of the quality of life scientists today agree that subjective indicators like happiness, satisfaction or psycho-somatic cognition must be incorporated with the objective indicators, which in a non-biased academic survey should lead to the quality of life analysis. A combination model in this regards was developed by Wolfgang Zapf in 1984 which by cross-tabulating both objective and subjective indicators gives four types of well-being or quality of life conditions (see Table 13.1).

- (1) **Well-being**—combination of good objective and positive subjective indicators
- (2) **Dissonance**—combination of good objective and negative subjective indicators
- (3) **Adaptation**—combination of bad objective and positive subjective indicators
- (4) **Deprivation**—combination of both bad objective and negative subjective indicators

**Table 13.1 Cross-tabulation of objective and subjective well-being**

Subjective Well-Being		Objective Well-being
Negative	Positive	
Dissonance	Well-being	<b>Good</b>
Deprivation	Adaptation	<b>Bad</b>

Source: W. Zapf 1984

Such a model and conceptualization of the quality of life research has been established as the most sophisticated current example, although it seems essential that the personal and societal indicators of sustainable development ought to be incorporated in the whole process of analysis here. A research project, by just considering the personal objective and

subjective elements, may be able to assess the quality of life of a person or society in a specific timeframe but won't be able to evaluate the durability of sustainability of such quality in relation with environmental elements and the whole society's development. Measuring the rating of a person's happiness and satisfaction must be combined with the standing and inclinations of the sustainability competence of the society. Sustainability means environmental preservation, human rights, democracy, generational accountability, human dignity and good governance.

In the coming sections, especially Modern Developments and Approaches in Quality of Life Research, we are going to further confer different models of quality of life research and modern theories which have been frequently applied in this field.

## **2. Modern Developments and Approaches in Quality of Life Research**

In the last four decades, quality of life research has flourished as a modern field in social sciences whose roots go back to the social indicators system. Initially the purpose of the social indicators movement was to evaluate the quality of citizen's lives from one side and measure the effects of the government's programs on the society and lives on the other. The quality of life research has developed from a mere gathering, a huge number of indicators which are sometimes unrelated to each other. Incorporating an immense set of diverse data into the analysis processes, which sometimes do not correlate to the quality of life itself, would lead to confusion and may not bring any valuable or comprehensible and academic results. On the other side, considering just one or a few factors in evaluating the quality of life, will again be an oversimplification and will not grant any reliable analysis.

In recent years, a new trend in humanitarian science has been "positive psychology," which is a tendency to analyze the reasons and origins of individuals' happiness and satisfaction, or identify those components of human experience that make life worth living, while traditional psychology was mostly involved with what was wrong in human life, such as depression, hopelessness, pessimism, mental disease or aggression. An immense amount of current psychological research has focused on the quality of life analysis. Shigehiro Oishi at the University of Virginia shows how moving and frequent relocations in a family with children will have a stressful and negative effect on quality of life.

Health Related Quality Of Life (HRQOL) research, which today has diversified into many subsections like child or adult HROL, or QOL of

mentally or physically disabled populations, has also flourished as a consequence of advances in medical technology, and policies in minimizing or optimizing medical expenditures as well as protecting the more vulnerable and endangered community members, and improvement in their quality of life.

The above-discussed endeavours and achievements will scrutinize the quality of life in a constrained dimension, which would explain the quality of life only fractionally because of its selective and marginal use of the indicators incorporated in the analysis. Quality of life research as an applied field of social sciences spans a wide range of disciplines like sociology, economics, psychology, political science or environmental studies. Assessing a population's quality of life could only be of a significant meaning when a wider scope of indicators is incorporated in the process, especially when the subject corresponds to the overall or universal quality of life. Furthermore, it clearly distinguishes between the objective and subjective quality of life and the quality of life at domains or different aspects of life. The relative newness of the quality of life discipline has developed from simple, one-dimensional and more material analyses to a multi-dimensional, comprehensive approach in which more subjective indicators have been incorporated and in the recent years its durability and sustainability issues have played a distinctive role. Perhaps establishing "the club of Rome" in 1968 was the first step towards integrating the subjective and non-materiel indicators in the quality of life analysis. Although the material aspects of a person's life are crucial, the outcome of the socio-economic policies and programs in a society are also an enormous part in the life quality measures, which lead to a more specific analysis of "life satisfaction," "happiness" and subjective well-being" etc.

According to the models, theories and hypotheses involved in the quality of life research, countless works have been published in the last few decades. According to a tabulation of Econ-Lit, while between 1991 and 1995 only four papers on life satisfaction and happiness were published, between 2001 and 2005 this number reached over one hundred articles. If we consider a wider range of the related themes in the quality of life discipline and social indicators analysis, the figures will become exponential.

Kammann and his colleagues in 1983 tried to analyze the role of happiness in well-being. In 1974, Alex C. Michalos founded his journal of social indicators and quality of life as "social indicators research: an international and interdisciplinary journal for Quality of Life Measurement," and since then has contributed enormously to the field. In

1985 he developed his Multiple Discrepancies Theory (MDT) model to measure the quality of life. In this model, he tried to present a new approach in assessing the level of Happiness (H) and Satisfaction (S) among seven hundred university undergraduates and has assumed that the (H) and (S) were functions of perceived gaps between what one had and wanted, or chronologically what a person has had, or expected to have, in comparison to what they expect to have in future. Undoubtedly, one of the forerunners of the social indicators movement and quality of life research is Heinz-Herbert Noll, the director of the Social Indicators department of the Center for Survey Research and Methodology (ZUMA) in Germany. Some of his most recent works are "Social Indicators and Quality of Life Research: Background, Achievements and Current Trends," "Subjective Well-Being in the European Union During the 1990s," and "Towards a European System of Social Indicators: Theoretical Framework and System Architecture." In his extensive book on the social reporting and social indicators *Sozialberichterstattung und Sozialstaatsbeobachtung: individuelle Wohlfahrt und wohlfahrtsstaatliche Institutionen im Spiegel empirischer Analysen*, which he co-authored with Peter Flora in 1999, he tried to examine the approaches of social reporting and social-state monitoring in the context of social indicators systems and shows their different perspectives. In the second part of the work, institutions of the welfare states and personal welfare are discussed, while the last part focuses on family politics and living conditions.

Joar Vitterso shows, in a small research, how Emotional Stability (ES) declares 34% of variance on Subjective Well-Being (SWB). Paul Abramson and Roland Inglehart have showed a worldwide trend away from concerns with material well-being towards a kind of post-materialistic system of values which focuses on the development of more humane societies, with greater democratization and freedom.

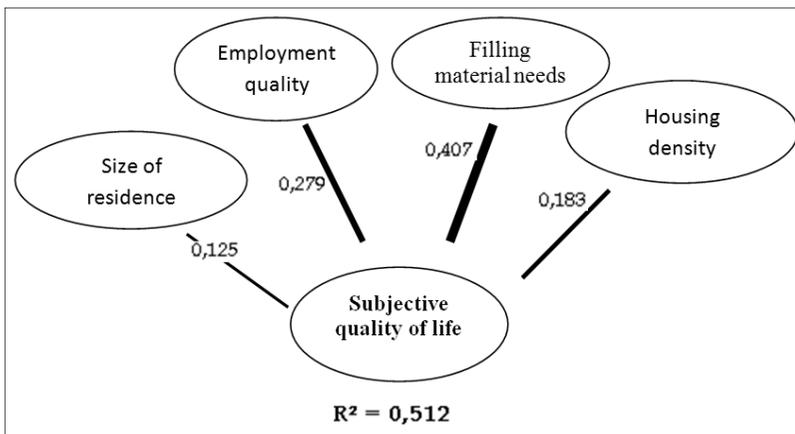
Certainly, one can incorporate any desired factors or indicators in their research model, and this could be differentiated by culture or country. It means an element which may be of high significance in one culture may not be of any importance for another, or even that in some period of time one indicator may not be of any importance for a society while for the other may be of significance. For example, the quality of some technological advances like speed level or quality of new communication devices may be of importance for people in modern societies, but not imaginable for many poor countries in the south. However, it ought not to be forgotten that the selected factors or indicators must be directly or indirectly measurable. There are many scales and models in the social sciences which are successfully developed and could be used to bring such

indicators to a quantifiable model of measurement. By incorporating non-measurable indicators, we may jeopardize the scientific accuracy and reliability of a research project and may not end up with valid results or findings, rendering it a speculative analysis.

Apart from the elements we are going to incorporate in our subjective quality of life analysis, there are two main approaches recognized in this field: the Top-Down-Model and the Bottom-Up-Model, in which the first measures the global/overall subjective quality of life in trying to provide assessments of important effective domains. Conversely, the latter assumes that a measurement of the global and overall subjective quality of life is best achieved by assessing its different elements or social domains, such as quality of employment life, income, health, dwelling, education, leisure, environment, etc. Although both these models have reached some level of success in analyzing the population's quality of life, what best serves here is considering a combination model of these approaches. The only consideration here may be incorporating a huge number of mostly meagre indicators in the model, which would make obtaining a scientific result very difficult or even make the research process at the stage of data-gathering or interviewing our samples very long and exhausting. The software package of LISREL (Linear Structural Relationships), as a statistical model of linear relationships among variables, would be a constructive way to analyze which indicators best explain the subjective quality of life. In this direction, a study at the University of Vienna supports the Bottom-Up-Model, in which different domains of life determine the subjective quality of life.

The findings of another study on the quality of life of Kurdish and non-Kurdish urban populations in Iran shows how the four main life domains like *Lebenserfüllung* (fulfilment of material needs), *Arbeitsqualität* (job quality), *Wohnungsgröße* (size of residence) and *Wohnraumdichte* (housing density) fundamentally effect the subjective quality of life, and together account for over 50% of the variance (See Fig 13.1).

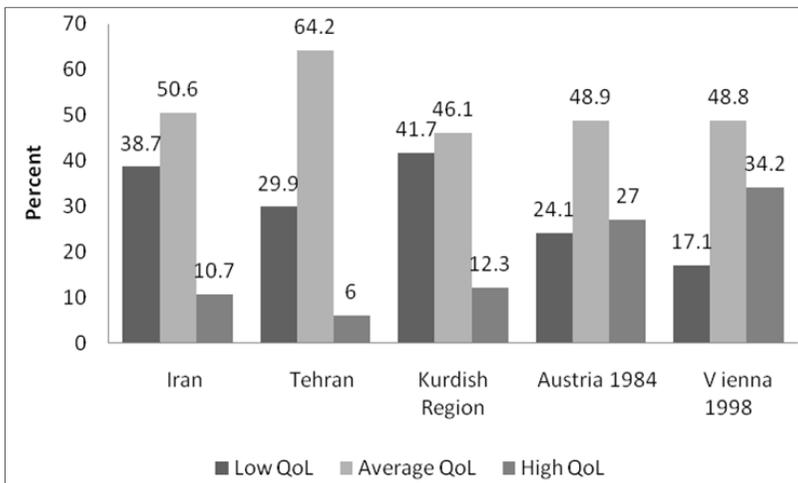
Fig. 13.1. Relationship between subjective quality of life and some important impact factors (social domains) in the urban population of Iran, 1999



The story of quality of life research in most countries of the South does not have any better stance than social indicators research itself, and has hardly been seen as a standalone discipline, and may have not been subject to the academic order at all. Mainly, the small-scale research projects conducted in these countries were either focusing on specific target groups, which is the usual concern in the health related quality of life analysis, or it incorporates just some objective indicators which cannot explain the overall quality of life of the population. A 1998 research project by the University of Vienna on the Kurdish and Iranian urban settlements tried, for the first time, to assess the quality of life of urban settlers in the Kurdish region and in the agglomeration of Tehran. Despite the limitations of research in such a sensitive, religious and state-controlled society, the project could reach out to an acceptable number of people, even though it was a small-scale project. The research result shows that the overall and universal quality of life of Kurdish citizens was much lower than the non-Kurdish citizens in the agglomeration of Tehran. According to this research, close to 40% of the Iranians showed a very low subjective quality of life in 1999, while only 10% of the population shows a very high quality of life. In other words, this means that about 90% of the Iranian population suffers from a very low to average quality of life, which is horrendous. Disparity between the underprivileged Kurdish urban region and the Agglomeration of Tehran is enormous. While the percentage of the people with the highest subjective quality of life in the Kurdish region is about 2%, it goes beyond 6% in Tehran. However, the

number for the average quality of life in Tehran also shows a higher level (64.2%). From the total 272 interviews in this year, eleven people showed the extreme lowest level of subjective quality of life which all fell within the Kurdish urban region, and none emerged in the agglomeration of Tehran. A comparison with similar findings from two different research projects for the Austrian (1984) and Viennese (1998) populations shows a higher quality of life for the Austrians, and a much higher quality of life for the Viennese (See Fig. 13.2).

Fig. 13.2. Subjective Quality of Life in Different Regions (%)



Source: Fereydoon Rahmani, University of Vienna 1999

The comparison of subjective quality of life between the female populations of all aforementioned areas shows a huge dissimilarity. The number of females with higher subjective quality of life in Vienna shows a high rate of almost 35%, while in the Kurdish region it is about 19%, and in the agglomeration of Tehran a meagre 7%. This data show that one third of the females living in the Iranian Kurdish cities undergoes a very low subjective quality of life (33.3%), while the similar index shows a better rate of 16% for Vienna and 22 % for the agglomeration of Tehran (see Table 13.2).

**Table 13.2. Subjective Quality of Life in Iranian and Austrian population by gender (%)**

	<b>Tehran Agglomeration</b>	<b>Kurdish urban region</b>	<b>Austria 1984</b>	<b>Vienna 1998</b>
<b>Subj. QOL</b>	<b>Male Female Total</b>	<b>Male Female Total</b>	<b>Male Female Total</b>	<b>Male Female Total</b>
<b>Low</b>	35 22.2 29.9	49.5 33.3 41.7	21 28 24.1	18.3 16.3 17.1
<b>Average</b>	60.0 70.4 64.2	44.8 47.5 46.1	52 46 48.9	48.1 48.9 48.8
<b>High</b>	5.0 7.4 6.0	5.7 19.2 12.3	27 26 27.0	33.7 34.8 34.2

Source: F.Rahmani, W. Schulz 1998–1999

A 2011 field analysis of the Kurdish immigrants and refugees in Canada shows that three variables of “General life satisfaction,” “Happiness” and “Material Life Satisfaction” have an overwhelming interrelationship. The correlation matrix shows a very high coefficient rate between 0.75 and 0.88 of such variables, which indicates a high positive relationship between them. In addition, the regression analysis of all three variables measures a  $R^2$  amount of .78, which statistically gives a high significant tendency towards building a new factor of “subjective quality of life.” The analysis of the subjective quality of life for Kurdish immigrants in Canada displays a higher level than the Kurds who lived in Iran during 1999 analysis. Even comparing the findings with those calculated for the Austrian citizens in 1984 or for the Vienna in 1998 indicates a higher subjective quality of life for the Kurdish immigrants and refugees in Canada for the year 2011 (see Table 13.3).

**Table 13.3 Subjective Quality of Life within the Kurdish immigrants and refugees in Canada 2011**

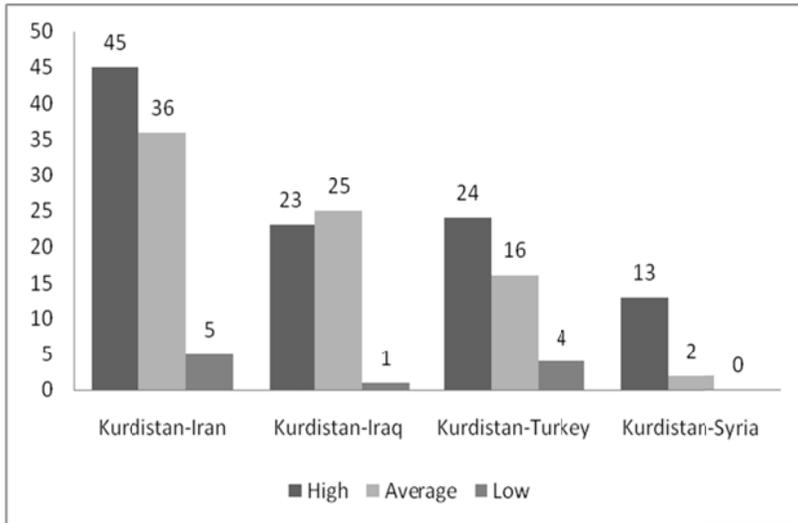
<b>Subjective Q. o L.</b>	<b>Frequency</b>	<b>%</b>	<b>Valid %</b>	<b>Cumulative %</b>	
<b>High</b>		107	49.8	49.8	49.8
<b>Average</b>		84	39.1	39.1	88.8
<b>Low</b>		11	5.1	5.1	94.0
<b>Missing Values</b>		13	6.0	6.0	100.0
<b>Total</b>		215	100.0	100.0	

Source: Fereydoon Rahmani, unpublished field research 2011, Toronto

Although subjective quality of life for the male population is a little higher than the females, a large portion of women (35.3 %) still enjoy a relatively high to average subjective quality of life, while 44.6% of men are considered as having the same level of quality of life. In terms of their age, almost one third of those who indicated a high subjective quality of life (32.5) are between 20 and 44 years old. Married people (53%) have indicated having an average to a very high subjective quality of life, while this would be 30.2 % for the single people. Only 2.8 % of the married population indicates a low subjective quality of life within the Kurdish immigrants interviewed. A regional comparison of the high subjective quality of life as per the country of origin of the Kurdish immigrants of Canada show almost the same standards as the whole Kurdish population of Canada. Although both Kurds from Turkey, with 50%, and Kurds from Iran, with almost 49%, have a slightly higher tendency to a high subjective quality of life, the Iraqi Kurdish immigrants indicate it to be a little lower, but still have a good rate in their high subjective of quality of life (45%). From only eleven interviewees who have indicated having a low subjective quality of life between the Kurdish immigrants of Canada, five were originally from Iranian Kurdistan and four from Turkish Kurdistan, and only one person indicated to be from Iraqi Kurdistan (see Fig. 13.3).

From the total ninety-two Kurdish immigrants who indicated being satisfied to very satisfied with their general financial/material life conditions, more than one third originate from Iranian Kurdistan—twenty are from Turkish Kurdistan, fourteen from Iraqi Kurdistan and only twelve from Syrian Kurdistan. The findings of the above-discussed research project show that the number of people who have indicated having a very unsatisfactory financial or material life conditions is very marginal and minimal between the Kurdish immigrants from all four parts of Kurdistan. In term of the happiness factor, immigrants from all four parts of Kurdistan have shown a very high tendency towards a high to very high happiness level and immigrants from all four regions show being more than 50% happy or very happy with their general life conditions in Canada. From the total 215 valid interviews, only three have indicated being very unhappy generally. Comparing the same population by their level of satisfaction with their general life conditions also shows a good but still lower rate than the general happiness. From the total 215 people, 37 have indicated being very satisfied with life, of which 35% are from Iranian Kurdistan, while a large number showed themselves to be satisfied (75) or averagely satisfied (79). Again, a very small number (3 people) indicated being very unsatisfied in their life generally.

Fig. 13.3. Distribution of subjective quality of life within Kurdish immigrants and refugees in Canada as per their country of origin, 2011



Source: F. Rahmani, Research project on quality of life of Kurdish immigrants and refugees of Canada, 2011

Analysis of the level of happiness towards job security also shows a gender differentiation. While 25% of women are happy or very happy with their job security more than 35% of men are happy or very happy with the same indicator. From the total 215 people, 42 (less than 20%) are unhappy to very unhappy with their work conditions, from which only 19 indicated being very unhappy. In contrast, a high number (149 people, close to 70% of all interviewees) have indicated being very happy or happy with their general work conditions in Canada. Although the effect of the Canadian political system within the life satisfaction and happiness of people is limited, a very high tendency has been recognized within the satisfaction level of the Kurdish immigrants towards the political system. While 166 people (more than 72%) were average to a high level satisfied with the political system in Canada, only 11 Kurdish people (5%) indicated being very unsatisfied with the political system in Canada.

### 3. Conclusion

Quality of life research today has become one of the most practical parts of sociological research and planning. Although it has a four decade

history of applied field analysis with tremendous growth and diversification, within developing countries it is still at an early phase of development. The present chapter is a culmination of several different field researches which the author implemented between 1999 and 2011 within the Kurdish community.

The research findings show that the 1999 subjective quality of life of Kurdish people in Iranian Kurdistan was much lower than the population in Tehran, and much lower than the Austrian or Viennese. While close to 42% of the Iranian Kurdish population have shown a very low subjective quality of life in 1999, this rate in Tehran for the same year is less than 30%, while for the Austrians in 1984 it is about 24% and for the Viennese in 1998 about 17%. The findings of another field analysis in 2011 indicates an extremely high subjective quality of life for Kurdish immigrants and refugees from all four parts of Kurdistan, with close to 50% showing a very high subjective quality of life, with only 6% showing a very low subjective quality of life. In the same way, the life satisfaction and happiness towards different domains of life, such as work conditions, financial or material life standards, as well as health, employment or job security, or even general satisfaction with the political system of the Canadian society, indicates a high satisfaction rate within the Kurdish immigrant or refugee population. Although, the year base in these comparisons are different, they indicate a good foundation to better understand the life conditions of the diasporan Kurdish population and other Kurdish or non-Kurdish populations.

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**PART V**  
**INDUSTRY**

## CHAPTER FOURTEEN

# THE ROLL OF AUTOMATION AND MECHATRONICS IN THE CREATION OF A MODERN INDUSTRIALIZED NATION

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### **Abstract**

Automation and mechatronics systems are implemented in all types of production machines, automotive industry and products, consumer equipment and household appliances. Automation plays an important role in the world economy and in daily experience. Developing and producing automated production machines and systems is one of the most important and necessary ingredients and steps towards a fully developed industrial society.

In this chapter, opportunities and obstacles for such development in the Kurdistan region are analyzed. Addressing the historical background in the region, the necessary prerequisites for industrialization, the required political and economic environment, and education and training needs are outlined. The focus areas in the study are derivations of required actions and measures that should be taken, based on concrete examples from other highly developed industrial nation's experiences in this field. There are many lessons to be learned and experiences to be adapted from other highly developed countries in Europe, America and Asia which have already built up highly developed industries, infrastructure, financial mechanisms, investment environments and education processes.

General recommendations are given on the adaptation of education and education programs to the industry needs in important fields, among

others, within the field of automation technology and mechatronics, practical engineering and training, research and development work, production process and technology, lab or training and more.

Other recommendations for building up the necessary conditions for industrialization and technical development, entrepreneurship and cooperation with international companies are proposed. Finally, the impact of industrialization on the environment is highlighted, and the building blocks of sustainable development are presented.

## **1. Introduction**

According to a widespread definition, industrialization is a social and economic transition from an agrarian society to a society where the economy and economic growth largely depends on and is closely related to the manufacturing of goods and services, technical innovation and development of large scale heavy and light industry. It is a modernization process of economy based on the production of machines and consumer products.

Manufacturing is the strength of any industrialized nation. Although large segments of the population may be employed in service industries, it is manufacturing that produces the wealth of a nation.

Automation is the use of machines with electrical drive systems and components, HW and SW control systems, and information technology to optimize efficiency and productivity in the production of goods and delivery of services.

While mechanization provides humans with machinery to assist them with the muscular requirements of work, automation greatly decreases the need for human sensory and mental requirements while increasing load capacity, speed, quality control and repeatability, which leads to higher productivity and profitability.

Developing and producing automated machines with control and supervisory systems for production and consumer needs is one of the key prerequisite for high-level industrialization, economic development and growth in any country.

By creating all conditions needed for industrialization in the Kurdistan region, i.e. producing the necessary heavy and light industrial products (production machines and consumer products) with appropriate and competitive quality, the future of a strong economy and industry in Kurdistan can be assured. This is the only assurance for the Kurdistan region's economy of survival when the oil reserves are emptied and extraction and production ends.

However, access to and implementation of the above-mentioned advanced technologies are insignificant for industrialization process if appropriate preconditions are missing, such as: a business friendly environment, the long-term, pragmatic and flexible industrial and R&D policy of the government, and proper education programs and labour training and management.

## **2. Automation and Mechatronics: the Key Prerequisites for Industrialization**

The term “automation,” inspired by the earlier word “automatic,” was used in 1947 when General Motors established the automation department. At that time, automation technologies were electrical, mechanical, hydraulic and pneumatic. The result of work at this department led to a nearly doubled factory output between 1957 and 1964, while the number of blue collar workers decreased. (see Wikipedia)

The main reason for developing and applying automation and mechatronics systems and products is to increase productivity and quality beyond the human labour capabilities to realize economies of scale, and realize predictable quality levels.

Mechatronics is a foundation stone in the automation technology, focusing on specific parts, or subsystems of the automation systems. Originally, mechatronics was a combination between mechanics and electronics, however, as technical systems have become more and more complex the word includes and covers more technical areas. Mechatronics is a multidisciplinary field of engineering, being the combination of mechanical engineering, electronic engineering, computer engineering, software engineering, control engineering, and systems design engineering to design and manufacture products. In Fig. 14.1 below, the various technical fields that make up mechatronics are described.

The electrical drive system is a main building block in the mechatronics systems. It is employed for motion control, e.g. the transportation system, fans, robots, pumps, machine tools, etc. Electrical drive systems consist of electrical motors and/or actuators, sensors, control electronics and control SW, illustrated in Fig. 14.2 below.

In turn, the control system is a heart and brain in Mechatronics systems. All performance parameters of electrical drive systems or an automation system, such as speed, acceleration/deceleration, position, load capacity, temperature, pressure etc. can be controlled by means of well-dimensioned and designed control systems. In Fig. 14.3 below, a block

diagram for an electrical drive system with speed, position and load control are presented.

Control systems can be either analogue or digital, or consist of both. Analogue control systems consist of analogue controllers realised by operational amplifiers, semiconductors, and passive and active components. Digital control systems consist of digital controllers realised by programming microprocessors, DSP and other integrated circuit components (IC).

Control engineering plays a fundamental role in modern technological systems. There are huge benefits in improving control systems in industry which leads to improved product quality, reduced energy consumption, minimization of waste materials, increased safety levels and reduction of pollution. (see Graham, et al., 2000)

Designing and operating an automated process so that it maintains specifications on profitability, quality, safety, environmental impact etc. requires a close interaction between experts from the above-mentioned technical areas. Most of the advantage of automation technology is its influence on the manufacturing processes. Using automated manufacturing, i.e. the application of automation systems to produce things in the factory way, is the most important way to minimize production costs, bring higher consistency and quality, reduce lead times, simplify production, reduce handling, improve work flow, and increase worker morale when a good implementation of the automation is made (see Fig. 14.4 below).

Advanced automation systems gives the possibility to build an ethernet-based facility management system where several sub-systems are integrated together, such as warehouse management, production line process control, security, lighting, equipment surveillance and so on (see Fig. 14.5 below).

Advanced Manufacturing Technology (AMT) is also based on the use and utilization of advanced automation and mechatronics systems. AMT includes modern methods of production, and is the integration of highly automated, computerized design and operational systems. AMT is an automated production system, a group of computer-based technologies including automation and mechatronics systems, computer-aided design (CAD), robotics, group technology, automated materials handling systems, computer numerically machine control tools (CNC), and bar-coding or other automated identification technology. (see Sergio et al., 2001)

AMT facilitate the planning and control of the production process in order to manufacture high quality products at low cost within the shortest delivery time in production process. AMT covers the whole chain in the

production process, including procurement of raw materials, parts, components, and the shipment and services of finished products. (see Rosni et al., 2008)

AMT has a broad spectrum of computer-controlled automated process technologies. It can be achieved by means of applying automation and mechatronics systems and components along with industrial control systems.

Below are some of most used industrial control systems:

1. DCS (Distributed Control System) is a computerized control system used to control the production line in the industry. The entire system of controllers is connected by networks for communication and monitoring (see Fig. 14.6 below).

DCS is used in a variety of industries to monitor and control distributed equipment and manufacturing processes, such as oil refining, petrochemicals, central station power generation, fertilizers, pharmaceuticals, food and beverage manufacturing, cement production, steelmaking and papermaking. DCSs are connected to sensors and actuators and use setpoint control for the flow of material through the plant.

More examples of implementation of DCS are in electrical power grids and electrical generation plants, environmental control systems, traffic signals, radio signals, water management systems, metallurgical process plants, chemical plants and others.

The elements of a DCS may connect directly to physical equipment such as switches, pumps and valves, or they may work through an intermediate system such as a SCADA system.

2. SCADA (Supervisory Control and Data Acquisition) is a computer system that monitors and controls industrial processes, infrastructure, or facility-based processes. It can be used in manufacturing, production, power generation (see Fig. 14.7 below), fabrication, refining, water treatment and distribution, wastewater collection and treatment, oil and gas pipelines, electrical power transmission and distribution, wind farms, civil defence siren systems, and large communications systems. It can be also used in facility processes including buildings, airports, ships, and space stations. SCADA can even monitor and control HVAC, access and energy consumption.

A SCADA system usually consists of the following subsystems:

- A human–machine interface (HMI) is a device which presents process data to a human operator, and through this the human operator monitors and controls the process.
- A programmable automation controller (PAC) is a supervisory (computer) system, gathering (acquiring) data on the process and sending commands (control) to it.
- Remote terminal units (RTUs) connecting to sensors in the process, converting sensor signals to digital data and sending digital data to the supervisory system.
- Programmable logic controllers (PLCs)—see below.
- Communication infrastructure connecting the supervisory system to the remote terminal units and various process and analytical instrumentation

### 3. PLC–Programmable Logic Controller

Unlike general-purpose computers, the PLC is used to control the machine or production process. It has multiple inputs and outputs, extended temperature ranges, immunity to electrical noise, and resistance to vibration and impact (see Fig. 14.8 below). Programs to control machine operation are stored in battery-backed-up or non-volatile memory. PLC is used to control machines and systems in real time.

### 4. PAC - Programmable automation controller

PACs combine PLC robustness with the functionality of a PC in an open and flexible software architecture. With these controllers it is possible to create complex systems that include software with advanced control, communication, data logging and signal processing, with a robust checks for logic, motion, process control and computer vision. An example of PAC is LABView with distributed I/O and a complete data acquisition system (see Fig. 14.9 below).

All the above industrial automation systems and products are tools that create conditions for building effective production processes and systems, but only the knowledge and ability to develop and produce such advanced products, systems and components, including electrical drive systems and components, are evidence for high technology development and industrialization. Mastering all above-mentioned technologies and the ability to realize them in competitive products is the key prerequisite for creating a modern industrial society.

### 3. The Impact of the History and Geopolitical Situation on Industrial Development

There are many reasons why the Industrial Revolution did not come to the Middle East when Europe was on the front line. As growth took off in the West, the Middle East lacked the organizational capabilities to use the technologies of modern industry, and was left far behind.

There are two explanations for why this happened. Many Middle Easterners who have tackled the question have attributed the region's socioeconomic backwardness to such factors as colonialism, authoritarian nationalist regimes, policy failures and the oil curse.

In addition, Kurdistan is divided and until now the major parts of this land were occupied and emptied of national recourses and government investments in infrastructure and economic development. Furthermore, throughout history, Kurdistan has been in crossfire between more powerful nations in the region, such as Arabs, Persians Turks, and even Europeans during World War I.

The second reason is institutional, according to Timur Kuran, professor of economics at Duke University in the United States. In his book *The Long Divergence: How Islamic Law Held Back the Middle East*, he explained the causes of the Middle East's underdevelopment (Timur, 2011). His analysis was based on the comprehensive study of seventeenth-century court records of Istanbul

As the title of his book suggests, Kuran claims that Islam hindered the socioeconomic development of the Middle East, not through its belief system but its legal infrastructure. He puts responsibility primarily on three elements of Islamic law: the inheritance system, which inhibited capital accumulation, the commercial contracts law, i.e. the absence of the concept of corporations, which held back the exploitation of advanced technologies, and a charitable trust *waqf*, established under Islamic law, which despite its many advantages locked vast resources into unproductive organizations for delivering social services.

According to the Kuran, these obstacles to socioeconomic development were largely overcome through radical reforms adopted in the nineteenth century in many Islamic countries. Nevertheless, they have had lasting consequences, including the weaknesses of the Middle East's private economic sectors and its human capital deficiencies.

#### **4. Industrial Policy and R&D Strategy**

It is crucial for industry that there is a modern infrastructure, sufficient energy production and distribution, and a friendly business environment. Political stability, transparency in legal rules, effective micro- and macroeconomic policy, minimum of bureaucracy, access to motivated and qualified labour and manpower plays a crucial role in industrial development and economic growth.

The role of government has always been significant in the history of capitalism. Sometimes, it has been ignored for certain reasons in developed nations as France, Britain, Germany and the USA.

Many governments in newly industrialized countries in East Asia frequently and aggressively intervened in the market and have contributed significantly to economic growth.

In many developing countries, the governments have intervened even further in the economy, directly investing into different infrastructure and industrial areas, and even decentralising economic policy to the municipalities.

China could not build up a necessary base for industrialisation and heavy industry in the form of metallurgy, petrochemicals, energy production and distribution etc. without state-owned enterprises and direct government investments during its industrial revolution in the middle of twentieth century.

In developing countries where there are not enough strong private capital investors, and no insurance and equity markets, governments should come in as the “second best” risk insurer and capital provider to substitute for missing and difficult-to-develop capital market.

In the Kurdistan region, the KRG investment policy and law is a prominent example of government intervention to establish a business-friendly environment to attract foreign and domestic investors to invest in Kurdistan and contribute in developing the society. But to continue working with and toward the industrialization of Kurdistan, more works should be done and more efforts should be made to enhance and foster innovation, technological development, and investment in production and manufacturing.

There are many lessons to be learned from developed and some developing countries which have already built up highly developed industries, infrastructure, financial mechanisms, investment environment and education.

Below are some examples of other nation’s industrial and R&D policy which have resulted in economic growth and industrial development.

### 4.1 China industrial policy

China is a successful example of utilising policy to attract foreign direct investment (FDI) to develop manufacturing and export capacity.

In 1992, Free Trade Zones (FTZs) were created. Free Trade Zones are specially designated urban areas selected for receiving preferential treatment and trading privileges. The investment incentives in FTZs are extremely attractive since exports and imports are free of any taxes or tariffs so long as the imports are not re-sold in China. Items intended for re-sale in China were, by contrast, subject to high tariff rates. (see Ling, 2009)

China's industrial policy has focused on developing partnerships between domestic enterprises and foreign partners, usually well-established multinational corporations. China has been successful in attracting foreign direct investment despite a lack of formal private property rights, transparent institutions, and with a significant degree of bureaucracy.

China exerted significant control over the form and destination of inward FDI to ensure technology transfer. Joint ventures were not approved unless they met two criteria: the foreign partner must have superior technology that is of interest to China, i.e. the joint venture agreements included annexes demanding technology transfers, and the manufactured products must be suitable for export and demanded in global markets. To reduce the threat of foreign capital taking over or dominating domestic sectors, the joint ventures were usually nearly 50:50, with the Chinese partner holding 51% of shares.

China continued its pace to attract more advanced technologies by developing High-Technology Development Zones (HTDZs) in 1995. The intent of the HTDZs was to increase China's research and development capabilities through fostering both domestic and foreign investment. Each zone includes a number of "industrial parks" and "science and technology parks," open to domestic and foreign high-tech investors. There are also numerous zones that have not been sanctioned by the state. These zones are intended to promote industrial applications of technology and tend to be located near to existing or planned research institutions, or research and development centres. A characteristic of the HTDZs is the "3-in-1" development system, whereby every zone must include a university-based research centre, an innovation centre to utilise applied technology for product development, and a partnership with a commercial enterprise to manufacture and market the products (Ling, 2009).

Recently, China began to promote outward FDI and encouraged its firms to go out globally (Linda, 2012). In the twenty-first century, China is

practising a “going out, bringing in” policy that characterises its global rise.

The major step in this direction is the establishment of “China Investment Corporation” by the government in 2007 (China Investment Corporation) This corporation is an investment institution, i.e. an investment fund, wholly owned by the state. The fund is responsible for managing part of China’s foreign exchange reserves and intended to utilize these reserves for the benefit of the state. This fund is the largest sovereign wealth fund in the world (Wikipedia) The corporation aims to invest in around fifty large-sized enterprises across the world.

## **4.2 Experiences from Norway**

Norway has developed a mixed economy where the state owns strategic areas which are sensitive to global business cycles. The public sector in Norway is among the largest in the world as a percentage of the overall gross domestic product (GDP). The economy of Norway has shown robust growth since the start of the industrial era. Much of Norway's economic growth depends on an abundance of natural resources, including petroleum exploration and production, hydroelectric power, and fisheries (Wikipedia).

The state has large ownership positions in key industrial sectors, such as the strategic petroleum sector (Statoil), hydroelectric energy production (Statkraft), aluminium production (Norsk Hydro), the largest Norwegian bank (DNB) and the telecommunication provider (Telenor).

The government controls 31.6% of publicly-listed companies. When non-listed companies are included the state has even higher share in ownership (Missouri University).

Norway is an oil-exporting country and its economic structure is highly dependent on natural resources. Economic growth is highly vulnerable to fluctuations in the demand and pricing for natural resources and there is awareness that natural resources will be exhausted in the future.

To tackle this issue and minimize dependence on petroleum revenue, the government initiated and implemented several measures and efforts, among others “The Government Pension Fund of Norway,” which is referred to as “The Oil Fund.” The surplus wealth produced by Norwegian petroleum income is deposited into this fund. The purpose of this fund is also to invest in large- and mid-sized enterprises across the world.

As of the valuation in June 2011, this fund was the largest pension fund in the world, although it is not actually a pension fund as it derives its

financial backing from oil profits and not pension contributions (Government Pension Fund)

### **4.3 R&D strategy in South Korea**

The Ministry of Science and Technology (MOST) created in 1967 had the responsibility of formulating national science and technology policies and plans. In 1982, this ministry established and implemented the National R&D Program (NRDP) with the aim to strengthen technological capabilities and competitiveness (Bartzokas, 2008).

The Korean government established a portfolio of policy instruments supporting innovation and technological applications. These initiatives were integrated in the structure of different ministries. Throughout the development periods, policy has been directed toward promoting technology transfer as a means of technology acquisition. Developing domestic absorptive capacity to digest, assimilate and improve upon the transferred technologies was prioritized. In addition, NRDP promoted private industrial R&D.

Policy relied on long-term foreign loans to finance industrial investment, and large-scale foreign loans allocated for investments in selected industries, which led to massive importation of foreign capital goods and turn-key plants. Industries, later, reverse-engineered the imported capital goods for the purpose of acquiring the necessary technologies.

The Korea Institute of Science and technology (KIST) was created in 1966 to intensify research and development work, and transfer creative, original technologies that are necessary to advance the nation's science and technology base (Chung, 2005).

In 1999, the Korean government launched a long-term strategic initiative "The Long-term Vision for Science and Technology Development toward 2025 (Vision 2025)." (see Barzokas, 2008) This initiative included a series of forty tasks and twenty recommendations designed to guide the transition to an advanced and prosperous economy through the development of S&T.

The first step (by 2005) was to place the Korean scientific and technological capabilities at competitive levels with those of the world's leading countries by mobilizing resources, expanding industrialized infrastructure, and improving relevant laws and regulations. The second step (by 2015) is to stand out as a major R&D promoting country in the Asia-Pacific region, actively engaging in scientific studies and creating a new atmosphere conducive to the promotion of R&D. The third step (by

2025) is to secure a scientific and technological competitiveness in selected areas comparable to those of G-7 countries (Barzokas, 2008).

#### **4.4 Experiences from the USA**

At the Missouri University of Science and Technology, the Office of Technology Transfer and Economic Development (TTED) were established to promote and encourage technology commercialization, entrepreneurship, business and economic development. TTED's mission is to bring together organizations and resources to facilitate the efficient implementation of university discoveries for the benefit of society.

TTED helps university faculty and students to utilize new technologies and create start-up businesses: "Through its programs and services, TTED is laying the ground work for the creation of new products, new jobs, and new opportunities" (see Missouri University).

To achieve its ambitions, TTED began to operate a Technology Transfer Office (TTO) and a Small Business and Technology Development Center (SBTDC). Both groups work closely with the University of Missouri's Office of Research and Economic Development to provide responsive, professional services to the faculty, students and industry partners to facilitate the creation of wealth, jobs and opportunities for faculty, staff, students and businesses within the state of Missouri.

#### **4.5 Experiences from Sweden**

Sweden is one of those countries that invests most capital on research and development in relation to GNP—about 3.6% (Swedish research).

In 1994, the Swedish government formed the "KK-Stiftelsen," the Foundation of Knowledge and Competence. The task of the foundation is to finance research and skills development at new Swedish universities, in collaboration with industry (KK-Stiftelsen). The main objective is to enhance research at the newly established colleges and universities, enhance collaboration between industry and universities, colleges and research institutes, and promote the use of IT. The foundation was formed to find new paths between industry and academia in order to shorten the gap between the research and growth.

In 2001 the Swedish government established VINOVA, the Swedish Governmental Agency for Innovation Systems, which is an agency working under the Ministry of Enterprise, Energy and Communications.

The mission for VINOVA is to “promote sustainable growth by improving the conditions for innovations, as well as funding needs-driven research”:

VINNOVA’s vision is for Sweden to be a world-leading country in research and innovation, an attractive place in which to invest and conduct business. We promote collaborations between companies, universities, research institutes and the public sector. We do this by stimulating a greater use of research, by making long-term investment in strong research and innovation milieus and by developing catalytic meeting places. VINNOVA’s activities also focus on strengthening international cooperation. In order to increase our impact, we are also dedicated to interacting with other research financiers and innovation-promoting organisations (VinoVA).

In 1994, The Swedish Foundation for Strategic Research was founded by the government with the objective to support research in natural sciences, engineering and medicine that strengthens Sweden’s competitiveness in research that will be of benefit to Sweden in the long term:

The objectives of the Foundation are to promote research, the results of which may serve as a basis for the development of existing or new companies and well-educated graduates, who through broadened and improved graduate training are attractive for employment primarily in industry and society, but also in universities and research institutes the ability of internationally high-class research environments to attract uniquely qualified researchers and international investments to Sweden research that serves as a focus for international cooperation, whereby knowledge of interest to Swedish industry can be accumulated (Rensselaer Polytechnic Institute).

In 1994, the Swedish parliament decided to establish “ALMI Förtagspartner,” a state-owned investment bank to finance and promote the development of small businesses. The word ALMI comes from the Latin word *Almus*, meaning growth, nutrition or fertility (ALMI Investment Bank). ALMI’s activities include loans, venture capital and consulting in building enterprises, turning ideas into successful businesses.

## **5. Sustainable industrial development**

The impact of industrialization on the environment should always be considered, and all measures should be taken to maintain and preserve the nature and living environment. In the process of industrialization and economic growth, today’s needs should be fulfilled without compromising

the ability of future generations to meet their own needs. The present generation has the responsibility to not only maintain nature but even to improve the future generations' lives by minimizing waste, protecting the environment from pollutions and preparing better conditions for life.

The concept of sustainable development is often broken into three constituent parts: environmental sustainability, economic sustainability and sociopolitical sustainability (see Mann 2011 and Fig. 14.10).

According to The Universal Declaration on Cultural Diversity (UNESCO 2001), the fourth pillar of sustainable development is cultural. The declaration states that "... cultural diversity is as necessary for humankind as biodiversity is for nature."

To achieve high-level industrialisation with sustainable growth, it is necessary to implement high-quality manufacturing technology with energy-efficient industrial automation and mechatronics systems and components to achieve energy-efficient production processes. Environmentally friendly materials should be used in all steps in the product development chain, and machines and consumer products should be energy efficient. Renewable energy should be used, and materials used in production, production machines and consumer products should be recycled. And most importantly, emissions and pollutions should be restricted or minimized.

Companies and governments are increasingly becoming aware of the need to achieve the conditions outlined above whilst respecting finite natural resources and preserving our fragile environment.

## **6. Summary and Conclusions**

Kurdistan region has significant challenges in its path toward a fully developed industrial nation. There are many lessons to be learned from other well developed industrial nations.

The Kurdistan nation's efforts and recourses should be mobilized to work intensively, consistently, pragmatically and strategically with technology development and industrialization, where the ability to master and utilize automation and mechatronics technology is the key prerequisite and success factor.

Based on the above-mentioned examples from some developed industrial nation's experiences in the field of industrialization and technological development, the following recommendations and required actions can be derived and presented.

## 6.1 Within education

Access to skilled and well educated labour, engineers and researchers is the driving force for technology development and industrialization.

Industry needs should be always taken in consideration in education programs within different kinds of technology, especially production technology.

Necessary education programmes to prepare qualified workers and engineers to the industry should be organised and implemented.

Institutions to compensate domestic weakness in technology should be established:

- (1) One of the most important institutions that promotes industrial development is automation and mechatronics. At universities, education programs within the below technical areas should be prioritized and focused on:
  - Electrical Drive Systems in theory and practice
  - Control Systems theory
  - Control systems design—analogue and digital control systems in practices.
  - Control systems with PLC and PAC (including Distributed I/O and bus communication) design and programming.
  - Embedded control systems with microprocessors and DSP—design and programming.
  - Measurement technology
  - Safety and supervisory systems design for Automation systems
  - Power electronics—AC to DC, DC to DC and AC to AC converters
  - Industrial robotics
  - Micro electronics
  - Introduction to related safety standards and directives, among others machinery directives, EMC directives, safety of machinery, safety-related parts of control systems, and others.
- (2) Institutions and education programs within telecommunication technology, computer science, SW and Mechanical design are other important subjects for this area that should be prioritized.

- (3) New education program within manufacturing engineering and production technology should be started to meet and even exceed industry needs and expectations. These disciplines of engineering deal with different manufacturing practices, research and development of production systems and processes, machines, tools and equipment for production purposes.
- (4) Education programs at universities should include well-planned laboratory and practical exercises and experiments. Advanced laboratory equipment and instruments should be available for students, engineers and scientists.
- (5) Co-operation between universities, authorities and enterprises should be enhanced in fields of education, practical engineering and training, research and development work through:
  - Internships, scholarships and summer jobs for students within industry, science and technology centres.
  - Industry enterprises should have the possibilities to initiate and sponsor thesis, diploma and research works when they are interested.
  - Thesis, diploma and research works can be done within or in close co-operation with industry.
  - Co-operation with companies and universities outside Kurdistan mainly in developed countries, and can support students for university and PhD studies in these countries
- (6) Vocational training should be prioritized and invested in by the government. The education programs and practical exercises should be adapted to the industrial needs.

## **6.2 Industrial policy and R&D strategy**

Political stability, transparency in legal rules, developed infrastructure, effective economic policy, minimised bureaucracy and zero tolerance for corruption comprise a robust foundation and fertile environment for investment in industry. Below are some concrete proposals and recommendations:

- (1) Infrastructure should always get the highest priority to be developed, enhanced and maintained in below areas:

- Energy production and distribution
  - Railway, highway and road communication
  - Distribution and logistics
  - IT and telecommunication
  - Waste handling
- (2) Create a Ministry of Science and Technology with the responsibility of formulating national science and technology policies, plans and a road map. National R&D Program should be established, implemented and integrated into the government budget and plan.
  - (3) Support domestic industry and development of production in all fields of technology by means of:
    - Evaluating all foreign investment proposals in terms of how much they open new markets and bring new technology with knowhow to our country.
    - Imported items intended for re-sale should be subject to high tariff rates.
  - (4) National strategy on intellectual property rights should be defined and implemented.
  - (5) Robust business rules and financial regulations, financial institutes and incentives should be created for investments in production and manufacturing.
  - (6) Labour policy and labour management institutions should be established to define the formal and informal rules and structures that regulate labour hiring, wages, organisation and supervision.
  - (7) Invest part of oil income in state-owned enterprises and investment funds to bring wealth to the nation.
  - (8) Establish state-level engineering and technology centres with joint R&D groups from enterprises, universities and scientific institutes. The main focus should be on reverse-engineering the imported capital goods for the purpose of acquiring the necessary technologies.

- (9) Establish technology and innovation centres to enhance innovation within all kinds of technology for commercialization, entrepreneurship and business development,
- (10) Promote private industrial R&D. Urge large enterprises to set up research, development institutes and welcome enterprises to share the state's R&D tasks.
- (11) Establish innovation funds to finance and support R&D at universities, enterprises and private innovators, to “promote sustainable growth by improving the conditions for innovations, as well as funding needs-driven research” (see section 4.5 above).
- (12) Establish a Kurdistan Foundation for Strategic Research with the objective to support strategic research in different kinds of technology and engineering that has a benefit to Kurdistan in the long term.

Finally, the most important thing in the process of technical development and industrialization is determination, endurance and passion. It is a way of thinking and acting.

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Fig. 14.1. Technical fields that make up mechatronics. Source: The homepage of Rensselaer Polytechnic Institute, www.rpi.edu

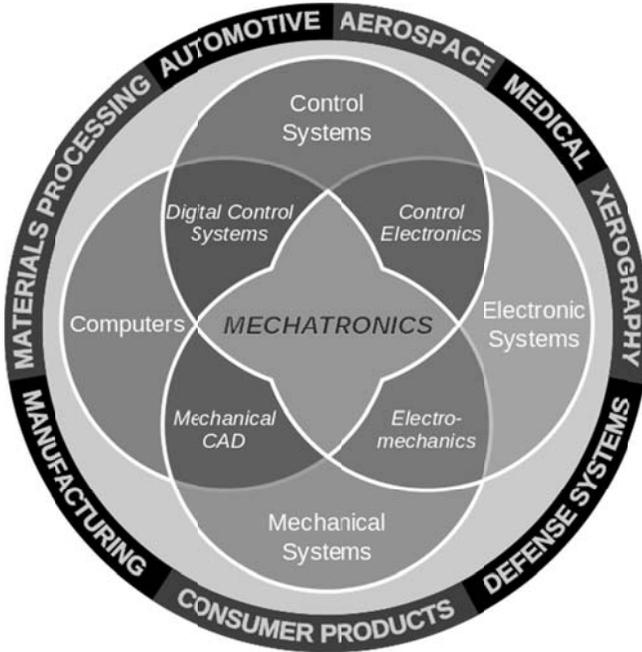


Fig. 14.2. Electrical drive system components

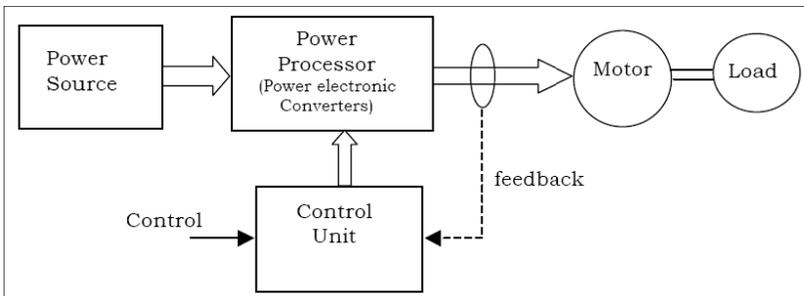


Fig. 14.3. Electrical drive system with speed and position control of Robot Joint.  
 Source: The homepage of Control Systems International Inc. (CSI),  
<http://www.ucos.com/>

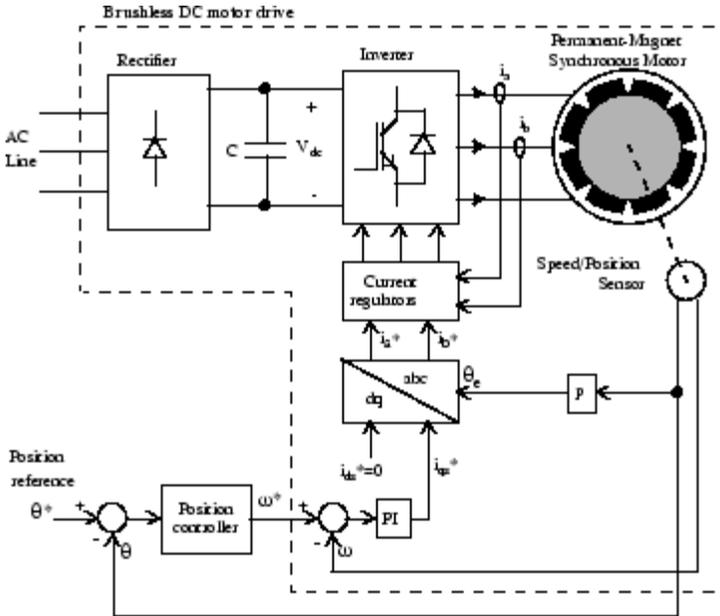


Fig. 14.4. The automated production of steel



Fig. 14.5. Advanced Automation Systems. Source: The homepage of Advantech, <http://www.advantech.com>

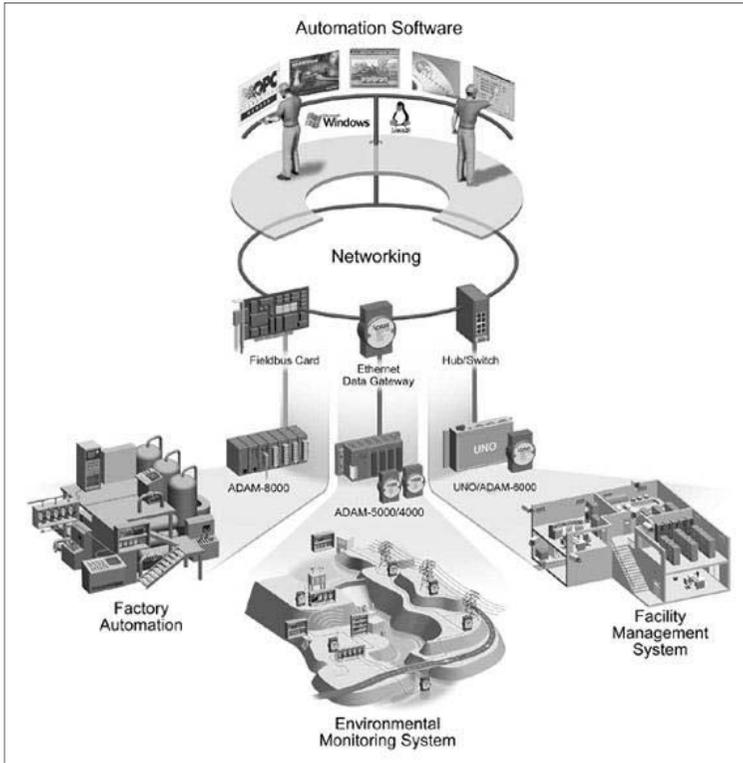


Fig. 14.6. Example of DCS. Source: The homepage of Control Systems International Inc. (CSI), <http://www.ucos.com/>

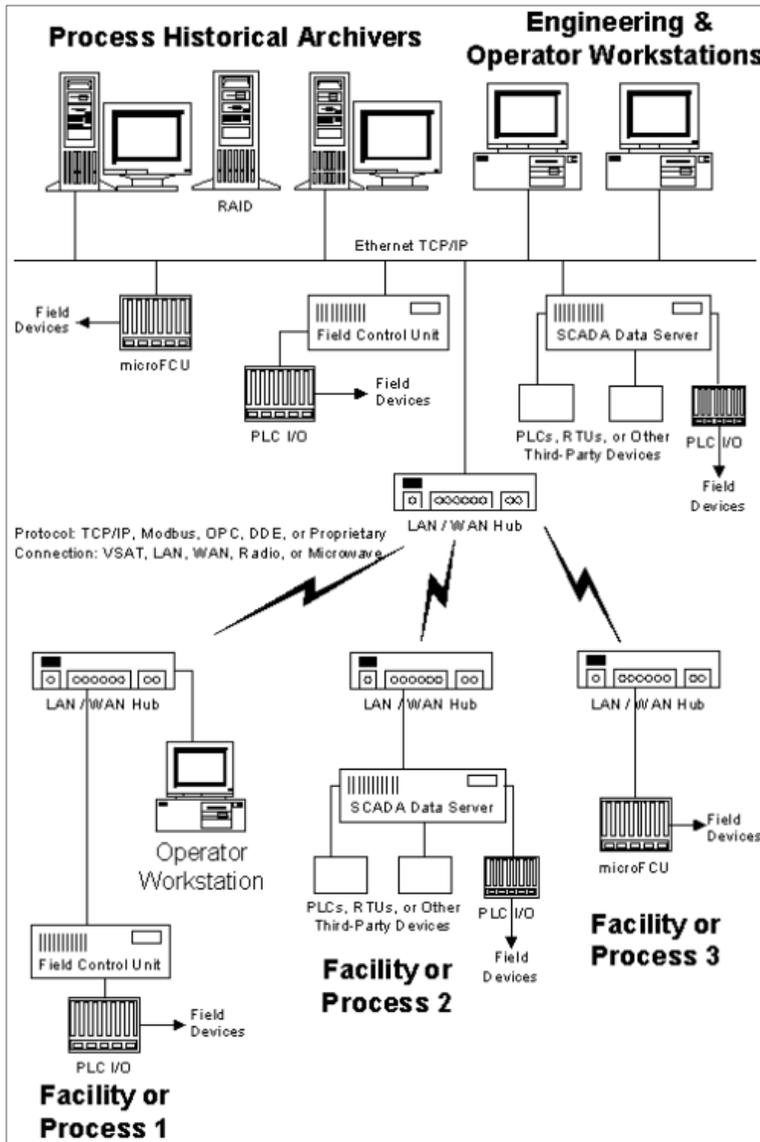


Fig. 14.7. Example of an Advanced Substation Automation System. Source: The homepage of Fortune Automation, <http://www.fortuneautomation.com/products-scada-system.html>

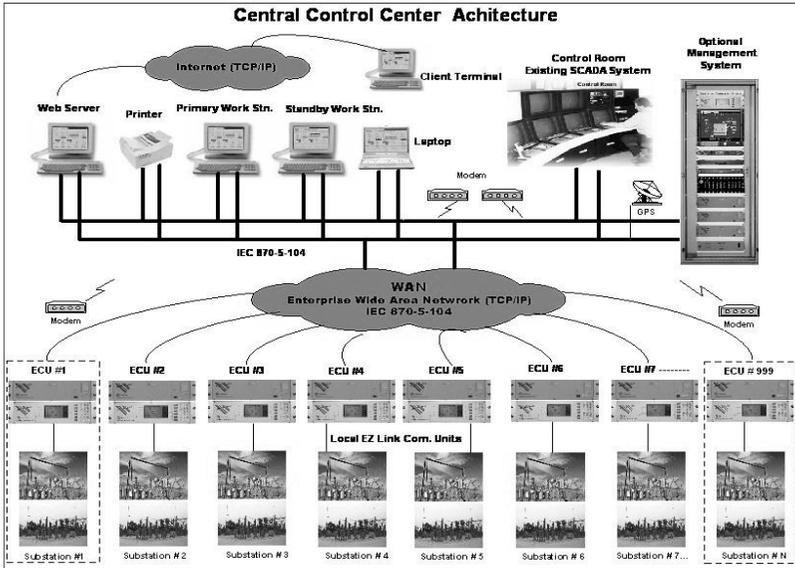


Fig. 14.8. Example of Automation system with PLC. Source: The homepage of Integrated Group, <http://www.integratedindia.com/motion-control.htm>

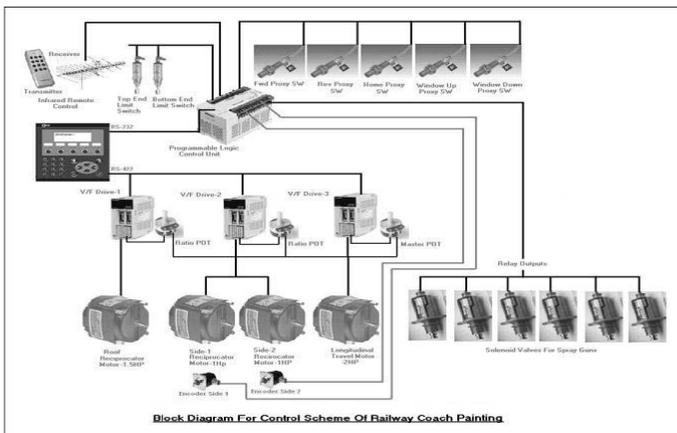


Fig. 14.9. PAC with PLC and human machine interfaces (HMIs) integrated with SCADA system. Source: The homepage of National Instruments, <http://www.ni.com/white-paper/5672/en>

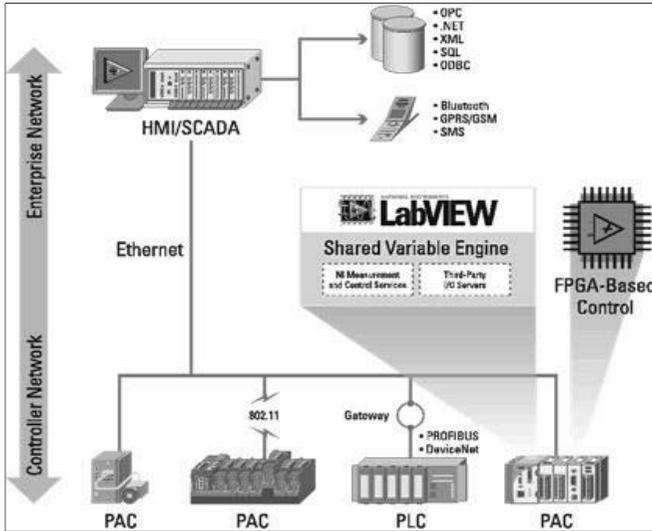
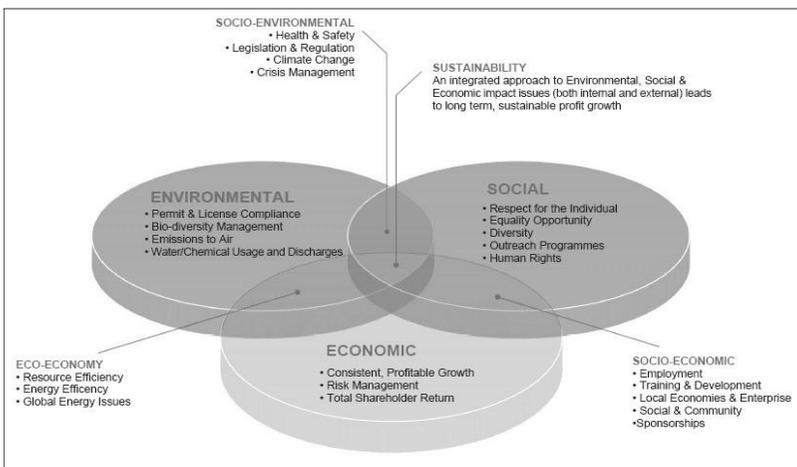


Fig. 14.10. The confluence of three constituent parts of sustainable development with examples of sustainable development on each sector. Source: Samuel Mann, “Sustainable Lens: A visual guide”, 2011



**PART VI**  
**INFORMATION TECHNOLOGY**  
**AND E-GOVERNMENT**

CHAPTER FIFTEEN

AN OVERVIEW OF E-GOVERNMENT AND BEST  
STRATEGIES FOR ITS ADOPTION  
IN DEVELOPING COUNTRIES

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**Abstract**

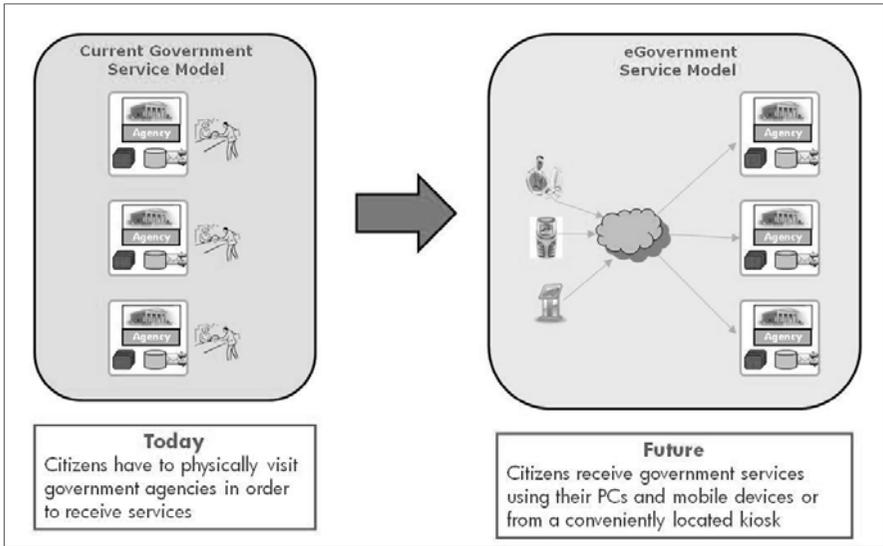
Presently, the common way for citizens to receive government services is to make a visit to the government offices. The advancement in information and communication technologies and the emergence of the internet have made it possible to deliver these services at more convenient locations that are much closer to the citizens, such as kiosks located at shopping malls, for example. In addition, it has made it possible to eliminate such a visit altogether and allow citizens to get these services through the use of mobile devices and personal computers located in their homes or business offices. The delivery of such services over the internet is commonly referred to as E-Government. The most common examples of such services include job searching for open governmental positions, requests for personal documents such as passport and driver license, and car registrations to name only a few. There are many benefits attained from the adoption of E-Government, among them the better delivery of government services to citizens, improved interactions between citizens and businesses, citizen empowerment through access to information, and more

efficient government management. Other less tangible but equally important benefits are increased transparency, less corruption, greater convenience, revenue growth and cost reductions. This chapter provides an overview anatomy of E-Government, covering common definitions, common use case scenarios, logical architecture, and key enabling technologies. The chapter will also cover the requirements and the methodology for developing E-Government, including best practices and lessons learned. Finally, the chapter will provide a highlight of E-government adoption approaches by other countries.

## 1. Introduction

Presently, the common way for citizens to receive most government services is to make a visit to the government offices. The advancement in information and communication technologies and the emergence of the internet have made it possible to deliver these services at more convenient locations that are much closer to the citizens, such as kiosks located at shopping malls for example. Also, it has made it possible to eliminate the visit altogether and allow citizens to get these services electronically through the use of mobile devices and personal computers located in their homes or business offices. The delivery of such services over the internet is commonly referred to as E-Government. The most common examples of such services include job searching for open governmental positions, requests for personal documents such as passports and driving licenses, and car registrations to name only a few. In addition to convenience in location, the technology makes it possible to provide these services 24 hours a day, 7 days a week, without waiting in line. The box on the left in Fig. 15.1 below is a graphical depiction of the current government service model in countries without E-Government, while the box on the right represents the future government services model using the internet and communication technology protocols. The goal of this chapter is to provide an overview of these promising benefits of E-Government technology.

Fig. 15.1. Current vs. future government service model



## 2. What is E-Government?

Electronic Government (E-Government) is defined as the use of information and communication technology as a means to deliver government services to citizens and businesses. There are many definitions of E-Government, ranging from “the use of information technology to the free movement of information to overcome the physical bounds of traditional paper and physical based systems,”<sup>1</sup> to “the use of technology to enhance the access to and delivery of government services to benefit citizens, business partners and employees.” (Deloitte and Touche). The common concepts among these definitions are that E-Government entails the automation or computerization of existing manual, paper-based processes and prompts a new approach to providing government services that are citizen-centric, rather than the traditional government functional organizational structure, (Rogers, 2002) i.e. services should be defined from a citizen’s point of view. In other words, services are offered based on a citizen’s life needs, such as, for example, work, education and housing activities. Fig. 15.2 is a graphical depiction of the two views. The green circle on the right lists citizen-centric views of the services. The blue

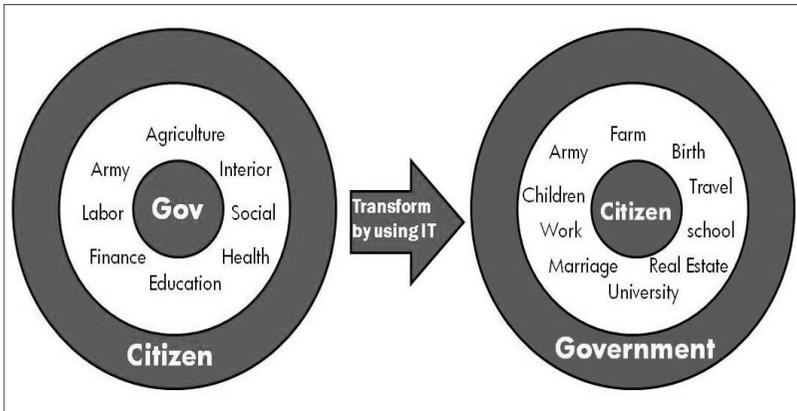
<sup>1</sup> Available from <http://www.cddc.vt.edu/digitalgov/gov-publications.html>.

circle on the left lists the services from a government-centric view. The Gartner Group takes the definition of E-Government a step further, beyond the automation and computerizing of the services, and includes the opportunity for government to enhance these services. “The transformation of public sector ... optimize government service delivery, constituency participation and internal government operations.”<sup>2</sup>

E-Government will provide real and tangible benefits to all stakeholders, i.e. citizens, government and business entities. Below is a list of some of the benefits to citizens:

- Convenience—Citizens gain easy access electronically up-to-date government services at a kiosk in a mall or in their homes, mobile devices and offices without having to making a trip to government offices. For example, a citizen can apply for a driving license or travelling document from his/her office or home and save a trip to the corresponding government agency. Additional convenience could be delivered in terms of the time flexibility and saving for the citizen, i.e. they can apply for the services at a time convenient to them, say after normal business hours, also saving in the time they to spend making the trip during working business hours.

Fig. 15.2. Government vs. citizen view of services



<sup>2</sup> [faculty.washington.edu/dtetta/egov/presentations/Overview.ppt](http://faculty.washington.edu/dtetta/egov/presentations/Overview.ppt)

### 3. What are the Benefits of E-Government?

- **Improved Service Quality**—Enabling electronic self-service for routine and frequent citizen requests, such as downloading government forms and documents, will free up the government and allow it to focus more attention on the aspects of customer service that are most challenging and complicated, such as explaining regulations. In addition, it provides the opportunity to examine the process through which a services is delivered and explore the potential for streamlining and improvement the delivery of the services in terms of consistency.
- **Drives change**—The adoption of E-Government will promote and encourage the enhancement and drive to attain efficiency in the delivery of services. For example, when delivery of a service via E-Government is being considered, it will be an opportune time to re-examine the process and eliminate any unnecessary bureaucracy. A typical example of such a benefit is the elimination of the manual review of an application for completeness and validity of the information provided. This process can be completely automated and the applicant can be informed of the review at the time of submission.
- **Bridges to all citizens**—The delivery of government services via the internet will level the playing field for all citizens. E-Government will remove the distance obstacle for citizens who are residing in remote areas and who will have to make an extra effort to travel to the government office, compared to citizens who live in the city, for example. Similarly, citizens who are physically challenged will benefit the same way.
- **Advances the democratic participation**—The application of E-Government could be extended to other areas beside services such as citizen involvement in the democratic process of governance, for example voting for an election or a proposed legislative, or any other matter that requires a citizen's vote.
- **Enhances transparency and accountability**—The delivery of services via E-Government will provide citizens with a window to view government policies, procedures, regulations and decision process. It will also provide information about government management and the decision makers involved with a particular service.

- Reduces Cost—Automating routine and manual paper-based services will lead to cost saving of the salaries of the staff required to perform the tasks for such a service.

#### **4. E-Government Maturity Model**

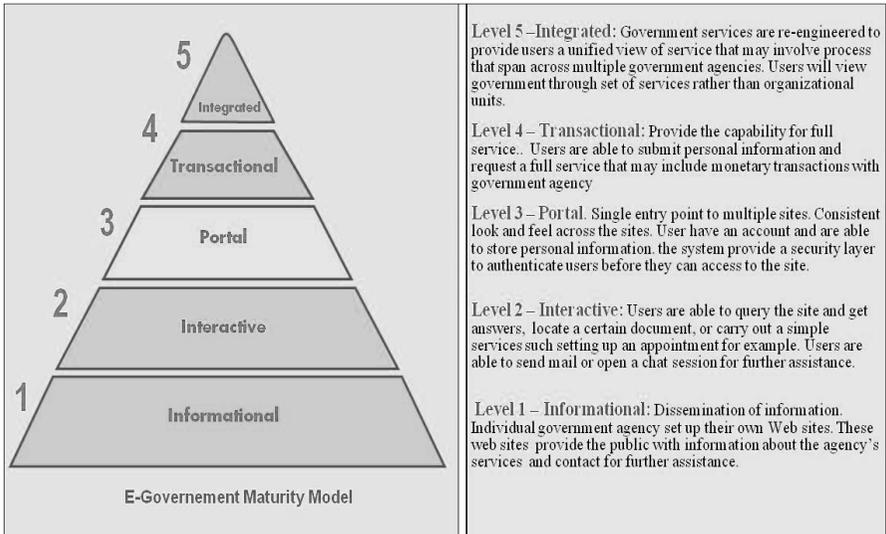
The maturity model of E-Government follows a similar path to the maturity model of E-Commerce. The key levels are: establishing a web presence, followed by providing the capability to conduct business transactions with various levels of complexity, followed by providing security and personalization, and finally providing services that require the integration among the various business components of the organization. Tapscott (1998) has provided a summary report of such a maturity evolution.

E-Government also matures along a similar development path, which starts with publishing, then interaction, followed by transaction, then portal, and finally integration (see Fig. 15.3 below). At Level 1, the publishing mode, the government's presence is through web pages that provide information, such as the type of services, and logistical and contact information. This is a one-way communication. The key purpose of this level is to provide the public with access to government information. Following this level is the need for citizens to interact by asking questions via email, or search the website and download certain documents or forms, which is Level 2, the interactive stage. At Level 3, the portal stage, efficiency, consistency and security features are added to the website. A single entry point to multiple sites will provide a consistent look and feel across the sites. Users have an account and are able to store personal information. The system provides a security layer to authenticate users before they can access to the site. These features lead the way to Level 4, the transactional stage, wherein citizens are able to perform financial transactions with the government. This would require higher levels of processing capability, as well as payment receiving and security features to be in place. At this stage, an entire transaction can be performed without making a visit to an office. Examples of such services are filing income tax, filing property tax, and extending or renewal of licenses, visas and passports.

Finally, E-Government reaches Level 5, the integration stage, where various departments collaborate and integrate their processes to provide a service. The collaboration among the departments may require existing government services to be re-engineered. An example of such a service at this stage could be the application for a government mortgage loan,

provided by the housing authority department. The housing authority will take the application and processes it. Part of the processing may involve checking if the applicant has any outstanding loan issues with other government departments that may provide loans. In such a case, the housing department may invoke the corresponding systems in these departments to make such an inquiry. All of these inquiries are automated and are behind the scenes, invisible to the applicant.

Fig. 15.3. E-Government Maturity Model



## 5. Development Approach

The development process of E-Government projects follows a path similar to enterprise application modernization projects, which is comprised of three phases: strategy, development and deployment. The strategy phase includes the following steps: setting up the vision, long-term goal, and development approach. It also includes an assessment study of the readiness for adopting E-Governance. At this phase, a prioritization list of candidate projects will be generated. At the development phase, projects are defined and developed. The last phase, deployment, is the implementation and deployment of the E-Government projects. Below is a brief description of these phases along with the steps involved:

- Strategy Phase. This includes the following steps:
  - (1) Vision and Objectives—This step involves the definition of the vision of the target state along with an articulation of the objectives with measurable criteria for success. Before embarking on any e-government projects, it is essential to have the vision defined and used as a guide. It is very crucial to have the vision shared by the staff of the organization embarking on the development of an E-Government project. The vision should reflect the needs of target citizens, i.e. the specific conditions and ambitions of society. An example of a vision statement by the Saudi Government for their E-Government initiative is cited here: "By the end of 2010, everyone in the Kingdom will be able to enjoy from anywhere and at any time—world-class government services offered in a seamless, user-friendly and secure way by utilizing a variety of electronic means."<sup>3</sup>
  - (2) Readiness assessment—An evaluation of the current state of the services being offered from a variety of dimensions such as: technology, processing complexity, organizational structure and current value. Guided by the vision and objectives of the e-Government initiative, a list of all services provided by governmental agencies must be identified through conducting a readiness assessment of each government agency. The list of services obtained should detail each service with its key information elements for later analysis purposes. Key information elements should be grouped as either Government to Government (G2G), Government to Business (G2B) and Government to Citizens (G2C). Examples of such information are number of users, frequency of use, agencies affected by the service and agencies that participate in providing the service.
  - (3) Service prioritization and road map—Listing of the candidate services to be developed with the appropriate priority level. The road map defines the timeline for the development of the candidate services. It is important that the prioritization is based on a list of criteria that have already been developed. Examples of such criteria for service prioritizations are number of potential users, number of transactions per period of time, how often the service is being used, the degree of importance of the service to users, the potential business value of the service, potential simplification of the service

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<sup>3</sup> eServices Framework.

[http://www.yesser.gov.sa/en/BuildingBlocks/Pages/E-services\\_framework.aspx](http://www.yesser.gov.sa/en/BuildingBlocks/Pages/E-services_framework.aspx)

to citizens, and potential time/resource/effort savings to government and citizens.

- Development Phase. This consists of the following steps:
  - (1) Define—Definition of the scope, requirements and objectives for each of the candidate services from a business point of view.
  - (2) Design—This step involves the design of the business processes and work flows required for each of the candidate services. Projects will be instigated to design the new candidate services in line with the strategic vision and direction prepared in the vision and objectives stage. Options (including costs and benefits) will be developed and then agreed, and the implementation strategy, for all areas, will also be developed and agreed. The approach to be taken and the detailed plans for development and implementation should be conveyed to the stakeholders, and then the "authority to proceed" would normally be granted
  - (3) Develop—Assign a project and assemble a team to develop each of the candidate services. The team will develop and deliver the services defined in the project. The development step is where most of the work is carried out, as the strategic direction has been set, the vision agreed and design developed, shared and finalized. Candidate service development and testing occupies most of the effort at this stage. Detailed implementation plans will be prepared and agreed along with acceptance criteria for the deployment.
  
- Deployment Phase. This consists of the following steps:
  - (1) Implementation—Systems for the new services are installed and tested. This may also include the implementation of the required changes to some of the existing systems. This stage covers the execution of all of preparatory activities that were designed and developed in the previous stages, including the delivery of training, the implementation of the solution to include all of the business and technical aspects, the handover of the solution to "day-to-day" operations, and the removal of legacy processes and technology
  - (2) Operation and support—Operation and support teams are identified to support and sustain the operation of the systems for the new services.
  - (3) Change management and maintenance—At this stage, a governance model to manage and control the change requests and

maintenance updates for the new services is defined and put in operation. Change management is critical to the overall success of the change. Failure to manage and control the new services in the way envisioned will undermine the benefits of the implemented services very quickly, as the organization and possibly the government agency may revert to the old practices. Program closedown activities are part of this stage. Key elements of this stage include running live operations, conducting continuous improvement, and managing performance and benefits realization.

## **6. What are the Barriers That Stand in the Path of E-Government Adoption?**

Despite the promise of significant benefits gained from adopting E-Government, there are numerous barriers that need to be overcome before E-Government can be successful. There have been many studies conducted for the purpose of documenting the major adoption barriers facing both developed and developing countries. A notable study for the developed countries is the one published by the European Commission (2012), which summarizes the barriers faced by Europe in adopting E-Government (Roushdy, 2012), containing an article that summarizes the barriers to E-Government in Egypt

Broadly speaking, barriers can be classified into the following common groups: organizational, technological, social and political (Roushdy, 2012). Fig. 15.4 is a graphical depiction of the barriers to E-Government adoption. Below is a brief elaboration of these categories:

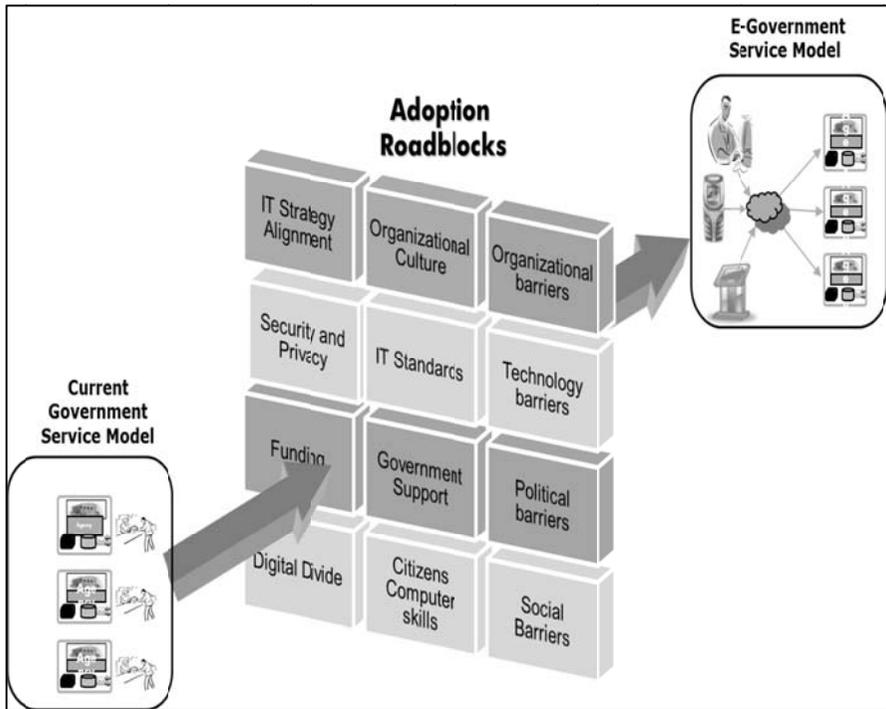
- **Organizational Barriers**—Organization will be impacted by the changes needed to adopt E-Government. The impact will be on many dimensions, such as structure, Power distribution, and culture. The introduction of E-Government will require fundamental changes and the re-engineering of business processes (Al-Shafi, 2008). Changes to roles and responsibilities may face resistance from employees who will perceive this change as a threat to their job security. In addition, automating procedures and removing human decision making from the process will also face resistance from employees who will feel they are losing their authority and power (Doherty and King, 2005). The culture of an organization can be a major obstacle to E-Government if it is based on a traditional approach and is not receptive to change and adaptability. Several studies have associated the effectiveness of a

government's performance to the adoption and implementation results of E-Government (Codagnone et al., 2008).

- **Technology Barriers**—Harnessing technology to implement E-Governance could pose a major obstacle for many dimensions, such as standards, security, and integration. Standards refers to the need for the underlying technology used by the various government departments participating in E-Government to be compatible and consistent so that they can interoperate and exchange data as needed to perform a service. Security is a very important factor that must be considered very seriously. Protecting the confidentiality of citizen's personal data is a major requirement that must be met at all times. Citizens must trust E-Government to provide their personal data and that no unauthorized person will be able to breach and access their information (Al-Khori and Bal, 2007).
- **Social Barriers**—There are many social aspects that need to be addressed for the adoption of E-Governance, such as building awareness, training and addressing the digital divide. Building awareness in the public of the existence of E-Governance is a key factor. It may require effective and widely distributed publicity campaigns to promote E-Government. Examples of activities that could be included in such campaign are providing online seminars, holding workshops, and sending posters and brochures. Computer technology is ever changing, and training employees on the technology being used for E-Government will be essential. The digital divide refers to those who have access to the internet and those who do not. There is a variety of reasons that prevent some citizens from having access to the internet and computer technology, such as location, education, age and gender. Many empirical studies have shown that many of the above-mentioned social barriers are not being treated with the required level of significance (Al-Omari, 2006).
- **Political Barriers**—Among the political barriers that face the adoption of E-Governance are government support, funding, leadership, and legal and regulation issues. Government commitment to support E-Government at the top level of authority is paramount. E-Government is a long-term endeavour that requires a sustained level of funding over the life span of the project and beyond. In addition, it requires a strong leadership to maintain not only the vision, but also the determination and drive to deliver these improved government services to citizens. The adoption of E-Government may require changes to existing laws to include the

electronic world and medium, such as electronic signatures, digital archiving of data, data protection, and computer crimes. New legislation to address computer technology-related issues must also be updated periodically to keep pace with technological innovation.

Fig. 15.4. Barriers to E-Government Adoption



## 7. Adoption Strategies

There are many approaches to instituting E-Government systems throughout the government agencies of a particular country. In this chapter, we focus on two common approaches—platform-based and project-based.

The platform-based approach is a ground up approach, starting by establishing a standard common platform at the bottom level. On top of it there is a layer of public/common services that can be utilized by the various E-Government projects. The purpose of this layer is to provide common functionality that can be utilized by the various projects. This will reduce the duplication of effort if these projects are built in isolation from each other.

The common platform and the public services layers form the foundation for building the various E-Government projects. This approach is usually adopted when there is a centralized sponsorship for E-Government initiative that spans many government agencies. Fig. 19.5 below is a graphical depiction of this approach. The advantage of this approach is that it will provide the opportunity to establish a standard implementation approach and technology across all the projects. Furthermore, it provides the opportunity for the re-use and elimination of the chance for redundancy in functionality among the projects. The disadvantage of this approach is that there is no quick-win project that can be delivered early to demonstrate the value and benefits of the E-Governance project.

In the project-based approach there are many initiatives of E-Government projects run independently and simultaneously with some of degree of coordination. There are integration and consolidation layers, and the various projects will have an interface. The integration layer will provide a common integration platform that will facilitate the integration among the various E-Government projects. The consolidation layer provides a common interface for users to access the various E-Government projects, serving as a single point of entry. Fig. 15.6 below is a graphical depiction of this approach. The advantage of this approach is that it provides a faster path for implementing a quick win for a single project and proof of the value and benefits of E-Government. The disadvantage of this approach is that it may not ensure a standard implementation approach and technology across all the projects.

There are many factors that need to be considered when deciding on an approach. Among the key factors to consider are: (1) The type of sponsorship (centralized or decentralized). As mentioned above, the platform-based approach will be more suitable for centralized sponsorship, while the project-based approach is more suitable for decentralized sponsorship. (2) The degree of consistency among the various government agencies in terms of organization, technology, culture and the level of complexity for the services they offer. The platform-based approach will be more suitable for governments that have a high degree of consistency of the above-mentioned dimensions, while the project-based approach will be more suitable for governments whose agencies are diverse in terms of the above-mentioned dimensions. (3) The timeline to deliver E-Government. The platform-based approach will typically take longer than the project-based approach because it follows a waterfall method, i.e. each phase of the project has to be completed before the next phase can start. On the project-based approach, projects can start simultaneously without dependency on each other, and this approach is therefore suitable for a shorter time.

Fig. 15.5. The platform approach

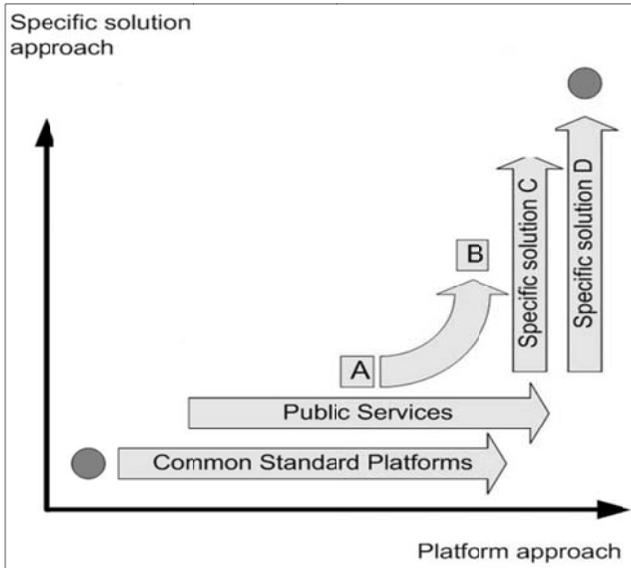
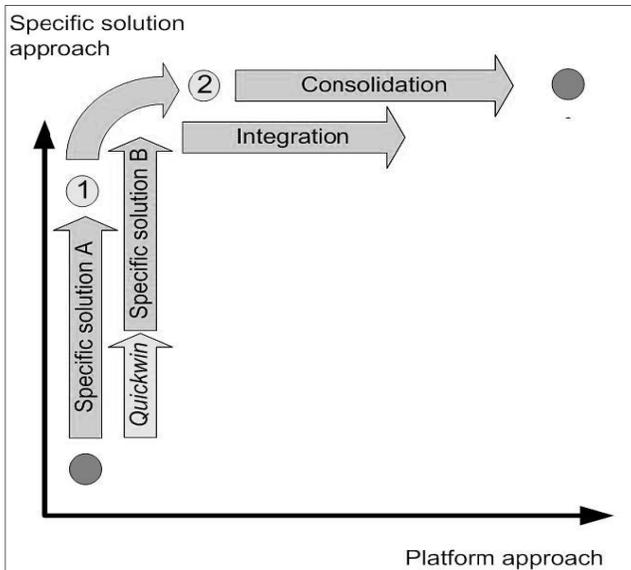


Fig. 15.6. The project approach



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## CHAPTER SIXTEEN

# E-GOVERNMENT IN THE KURDISTAN REGION OF IRAQ: SOME THOUGHTS ON IMPLEMENTATION

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### **Abstract**

E-Government (EG) is about harnessing the information revolution to improve the lives of citizens and the efficiency of government processes. If appropriately adopted, it promises transparency of a government's processes as well as citizens' participation in its affairs. However, EG projects are huge undertakings and, therefore, world governments are at different levels of EG adoption. Developing countries may also need to address additional concerns due to various cultural, financial and political issues. Against this background, in this chapter we explore the efforts of the Kurdistan Regional Government (KRG) towards adoption of EG for the Kurdish Region of Iraq (KRI). We discuss the various initiatives, already in place, such as the strategy of the Department of IT, the IT Academy, employees' ID smart cards and the annual World Kurdish Congress. The challenges are highlighted and some thoughts are presented with respect to successful implementation and adoption of electronic government in the KRI.

**Keywords:** E-Government, E-Services, E-Democracy, E-Readiness, Kurdistan, KRI, KRG

## 1. Introduction

Electronic Government or E-Government (EG) is the “use of Information and communication technology (ICT) in public administrations combined with organisational change and new skills in order to improve public services and democratic processes and strengthen support to public policies.”(European Commission, 2003) It aims at a citizen-centred vision of a government that provides effective governance, enhanced transparency of operations, better management of state resources, effective processes and efficient services through the use of the internet and information and communication technologies (ICTs).

EG projects are huge undertakings. If properly designed and developed, they promise enormous benefits including (Baptista and Cartermill, 2005; Hanna, 2012):

- Efficient involvement of citizens in government affairs
- Transparency of government operations
- Effective provision of government services and decentralization
- Increased global competitiveness and integration.

In this respect, E-Government is an “enabler for better governance, where technology is used as a strategic mechanism to modernise structures, processes, regulatory frameworks, human resources and the culture of public administrations to increase public value.”(Cteno et al., 2004) Ultimately, the goal of EG is, firstly, to enhance interaction between the various important sectors of a society including citizens (i.e. the general public), the government itself (including other government departments and employees) and the business sector (including financial, education and health care) and, secondly, to support and simplify governance.

Advanced nations are well on the way to achieving full EG, however developing nations are lagging behind; they are often at the initial stages of EG development. E-Government maturity of a government depends on the level of interaction it has with its citizens. Alpar (2005) defines three district levels of interaction between government agencies and citizens:

- **Information** level—where a government institution offers information about its services and processes via the internet. This is one-way government-to-citizens (G2C) interaction.
- **Communication** Level—where a certain amount of interaction is also available, e.g. through a citizen enquiring about something

using email or providing information by filling an online form. This becomes a two-way government-to-citizens-to-government (G2C, C2G and G2G) interaction.

- **Transaction** level—where a service can be obtained online without the need to visit a government or other institutional office. This is often referred to as business-to-customer-to-business (B2C and C2B) interaction.

Several other similar models have also been suggested in the literature (Howard, 2001; Buam and Di Mayo, 2000; Chandler and Emanuels, 2002; Layne and Lee, 2001; Windley, 2002). Mahmood (2009) provides a review of a number of staged-models and concludes that there are five general types of interaction between a government and its citizens. This gives rise to a five-stage model for the adoption of E-Government, with the following levels:

- **Informational**—this refers to the provision of often static information via government websites, as a one-way information channel.
- **Interactive**—this provides a two-way interaction for the provision of further information, as required by citizens.
- **Transactional**—this refers to the provision of complete transactional services via internet technologies.
- **Integrated**—this refers to the full vertical and horizontal interaction between government departments and seamless integration of disparate government services.
- **Participative**—this refers to the highest level of interaction (e-democracy) where citizens participate in the development and adoption of government processes.

Whereas the developed nations are at the fourth and fifth stages of the above model, the developing nations are lagging behind, and depending on the resources they have at their disposal they are at different stages of development.

The aim of the current study is to examine the state of affairs with respect to the adoption of EG in the Kurdistan Region of Iraq (KRI) and present some thoughts as to how the Kurdistan Regional Government (KRG) can further progress to implement an effective EG.

## 2. E-Government (EG) in Developing Countries

As mentioned above, world governments are at different stages of EG adoption. Developing nations are at least at stage 1, i.e. at the “one-way information stage” where they have a portal linking the websites belonging to its various ministries and departments. Such portals often provide static information about the services, opening/closing times and “how to contact” details etc. Whereas it is not too difficult to develop a simple portal, the commitment to ensuring timely updating and the currency of website information is often lacking. In the case of developing countries, there are numerous additional issues that hinder the satisfactory adoption of EG, including:

- Lack of political stability of the nation and its government (Peters, 2005)
- Lack of will and commitment of political leaders
- Inadequate economic and governmental structures (Peters, 2002)
- Lack of financial support (as, for example, laying of adequate infrastructure is expensive)
- Lack of regulatory and legal frameworks (Peters, 2002) and controls
- Lack of easy availability of ICT technologies to general public
- Lack of technical expertise and in some cases lack of computer literacy
- Unwillingness of citizens to accept novel technologies and processes.

Even when political will and commitment is present and there are enough financial resources, it is important that adequate e-readiness assessment of the nation is carried out before EG projects are undertaken. Although each government has its own priorities for the provision of government services, e-readiness of a nation covers the assessment and nature of at least the following key aspects: (Peters, 2002)

- **ICT and Physical Infrastructure**—this refers to the current state of the telecommunications industry of the country, availability of secure internet to the citizens, adequate bandwidth, and robustness of network connections and related provision, etc.
- **Accessibility and Connectivity**—this refers to the availability of ICT to the citizens (including the commercial sector), e.g. the

number of computers/telephones/internet usage per 1,000 people, affordability of ICT and level of computer literacy, etc.

- **Human Skills**—this refers to the availability of ICT expertise and management skills, citizens' ICT skill levels, provision of ICT education and training, uptake of e-commerce by citizens, willingness of citizens to accept the innovative technologies, etc.

The Kurdistan Region of Iraq (KRI) is an emerging economy that gained autonomy in 1992 when the first elections were held. It also has the same generic issues that many developing countries have. However, in the last decade, KRI has emerged as a reckonable force with a strong economy that is growing quickly. Evidence suggests that the Kurdistan government has the commitment and the will to overcome the remaining barriers to develop its nation and advance its economy. Their annually-held World Kurdish Congress (World Kurdish Congress), inviting world-renowned speakers to benefit from their ideas, is one clear example. In the following sections, we first introduce KRI and then discuss various initiatives that the KRG has already introduced.

### **3. Kurdistan Region of Iraq (KRI) and the Kurdistan Regional Government (KRG)**

The Kurdistan Region of Iraq (KRI) is an autonomous region in federal Iraq. It has a young and increasingly prosperous population of over four million and covers an area of approximately 40,000 square kilometres. It borders Syria to the west, Iran to the east and Turkey to the north. KRI has three governorates of Duhok, Erbil and Suleimaniah with Erbil (locally known as Hawler) as the capital of KRI. Iraq's Constitution recognises the KRI (approved by a national referendum), the Kurdistan Regional Government, the Kurdistan National Assembly and the Peshmerga guard as the legitimate regional entities. Whereas there are still problems of security in Iraq, KRI is a peaceful and stable region. Since March 2003, not a single coalition soldier has died nor a single foreigner been kidnapped in the areas administered by the KRG (2012).

Kurdistan was a troubled region, but in the last ten years or so the region has achieved remarkable progress in rebuilding the infrastructure while consolidating the foundations of governance. The KRI is now an emerging democracy and although KRI is committed to the democratically approved Iraqi constitution, it has its own democratically elected government, with an independent cabinet with nineteen ministries and a prime minister. The current government of KRI,, which is a strong

coalition of several political parties, was elected in May 2006. The current, seventh, cabinet has included the following in its priority agenda (KRG, 2012): (1) to protect and expand upon the achievements of the previous cabinet; (2) to maintain critical initiatives of the previous cabinet, and; (3) to resolve the issues and shortcomings.

The targets include ensuring transparency, horizontal and vertical integration between departments, careful public spending, correct external visibility as well as enabling its citizens to progress and fully participate in governmental affairs.

The KRG has been very active in implementing reforms in all areas of its functioning. Education, commerce, openness and the citizens' involvement have been the core items on the main agenda. A liberal investment law ratified in 2006 offers foreigners incentives to invest (in areas such as agriculture, banking, communication, construction, education, technology, energy, healthcare, professional services, oil and gas), tax holidays and freedom to repatriate profits. (See Kurdistan Regional Investment Law, 2006) The KRI Investment Board oversees and promotes foreign and local investment. The Ministry of Higher Education and Scientific Research (MoHESR) has the responsibility for education and research. Currently, there are approximately ninety-five thousand students in institutions of higher education, and the percentage of male to female ratio is close to 50:50, and there is no tuition fee (MHE, 2012). A new vision for the future of higher education in KRI was adopted by the KRG in 2009 (Vision, 2012): The region's economy is booming and there is huge demand for experienced professional and scientists; this is one major area that the new vision intends to address. Ensuring independence of universities and redrafting the higher education law is also high up on the agenda. The KRG Department of Information Technology (DoIT) has the vision of: (1) modernising of the government through the use of technology; (2) providing better services to people; (3) enabling government services to be more efficient, and; (4) making it easier to live and do business in the KRI.

#### **4. EG Adoption in KRI**

In KRI, the majority of services in areas such as healthcare, education, electricity, household water supply, roads, municipality, security and law enforcement and recreation are provided in the traditional way. Although, a well-developed portal exists ([Krg.org](http://Krg.org)), providing information about the KRI, the KRG as well as any recent news. The website is available in four languages including English. It also provides information about the

structure of the KRG and briefly introduces the government programmes with respect to government reforms, unification of institutions, externality and public spending. There are also links to certain “related websites,” however it does not provide links to the KRG’s various other departments (such as the Department of IT, the Ministry of Higher Education and Scientific Research, etc.). There are separate detailed websites belonging to various departments and ministries and the strategies and initiatives of these departments are worth noting. It would be useful if the KRG portal was updated to link the various ministries and other KRG departments.

#### 4.1 Department of IT (DoIT) Initiatives

The DoIT website (Krgit.org) articulates its IT strategy and initiatives. This department is more active than any other in the KRG with respect to setting up ICT infrastructure in the region and the development and implementation of e-services. The introduction of ID smart cards for all KRG employees is a flagship project of DoIT (discussed later in this chapter), together with the commitment to introduce a robust communications network within the KRI.

A close examination of the DoIT strategy suggests that there are elements and beginnings of the introduction and adoption of electronic government in KRI. The objectives of the DoIT (as shown in Table 16.1 below) are based on seven “vision elements” as follows<sup>18</sup>:

- IT capacity, IT infrastructure, IT penetration
- IT governance, E-services, IT funding
- IT policies.

**Table 16.1 DoIT objectives and relevant comments on objectives**

DoIT Vision Elements	Main objective of Each Element	Comments
IT capacity	Increase in IT literacy in “government departments” Adopt a better IT governance structure and Increase the existing IT talent.	There needs to be an increase in IT literacy of the citizens also (*1) Governance is highly important—emphasis is perfectly valid A capacity building initiative is already underway

<b>IT infrastructure</b>	<p>Increase connectivity between government departments</p> <p>Increase shared infrastructure</p> <p>Develop applications “for government employees”</p>	<p>This is the basis for G2G (government to government)—will also provide horizontal and vertical integration<sup>11 25</sup></p> <p>This will help to reduce capital expenditure, reduce duplication and conserve resources</p> <p>This objective will, hopefully, look into the prioritising of EG projects. However, applications for citizens access must also be provided (*2)</p>
<b>IT penetration</b>	<p>Evaluate participation of IT companies</p> <p>Increase IT education, generally and update curriculum in education sector</p> <p>Evaluate PC access and use, generally</p>	<p>This will help to assess the existing capabilities to conduct gap analysis</p> <p>This resolves the issues highlighted as *1 above</p> <p>This is useful to assess the existing use of internet and communications technologies to conduct gap analysis<sup>11 25</sup></p>
<b>IT governance</b>	<p>Assess the available expertise</p> <p>Introduce project management frameworks and methodologies</p> <p>Learn from others experiences</p>	<p>This will help to conduct gap analysis to determine the required demand</p> <p>A worthwhile aim to increase efficiency</p> <p>Always useful</p>
<b>E-services</b>	<p>Provide informational and transactional e-services</p> <p>Develop common applications</p> <p>Increase digital content</p>	<p>This will, hopefully, put the EG initiative between levels 2 and 3 on a 5-level EG adoption maturity model as outlined by Mahmood and Moatshe<sup>11, 19, 25</sup></p> <p>This resolves the issues highlighted as *2 above</p> <p>Some careful considerations are needed here as content management and data mining techniques will also need to be investigated and deployed (*3)</p>

<b>IT funding</b>	Develop funding frameworks and evaluate funds needed  Develop procurement processes	Careful considerations are needed as estimation of funds required is not easy and financial resources are never in ample supply (*4) This is very important—outsourcing is also a valuable strategy
<b>IT policy</b>	Develop relevant standards and policies  Update legislation and regulatory frameworks	Standards are always an issues—it is useful to consider these at the beginning It is important to update legislation to ensure data privacy, confidentiality etc. amongst other regulatory frameworks (*5)

Within the **e-services** component, the seven objectives to be achieved are as follows:

- Informational e-Services—to be made available around the clock via multiple channels
- Transactional e-Services—to be available 24/7 via multiple transmission channels
- Central common applications—to be available across all government departments. ID smart cards are an example of such a common application (mentioned later in this chapter)
- Kurdish language interface—to support all major end user applications
- Official Kurdish language keyboard
- Kurdish digital content—to be increased and enhanced
- Kurdish electronic translation facility—to be made available in all government divisions.

Analysis of Table 16.1 suggests that the necessary strategy and vision are in place. Although this vision relates to the DoIT strategy, it serves extremely well with respect to providing a well-founded basis for at least a partial adoption of an efficient EG in the KRI. However, before embarking on the road to EG or designing and implementing EG projects, it is imperative that EG readiness of the government and the nation is correctly conducted. There is a need to do more in certain respects such as the points mentioned above as \*3, \*4 and \*5 in Table 16.1. What is needed,

initially, is another government department to oversee the strategies in action and make the departments aware that their local missions fit very nicely in a bigger picture of adoption and implementation of an efficient EG.

The DoIT objectives, if achieved, will set the groundwork. The main aims (as shown in the second column of Table 16.1 above) will, hopefully, evaluate the current state of the government and the nation. What seems to be lacking at this point is mentioned in the third column, and some relevant comments are also provided.

## **4.2 Other KRG Initiatives**

### **Ministry of Higher Education and Scientific Research (MoHESR)**

The MoHESR website ([Mhe-krq.org](http://Mhe-krq.org)) provides information about the ministry and articulates its vision for higher education in Kurdistan. The strategy was presented to the KRG and adapted by the ministry in 2009. It places an increased emphasis on quality of provision, audit, renewed structure and funding schemes including scholarships. The vision will hopefully reform the complicated and outdated higher educational system that the KRG inherited from the “old Iraq.” Whereas the strategy is well formed, there is no indication of provision of e-services developed by or within the MoHESR, and so much needed work is required to be done if EG adoption is to be further enhanced.

### **ICT Infrastructure in KRI**

Until about 1991, KRI lacked in ICT and network infrastructures (Shareef and Arreymbi, 2003) in the following ways: (1) the communications system was limited; (2) telephone landlines were available only in the big cities such as Erbil (the capital); (3) connections between Erbil and other cities were almost non-existent; (4) there were no mobile communication networks; (5) there were no ICT facilities in government departments, and; (6) there was a UN embargo on the Iraqi regime that also affected Kurdistan. However, nowadays, the new KRG cabinet has implemented some modern technologies to try to alleviate some of the problems (Shareef and Arreymbi, 2003).

The Ministry of Communications has successfully implemented several projects, resulting in the communications system in Kurdistan being among the most advanced in the region. Numerous communications companies (wireless and mobile) have a presence in all provinces of the

KRI. Some of the well-known names include Pasha Net, Dost Net, Spider Net, Cell Net, Zozik Ner, Via Telecom, Mobi Tel, etc. This successful outcome is due to the following (Council of Ministers, 2012):

- provision of mobile services by the private sector firms backed by the Ministry
- Provision of internet service assisted by the Ministry
- Installation of new telephone exchanges
- Installation of lighting cables connecting telephone lines with the surrounding and European countries
- Provision of wireless telephone lines.

Although the majority of the companies are wireless, the infrastructure is rather weak, however most of the ministries are now connected via a 6000 km of fibre optical cables.<sup>21</sup> All this development, coupled with the new strategies of the DoIT, will help the KRI to further advance the adoption of EG.

### **Employee ID Card Scheme**

This is a DoIT initiative, within the e-services element of the broader IT strategy. The ID Card Directorate has its central office in the Council of Ministers, with six sub-offices spread across the Kurdistan Region. The project is being developed in collaboration with Emirate computers, Hyper Link, Fargo and Gulf Net Security. The objective of the scheme is that, in the fullness of time, all KRG employees will have biometric ID smartcards. According to the KRG Employee ID Card Directorate (KRG, 2012), four of the offices are fully operational and are issuing thousands of ID Cards every month. Project cost is estimated to be US \$4.7 million, funded by the KRG.

### **IT Academy**

This is another DoIT initiative. The academy, established in 2009 in partnership with Microsoft, serves as a learning and training centre for government employees in various subject areas, including IT and project management. It also organises seminars, conferences and workshops. The academy is also available for use by non-governmental organisations for educational purposes.

## **5. Some Thoughts on the Implementation of EG in the KRI**

Some of the challenges generally faced by developing countries (as mentioned above) also apply to the KRI. Other issues that are particular to the KRI are as follows (Shareef et al., 2010):

- Technological challenges—these refer to creating ICT infrastructure, providing internet/computing skills, providing computing/ICT capability, inter-operability of computer systems, developing relevant standards and developing connected networks. In this respect, developing a reliable ICT infrastructure, robust internet broadband connections and availability of ICT tools and provision are probably the biggest challenges to the transition to an E-Government. Although the IT Academy is a useful initiative, lack of technical expertise is still a challenge. Since the government is politically stable, this should help alleviate some such issues.
- Lack of integration and coordination between governmental agencies—currently, KRG ministries and departments are independent and have their own IT divisions that design and develop relevant IT projects. Currently, the sharing of information between departments is through traditional means. The lack of coordination is clearly visible. The KRG portal provides an example to this effect. This issue can be easily resolved through initiatives by the DoIT and development of “common” e-services.
- Lack of e-commerce opportunities—currently, the banking services in the KRI are rather limited. This is partly due to a lack of robust ICT infrastructure and networks and partly due to the lack of IT literacy and an unwillingness on the part of the citizens to change the traditional method of operations. Electricity outages, even in big cities, are another main reason for the lack of e-business provision. However, these issues can be resolved through better and efficient governance.
- Economical and societal challenges—these refer to the economic structures within the existing societal structures as well as citizens’ attitudes towards technology and cultural preferences (e.g. visiting a branch of a bank rather than making an electronic transfer). Since the KRI is facing challenges with respect to the uptake of e-commerce and e-business, there are also inherent associated economic concerns. In this scenario, funding and management of projects becomes an issue that in turn hinders progress. Although

the KRG is coming up with funds, financial resources are never enough. In addition, citizen interest in acquiring and using the internet for transactions or e-commerce is very limited.

Notwithstanding the above, it appears that the Kurdistan Regional Government has the commitment and the will to overcome the barriers to develop its nation and advance its economy. Although the official portal does not even link up to the various ministries and other KRG departments, strategies devised by agencies such as DoIT and initiatives such as employee ID smartcards and the IT academy (as mentioned above) are useful first steps towards an effective EG. The KRG's commitment to support the Kurdish language, their intention to increase the digital content in the Kurdish language, and their development of the Kurdish user interface to be introduced in the E-Government applications will also help to further improve the situation. The KRG's intention to offer informational e-services as well as the provision of the priority transactional e-services in the first five years is a welcome promise and a worthwhile aim. The involvement of local private IT companies in such projects will further improve the economic status of the country. There are encouraging signs that the KRG is intent on pursuing its missions for successful economic and EG upturns.

When developing E-Government projects, however, it should also be noted that the entire process requires at least the following (InforDev, 2002) which, it appears, the KRG is well aware of:

- A clear vision and a coherent and comprehensive strategy—it appears that the KRG has the foundations of such a strategy
- The nation's political will and strong leadership—it appears that the present KRG is serious about achieving the set objectives
- Robust physical infrastructure—this is clearly in the agenda as can be seen by the presence of companies such as Pasha Net, Spider Net, Cell Net, Zozik Ner, Via Telecom and Mobi Tel
- Regulatory environment (for legal frameworks)—a liberal investment law ratified in 2006 to offer foreigners incentives to invest suggests sound commitment of the leadership
- Comprehensive training programme for citizens—the IT Academy is the first step in the right direction.
- Citizens' ability and willingness to make full use of the available technologies—various training initiatives provide the evidence to this effect.

Mahmood (2009) also suggests the following steps for a successful adoption of E-Government:

- (1) Develop a broader vision, strategy and a long term plan
- (2) Conduct an e-readiness assessment to perform a gap analysis
- (3) Identify a particular E-Government project (in line with the broader vision and strategy, as in step 1)
- (4) Develop the design strategy for the development of this project
- (5) Execute the project. taking on board (i.e. in consultation with) all relevant stakeholders
- (6) Repeat steps 3–5.

EG projects are huge undertakings and require not only funding, technology and necessary skills, but also the commitment and willingness on the part of the political leaders. It is clear that through the DoIT vision and objectives, the objectives of the MoHESR and the liberal investment laws of the investment board, e-readiness is already being conducted.

## **6. Conclusion**

The Kurdistan Regional Government (KRG) is being highly proactive in implementing reforms in all areas of its functioning, including education, commerce and openness, as well as with respect to its citizens' involvement. Numerous strategies are in place, for example, though the initiatives of the Ministry of Higher Education and Scientific Research (MoHESR), the Ministry of Communications (MoC) and the Department of IT (DoIT), such as the IT strategy, the IT Academy, the development of ICT infrastructure, employees' ID smartcards and the annual World Kurdish Congress. The government is already well on the way to developing an efficient EG, although the KRG may not be fully aware of it as the basic elements are inherent in the local departmental initiatives. An example of this is briefly outlined in Table 16.1 above.

Although, progress is taking place, it is not apparent to the citizens of the KGI. The KRG needs to be aware of this and organise a plan to ensure that good work is exhibited and effectively advertised. There is no point in having the infrastructure, technology and projects in place if the general public do not know about them or do not have the facilities to avail of the available opportunities. Some basic changes are not too difficult to implement, e.g. updating the KRG portal to link with other websites belonging to other ministries and government departments, and hiring

consultants from outside the KRI with appropriate expertise in the areas of finance, education and health, as well as electronic government.

Although developing countries have numerous concerns due to cultural, financial and political difficulties and the KRI has its own fair share of concerns, the KRI and its people are progressing well. The commitment and the will of the KRG is already bearing fruits, however more efforts need to be made, as follows:

- Increase the computing literacy of the masses (through increased number of training centres and opportunities)
- Proliferate the ICT technologies to the masses (also removing the fears of employing innovative approaches)
- Increase the affordability of the ICT technologies (by raising the purchasing power of the citizens, which is not easy, or through discounted prices)
- Increase the robustness of the communications and network systems (by introducing appropriate regulations for the communications companies to follow)
- Develop necessary standards and regulations (e.g. with respect to privacy and confidentiality of the information and personal data).

It is hoped that that the thoughts presented in this chapter will help to speed up the process of adopting the electronic government in the Kurdistan Region of Iraq.

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## CHAPTER SEVENTEEN

# KNOWLEDGE SOCIETY AND SUSTAINABLE QUALITY HIGHER EDUCATION IN KURDISTAN

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### **Abstract**

In today's fast moving world, the quality of higher education is fundamental to a sustainable economic development. Sustainable growth of investment in the quality of higher education is considered an important measure of scientific and economic development. The challenge for developing and underdeveloped countries usually begins with skills shortages as a result of two important issues: (1) The lack of prolonging sustainable investment in the quality of higher education, and; (2) The outward migration of highly educated and skilled personnel (the brain drain). This chapter points out the typical shortcomings of developing countries and underdeveloped regions such as Kurdistan that causes the aforementioned problems, and suggests an innovative solution to overcome the impediments of creating a sustainable knowledge society. This solution involves: (1) A centralised research management model, called the Kurdistan Research Sustainability Model, to manage and direct all research efforts in Kurdistan based on long-term scientific and socio-economic plans, and; (2) Establishment of a world class research centre called Centre for Science Informatics and Research Management (CSIRM) for applied science informatics, the first of its kind in the world. This centre boosts the capability of the Kurdistan region to achieve a sustainable high quality research education system. The establishment of such a system requires the participation of the Kurdish scientific elite

across the world, and the KRG can play a vital role in bringing them to Kurdistan for this purpose.

**Keywords:** Higher Education, Knowledge Society, Informatics, ICT, Sustainable Scientific Research.

## 1. Introduction

In a world in which governments are moving towards the use of technologies such as cloud computing and the total integration of e-government services (Sanati & Lu 2012), the need for public digital literacy is increasing and changing rapidly. This requires a steady focus on the individual's capacity for being able to keep up with ICT developments in their society. Digital literacy is about the ability to utilise the opportunities generated by ICT (Sanati 2004), and to use them significantly and innovatively in education and work. Today there is a huge discrepancy between the proportion of people in underdeveloped and developed countries that have access to quality higher education. About 80% Age Participation Rates (APRs) are becoming the norm in developed countries compared to less than 50% ten years ago (UNESCO 2003). With the increase in the rate of participation in the knowledge society comes a shortage of experts, skilled knowledge workers and educators to lead it. The younger generation of Kurdistan increasingly wants tertiary education and the Kurdistan Regional Government (KRG) must see this as essential, not only for closing the gap between richer countries but to train a generation of highly skilled people in modern technologies such as ICT to lead the region in all fields of science and technology. The KRG regularly spends a substantial amount on sending young and talented students to Western countries in the hope of lifting the scientific standards of Kurdistan universities when they return. This effort seems, to some extent, to be achieving good results, producing a highly educated workforce (academics) for tertiary education institutions (KRG 2012). However, there are two main problems with this:

- (1) The outward migration of highly educated and skilled personnel, or in some cases non-returning students, can offset the efforts of producing them, if not completely over run it
- (2) The chronic lack of appropriate research and development architecture to absorb the returning highly-educated individuals to create a sustainable system of high-quality PhDs in Kurdistan.

The world's workforce is becoming increasingly fluid across national, regional and international borders due to economic globalisation and the development of advanced communications and information technologies. In this context, knowledge has emerged as a commodity which has in turn placed pressure on existing national systems to ensure they are competitive in the international marketplace.

The remaining educated who returned to Kurdistan from liberal, democratic and highly sophisticated Western systems of education encounter an environmental and cultural shock. Therefore, there is an urgent need to create a sophisticated liberal democratic system of managing the higher education, research efforts and resources (the future leaders of the Kurdistan knowledge society) that can absorb and efficiently utilise the capabilities of this invaluable human assets of a highly-educated work force.

This chapter is organised as follows. Section 2 gives insight on the current state of the higher education system in general, and research in particular, in Kurdistan, as well as major issues facing the improvement of this system. Section 3 proposes a new model for scientific research management in Kurdistan based on the theory of systems dynamics. Section 4 highlights the importance of the establishment of a centralised research authority to plan and perform the strategic management of all research efforts in Kurdistan.

## **2. The Current State of Higher Education in Kurdistan**

### **2.1 Labour market and educational output alignment**

Poor coordination among educational institutions on the one hand, and between them and the labour market on the other, has reflected poorly on the compatibility between the adopted educational and applied programs and the needs of the labour market and economic system requirements, particularly in technical education programs. Yet, according to the 2011 draft of the Regional Development Strategy for the Kurdistan Region 2011–2016 (MOP 2011), the number of universities in Kurdistan have increased from just three in 2003 to eight in 2009. In addition, the number of government-funded colleges has increased from thirty in 2003 to ninety-one in 2008, and to one hundred in 2009, and the number of colleges in private universities reached twelve in 2008 and 2009. The number of technical institutes and colleges increased from twelve to twenty institutes and from two to three colleges for the period 2003 to 2009. Despite the improvements achieved in various buildings and

university facilities, especially during 2007 to 2009, university facilities (classrooms, laboratories and others) still suffer from overcrowding as a result of limited capacity. It is worth mentioning that the number of universities per capita in most Western countries is less than that of Kurdistan—for example, in Australia there are only around forty universities even though Australia is considered one of the major exporters of higher education in south east Asia, allocating thousands of student places to Asian students (international students make up nearly 30% of university students in Australian universities).

According to the *International Journal of Scientometrics, Infometrics and Bibliometrics*, the total number of higher education institutions in the world is 17,036.<sup>1</sup> Taking into consideration the MOP statistics on the number of universities in Kurdistan (140), a quick analysis reveals that Kurdistan has approximately 0.85% of the total number of universities in the world with only approximately 0.1% of its population. This means that in Kurdistan the proportion of universities to the population is 850% (8.5 times), more than the total average for the world. An even more interesting fact is that (according to the MOP report) there is one university or collage in average for every 612 students. These statistics, if analysed in depth, can point to some interesting questions such as: “how can the quality of teaching and research (if any) be maintained, considering the education budget of KRG compared with higher than average countries in the world generally and Western countries in particular?”

## 2.2 Current research efforts

The majority of Kurdistan universities are state-run institutions. Kurdistan is comprised of eight governorates, and there is at least one university in every city of those governorates. None of these universities are even ranked in any credible international university ranking systems. There is no evidence that they have produced any credible scientific publications in any high ranking international journals. However, I don't intend to discredit the achievement of valuable individuals within Kurdistan universities who have made large contributions to the scientific community. It is also with deep regret that we have found no digital evidence of any journals published by any Kurdistan university (Rafat 2012). One of the biggest problems in the Kurdistan higher education system is that there is very little digital connectivity and exchange between the current universities.

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<sup>1</sup> <http://www.webometrics.info/en/World/Brics?page=1>

Amongst all universities, the Kurdistan University in Hawler and the American University of Iraq (Sulaimani) have the highest teaching quality, and within them only the Kurdistan University appears to be conducting any research (UKH 2012). There have been some activities establishing international connections with other universities around the world. However, there is still no evidence of any online digital library in the Kurdistan higher education system which is an enormous drawback for collaborative academic and scientific research.

Research funding is also an issue, and if it is not addressed appropriately it could become an enormous waste of valuable funds that could otherwise nurture talents and capabilities to bring innovation and prosperity to Kurdistan, if planned and implemented properly and transparently. The KRG Ministry of Higher Education (MHE) is responsible for distributing research funds allocated by the cabinet, however there is no evidence of any transparent information on the funds and the processes in which they are to be distributed (MHE 2012). An interview with Dr Sherko Kirmanj, the former (recent) director of human capacity of the MHE, reveals that the ministry distributes the fund between universities in Kurdistan, and individual universities are responsible for spending the money. Dr Kirmanj has added "In fact there are no accountability processes in places to regulate the use of funds" (Kirmanj 2012). In other words, in the absence of a central national research regulator, funding is not based on merit or competition. Hence, there is no grand plan of research and development that can direct the research efforts in Kurdistan to match the long-term socio-economic plans. Most of the current research efforts are focused on surveys, literature reviews and compiling other works, which are published in internal (non-peer reviewed) publications of the same university without any innovative input or originality, seldom read by the members of the same university.

### **2.3 The brain drain**

According to the International Monetary Fund, the Islamic Republic of Iran experienced a substantial loss of highly-educated individuals within the region (Detragiache & Carrington 1999). A report by the International Monetary Fund in 2009 indicated that Iran tops the list of countries losing their academic elite, with an annual loss of 150,000 to 180,000 specialists. This is equivalent to a capital loss of \$50 billion. There are many more similar statistics about Iraq, Pakistan and even India. The UNDP estimates that India loses \$2 billion a year because of the emigration of computer experts to the U.S. and other Western countries. In 2001, Indian students

going abroad for their studies costs India a foreign exchange outflow of \$10 billion annually (UNDP 2001), and this figure has been growing ever since.

The KRG has started sending hundreds of talented young students to Western universities (KRG 2012), aiming to develop human capacities in the Kurdistan Region in the field of higher education. An annual KRG budget of 120 billion dinars (US\$ 100 million) has been allocated to the scheme. This in itself is a great achievement by the KRG to foster and encourage change and improvement at all levels of higher education architecture in Kurdistan. A brief look at what is happening in the region in terms of higher education and scientific research management can give an invaluable lesson on “what to do” and “what not to do.” The Ministry of Higher Education (MHE) indicates a planned new system of PhD admission to overcome the shortcomings and defects of the current system. The MHE website<sup>2</sup> says:

Currently, the admission plan to doctoral programs is by no means linked to the nation’s market need or the long term national strategy. Instead, they are dependent on the availability of professors in particular specializations to supervise students, and their topics are decided on the same basis.

A simple critical analysis of the newly planned “PhD Pathway” indicates that even the new system lacks sustainability in the long-term and will cause more problems than it solves today. The argument for this is laid out in Section 3 below, where I explain my proposed solution to the problems facing Kurdistan in achieving sustainable quality higher education.

### **3. The Kurdistan Research Sustainability Model**

The current model of research management in Kurdistan is implemented based on the principle of economic support by flooding the system with oil money, sending hundreds of our young and talented abroad for study in the best universities of the world in the hope that they make great contributions to higher education when they come back, lifting the standards of teaching and learning. There is, however, an obvious economic problem with this model.

The oil money will run out sooner or later and this will leave the system with a pool of highly educated and talented PhDs yet unmanaged and disorganized with no clear direction on research pathways that can efficiently serve the long-term national interests. Thus would result in the

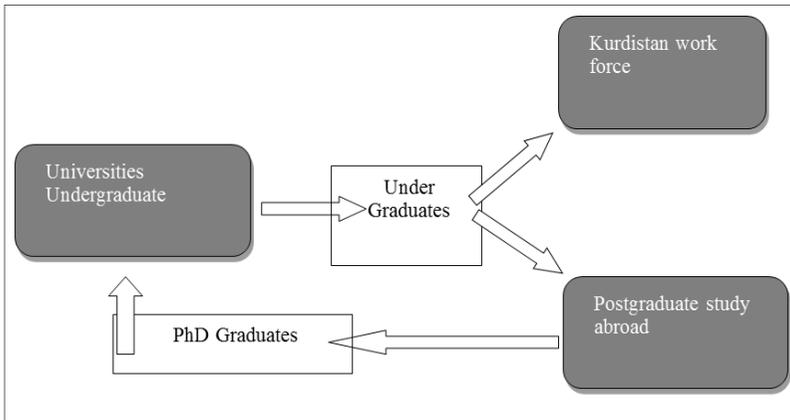
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<sup>2</sup> A new PhD pathway in Kurdistan, <http://www.mhe-krp.org/node/343>

rapid outwards migration of those resources from Kurdistan into the international knowledge commodity marketplace, as was mentioned in Section 1. Within thirty or forty years after spending astronomical amounts of money, Kurdistan won't be much further from where it is today. A comparative analysis indicates that when "knowledge society projects" are envisaged, the primary drive is most often essentially, if not exclusively, economic and/or political, with no particular or primary interest in higher education. However, major knowledge society projects almost always end up by proposing very specific higher education policies and also by putting forward normative models regarding the role of higher education institutions.

A simple simulation illustrates the application of the aforementioned principles related to the informatics principle on social systems (or part of a social system). Our example is the act of sending students abroad for higher degrees and bringing them back to Kurdistan to join the education system. In our case, the system is the Kurdistan education system and the feedback action is returning highly educated graduates from abroad. This system is illustrated in Fig. 17.1 below.

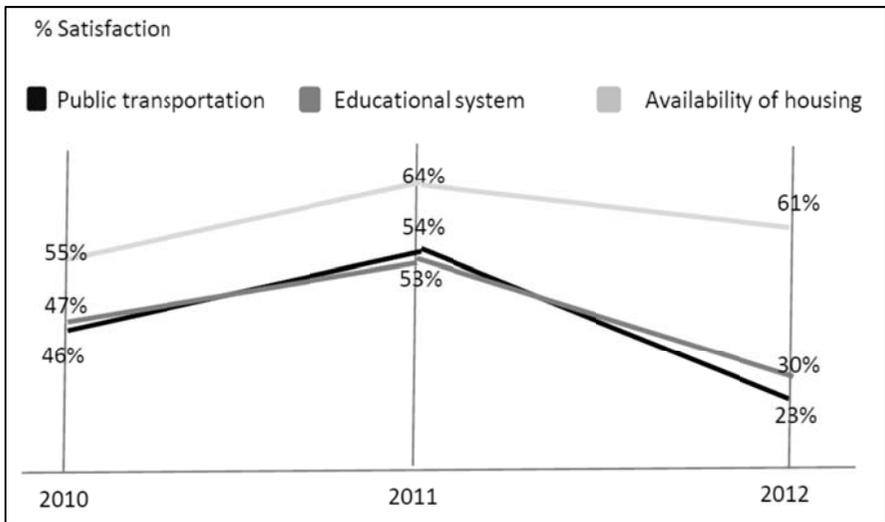
Fig. 17.1. Feedback action in to the current higher education system



There are three assumptions in this current higher education system suggesting that they may not materialize as expected: (1) there will be an unlimited supply of funds in the long-run to sustain the program of sending undergraduate students abroad for their PhD studies; (2) the majority of PhD graduates, if not all, will return to Kurdistan; (3) Kurdistan universities are capable of absorbing the returnee graduates,

hence accommodating them with proper teaching and research jobs in the long-run. The Kurdistan region has been growing quantitatively in the field of education for the last twenty years, however early signs of decline of satisfaction have started to emerge. A survey conducted by the Gallup institute illustrates this decline (Gallup 2012). This is an important warning that simply building new universities and filling them with people will not lead to scientific success and a sustainable Knowledge Society (see Fig. 17.2).

Fig. 17.2. Satisfaction survey in Kurdistan region



Source: Gallup 2012

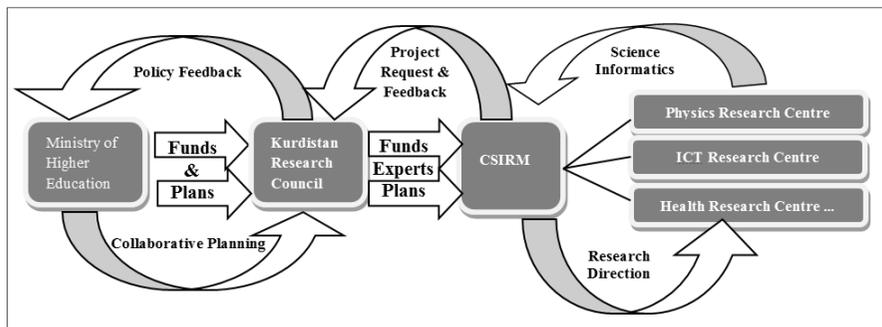
### 3.1 New Research Management Model with System Dynamics

Looking again at the previous example, this time it will be analysed from perspective of the system dynamics theory. A feedback loop is essential for a closed system to achieve sustainability and continuity. In a system where a transformation occurs, there are inputs and outputs. The inputs are the result of the environment's influence on the system, and the outputs are the influence of the system on the environment. Input and output are separated by duration of time, as in before and after, or past and present. In every feedback loop, as the name suggests, information about the result of a transformation or an action is sent back to the input of the system in the form of input data.

This chapter proposes a research management model to overcome the shortcomings of the current system in Kurdistan. This new model is designed based on the principles of system dynamics (Angerhofer & Angelides 2000). System dynamics is an approach to understanding the behaviour of complex systems over time. It deals with internal feedback loops that affect the behaviour of the entire system. What makes using system dynamics different from other approaches to studying complex systems is the use of feedback loops and stocks and flows. These elements help to describe how even seemingly simple systems display baffling nonlinearity.

In our new proposed system, each element is connected to the previous element in the system by a feedback loop that acts as the controller of the system saturation by controlling the flow of input and output between the elements. Fig. 17.3 is the illustration of the proposed model.

Fig. 17.3. Kurdistan Research Sustainability Model



The principle of the feedback loop in our proposed new model enables a self-correcting mechanism that in turn ensures stability as well as sustainability of the model (system). The participation of the Kurdish scientific elite across the world is essential in order to build the capacity to accomplish this plan, and the KRG can play a vital role in bringing them to Kurdistan for this purpose.

## **4. Centre for Science Informatics and Research Management (CSIRM)**

In natural and artificial systems, information is carried at many levels, ranging, for example, from biological molecules and electronic devices through to nervous systems and large-scale distributed computer systems. But that is not the only place where the informatics exists. Similar systems also exist in societies, organisations and human collaborative systems—basically anywhere that intelligence matters. Informatics aims to develop and apply firm theoretical and mathematical foundations for the features that are common to all computational systems. In its attempts to discover the unknown, science progresses by developing, criticising and defining new concepts. Informatics is developing its own fundamental concepts of communication, knowledge, data, interaction and information, and relating them to such phenomena as computation, thought, and natural language.

Informatics today has become the cornerstone of research in all disciplines of science and technology. CSIRM is a pilot project and the starting point for creating an integrated centre that acts as a science informatics hub that covers and provides data analytical services to an array of research structures in a large variety of scientific fields, from social science to ICT to biology and beyond.

### **4.1 The purpose of CSIRM**

This centre is intended to leverage the international opportunity as an early adopter and leading academic research group in applied informatics. It is to utilise ICT to provide a robust analytics backbone and effective support for e-Science to the Kurdistan Research Sustainability Model described in Section 3. It offers a wide range of skills, tools and expertise in scientific data interpretation and analytics. Working as a hub, CSIRM plays a vital role in facilitating collaborative research and development in multidisciplinary scientific research projects

Given the applicability of e-research, internet and web services, its purpose is to unite Kurdish academic and industry expertise for the development of relevant and innovative technologies for a multitude of scientific disciplines. Whilst the centre is multidisciplinary in the application areas, it is positioned to act as the interconnection hub for data, information and knowledge exchange between an array of specialised science research centres such as physics, chemistry, biology, health, ICT, and many more. It generates sustained research output specifically in the e-technology arena with a high potential for commercialisation.

## 4.2 The main objects of CSIRM

- To bring together the scientific and education talents of Kurdistan to establish a quality, forward-looking and collaborative scientific environment
- To provide strong leadership within the centre that combines academic and industry expertise that fosters multi-disciplinary collaboration
- To promote Kurdistan universities at an international level for leading informatics research in the academic community
- To attract leading scholars and industry experts in collaboration
- To publish high quality academic research that reflects an international reputation of excellence in applied informatics
- To examine the commercialisation potential of outcomes of all research sub-centres with the intent to invest in industry and community products and solutions

CSIRM can play a significant role in the re-education and quality improvement of higher education staff in Kurdistan universities, by engaging foreign research experts and consultants to help, guide, train and prepare the current Kurdistan academics, faculty members, subject matter specialists and other participants, as well as taking on new PhD students in various areas of research and development projects. In addition, it also aims to establish, manage and publish various scientific journals to foster the culture of true academic and scientific writing. This centre will hold regular conferences, symposiums and webinars to encourage research groups that will engage participants in collaborative research across disciplines and/or across institutions with a view to enhancing the research output of institutions in terms of the level of attainment, quantity, dimensions and/or speed.

These objectives, when implemented and achieved, can promote interdisciplinary approach by incorporating all the Kurdistan universities and colleges in research and development. This would provide a lead for policy planners and implementers confronting Kurdistan society in an efficient and effective way.

## 5. Conclusion

This chapter has touched on a very important issue that is hindering the efforts of modernisation of the higher education system in Kurdistan

today. A brief statistical analysis has shown that it is suffering from the lack of proper planning based on modern scientific methods.

This chapter has recommended a high-level solution to this problem consisting of two complementary components. The first is the establishment of the Kurdistan Research Sustainability Model, a centralised research management model designed to manage and direct all research efforts in Kurdistan based on long-term scientific and socio-economic plans. The second is the establishment of the Centre for Scientific Informatics and Research Management, or CSIRM for short, in Kurdistan as the first of its kind in the world, boosting the capability of the Kurdistan region to achieve a sustainable high-quality research education system.

Experience in similar situations has proven that these two recommendations can dramatically increase the chance of Kurdistan to get ahead in higher education by utilising the capacity of elite Kurdish scientists living abroad.

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## CHAPTER EIGHTEEN

# MOBILE-GOVERNMENT FOR ENHANCED PUBLIC SERVICE DELIVERY IN ADVANCING ECONOMIES: THE CASE OF THE KURDISTAN REGION OF IRAQ

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### **Abstract**

The developments of mobile communications along with the huge penetration of mobile users across the globe enable cost effective usage and transform public service delivery. The significance is to emphasize that mobile communications can facilitate the vast usage of e-government services in places where traditional fixed line phones are seldom compared to mobile penetration particularly in the transitional governments. This chapter investigates mobile government (m-government) developments within the wider context of e-government, but mainly those efforts in the regions where mobile penetration exceeds landline penetration, as in many advancing economies such as the Kurdistan Region of Iraq (KRI) and Cameroon. The precise efforts made by both the developed and advancing countries in utilizing the latest technologies and applications for enhancing e-government will be explored. The main contribution of this chapter is to propose an architectural design for m-government application through utilising the mobile GPS (Global Positioning System) used in the KRI

traffic police information system to identify and establish the identities of drivers and vehicles in real time.

**Keywords:** Mobile government, Electronic government, GPS, Architectural design, KRI, KRG and Traffic Police Information System (TPIS)

## 1. Introduction

The development of ICT across the globe has created great opportunities for public administrations to use different technologies and applications based on their requirements. Government authorities have recognised the potential of mobile-based information and services to citizens. Mobile technology has moved through various phases or generations (Kushchu and Kuscu 2003); the first generation (1G) systems were analogue, circuit-switched, voice communications, low capacity, and security was not accurate. Then came the second generation (2G) that used the GSM technique and digital coding Code Division Multiple Access (CDMA); these technologies are used across the globe and have attributes such as high rate, high capacity, limited data transfer and provide SMS facilities. Thereafter, the Universal Mobile Telephone Services (UMTS) third generation (3G, 3.5G) system was developed, and later the 4G. These technologies, which are broadly used, are based on IP and packet switched networks GPS and GPRS (Sadeh 2002; Wallace et al. 2002), and have also upgraded existing communication networks to provide high data rate, more capacity and high multimedia transformation such as wireless broadband access, MMS, MTV, DVB and others. The development of 3G mobile network-based services gives a wider opportunity to provide services via mobile platforms. This evolution makes mobile application services possible and more accessible than wired internet communication services. In other words, the use of technologies such as SMS and WAP used in many m-governments around the world will play an important role in the near future due to the development of ICT. For example, in some UK Schools the staff are using mobile phones to send SMS to parents regarding issues such as parents' meeting, absenteeism and sometimes messages relating to the pupil's progress.

Most mobile devices are primarily used for voice communication, however there are different types of mobile users; some people use their mobile device for emergencies, emotionally and /or for mundane purposes, etc. The use of the mobile device varies depending on the user's gender, age, and socio-context to modify the meaning of the devices (Bautsch et

al. 2001). Mobile phones are no longer used for telephone calls only, but for a variety of other purposes such as emails, chats and scans. The current research efforts on mobile technology use provides many avenues for government service delivery strategy (Kakihara & Sorensen 2002), and also offers opportunities for the identification of mobile application that advances various sectors, such as health care, education, public service and justice (Easton 2002). The service providers might involve various kinds of applications as a support for activities of the society (Ishmatova 2009). The omnipresent computing atmosphere is based on anywhere, anytime and anyhow service provision in the context of rapidly changing conditions. In other words, the user can receive any information whenever they want and wherever they are (Pimenidis 2009). In this case, a mobile/wireless device has an important role in an omnipresent environment. This technology will effectively impact the economy through infrastructure development to enhance business practice and improve public/private sectors. The lack of wired landline connectivity has made the use of mobile terminals a primary means of communication. It provides the potential to make government more effective and accessible to citizens, particularly for areas that do not have sufficient landline services. Citizens use mobile browsers and applications as the focal points of interaction, as nowadays the number of mobile phones exceeds the number of PCs (Gartner 2011). Wireless and mobile technology usage is rapidly increasing amongst the people across the world and especially in developing countries where such facilities and access was hitherto very scarce in, for example, Africa, some parts of Asia, and Middle Eastern and Arab countries such as Kurdistan. As a result of the rapid growing uses of mobile phones, m-government applications are essential to alert citizen about the availabilities and advantages of m-government service implementations.

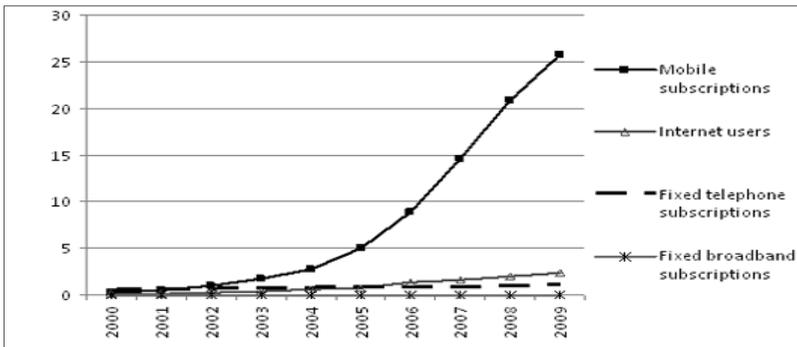
This chapter aims to propose an architectural design for m-government application through utilising the mobile Global Positioning System (GPS), as used in the traffic police information system to identify and establish the identities of vehicles and drivers in real time. This will facilitate and improve information access, and provides up-to-date real time data that could be shared with other security forces to protect the general public and help enhance the traffic information system. Therefore, it will improve and increase the use, efficiency and effectiveness of the traffic police system in information gathering and dissemination. More especially the system will be used to identify and recognise any suspicious vehicle or terrorist threats entering a particular region.

The rest of this chapter is organised as follows. The second section tackles other related works on m-government. Section three discusses the methodology used to accomplish this study. Section four illustrates the current state of affairs of the KRG in terms of ICT and its readiness. Section five produces an innovative mobile application developed for the Kurdistan Traffic Police Information System (TPIS). The chapter concludes with some recommendations and future works of the research in section six.

## **2. Related Works**

Most developed government administrations within the context of e-government are moving towards the use of wireless mobile application technologies. With these attempts are completely new ways of understanding e-government performances, often as complementary rather than a substitute. This notion of mobile government has sprung up in different countries around the world (Shareef et al. 2010a). Whereas some of these countries are highly developed in terms of ICT, e-government and mobile technological infrastructure, in contrast some others are still weak in all or some of the terms, for example e-government. Kurdistan and Cameroon are very good examples and exhibit attractive examples of early-stage e-government development. While the overall attempts in e-government are still in the early stage, the mobile infrastructure is at the developmental level. M-government is not only a supplement to e-government, but a major component or channel of e-government, and mobile technologies are an exceptionally easy access technology for service provision (Shareef et al. 2010a). Therefore, the way forward is to move towards mobile government, because many countries do not have sufficient ICT infrastructure, and wired phone services are not a viable option. In other words, the fixed internet lines are few and mobile penetration has increased tremendously over the years. In addition, m-government does not require expensive media and office space. One of the main points in favour of m-government is that the mobile phone penetration is predicted to rise from 46% in 2008 to 95% by 2013 (ITU 2008). According to the United Nations' International Telecommunications Union report (UNCTAD 2010), the penetration of mobile phones has exceeded fixed telephone subscribers and other ICTs, such as internet use and broadband subscriptions, as illustrated in Fig. 18.1.

Fig. 18.1 Penetration of ICT in developing countries (UNCTAD 2010)



The mobile phone is not just a portable device, as it has tremendous attributes and services related to it that the fixed telephone line does not have. Mobility provides more freedom of movement than the physical expression. Mobile phones are now used to transact many business and/or social activities. For example, in 2002 the first use of mobile phones for payment transactions was done in Scotland, and Japan was the first country to use mobile phones for accessing health records in 2003 (Rossel et al. 2006).

The use of mobile phone technology in the government sector is not an extra channel for service provision, but can be used to treat the mobility of government itself, and in this way exceeds the conventional e-government service provision by bringing localised, personalised, and context-aware services closer to its mobile citizens. According to Song (2005), research findings reveal that e-government initiatives have been unsuccessful in living up to the expectations of citizens. Mobile government initiatives have rebuilt trust via more rapid communication with citizens and in delivering effective and efficient services (Song 2005). Mobile platforms with the prefacing of internet-based mobile services such as PDAs, WiFi and other wireless networks have provided users with all the benefits of telephones, wireless accessing of information, and text messaging such as SMS, MMS, etc. (Clark 2001; Donegan 2000).

The fast dissemination of mobile technology has facilitated communication, especially within the poorer communities of societies, by helping to make mobile use more affordable. On the other hand, one of the challenges facing e-government initiatives is the participation of elderly people in the use of the new system to improve the quality of life. The generation gap can be reduced by blending mobile applications with the e-government, capable of providing the elderly people with access to e-

government service provision and stimulating their commitment to public services (Ahituv et al. 2008). Guillet et al. (2008) used GPS (Global Positioning System) technology on mobile terminals for visually impaired people in an urban atmosphere to identify the surrounding area. Kowalik & Kwasniewski (2004) proposed and discussed a navigation device based on atalk-GPS information for blind people, in which the system converts the video images to voice in the real-time domain. In the UK, the DfT and Police (ANPR 2009) have used mobile technology called Automatic Number Plate Recognition to identify the owner of a vehicle and to recognize any suspicious vehicles, as well as to spot a vehicle parked on red or double yellow lines, or to identify the validity of its road tax.

Boyera (2007) points out that there is a lack of ICT infrastructure in the majority of the world needed for development. Therefore, developing countries wish to use alternative tools to develop their own easy-to-use system which meets their citizen's requirements. For instance, investments in wireless communication such as mobile phone communication in Africa changed practices radically, and grocery and cab fares can be paid for through mobile phones, for example (Eagle, 2007). The penetration levels of mobile phone and Internet services are exceeding the wired communication system and present a huge potential for government services over mobile device platforms in regions such as Kurdistan and Cameroon. Thus, m-government initiatives are inevitable.

Selcen et al. (2008) discuss the use of ID via integrated technology in the SIM card of the mobile terminal that overcomes the risk of the device being lost. In Japan, NTT DoCoMo developed a wonderful technological and business model that made it possible for many mobile device users to connect to the internet via I-mode (Wallace et al. 2002). Also, to further promote the use of ICT, the Japanese authority developed a strategy called u-Japan (Ishmatova 2009) to provide a ubiquitous network society, to capable citizens in general and elderly people in particular, to access and utilise e-government services and make citizens' lives more prosperous by helping them to receive services anywhere and from any device. By developing such a strategy, developing countries can learn lessons and practice implementation in their various states, and adapt it with respect to their social realities.

### **3. Methodology**

This study involves an initial pilot survey of the facilities provided in the city of Erbil (Capital city of the KRI). Some data and information were collated using primary and secondary sources (government archives,

reports published on the websites, and interview questionnaires) to determine ICT services and usage levels in the region. The approach will determine the feasibility of implementing m-government in the region. The aim of this study is to investigate the opportunities for initiating m-government systems for KRI. The contribution of this study will assist government authorities and policy makers to take into consideration some factors that impact the success of m-government implementation such as, ICT infrastructure, legal framework, political process, cultural attitude, education level and others. In addition, interviewee's opinion will be taken into account to maximise the benefits and also avoid problems in implementing this approach. The strategy for the interview was to gather primary qualitative data from interviewees (experts, advisors and directors) through the use of both structured and semi-structured methods. The questions comprised both closed and open-ended questions. The results were then analysed and evaluated.

#### **4. Role of Information and Communications Technology in KRI**

The Kurdistan region of Iraq (KRI) currently consists of three cities, namely Erbil (capital of Kurdistan), Suleymani and Duhok. The Kurdistan Region was, prior to 1991, lagging behind in ICT in terms of telecommunication infrastructures and the growth of the wired telephone networks throughout Iraq. In an interview with the Director General of the Ministry of Transportation and Communications (MOTAC), the Kurdistan communication system were seen as being far behind, with telephone landlines in big cities such as Erbil totalling only 10,000 interior lines, and the connection between Erbil and other cities being non-functional after the withdrawal of Iraqi government institutions from Kurdistan (Shareef et al. 2010b). There were no mobile communication networks and no computers were available at the government institutions. However, after the citizens' uprising in 1991, developing communication systems became very difficult because of the UN embargo and the blockade from the Iraqi regime. But recently the new cabinet of the Kurdistan region has launched some of the latest types of communication exchange in the country. The government has built different types of transit exchange 1000E1 and 600E for Erbil and Duhok respectively, and has also connected Kurdistan cities through a microwave network in type SDHSTM-1. According to the UN e-government report (2010), the whole of Iraq lags behind in e-government and the survey put the e-readiness rank at 136, as shown in Table 18.1 below.

**Table 18.1 E-government readiness for Iraqi neighbouring countries and others (UN 2010)**

Country	E-government Index Value	E-gov. development ranking
Republic of Korea	0.8785	1
United States	0.8510	2
Canada	0.8448	3
United Kingdom	0.8147	4
Netherlands	0.8097	5
Singapore	0.7476	11
Sweden	0.7474	12
Bahrain	0.7363	13
United Arab Emirates	0.5349	49
Kuwait	0.5290	50
Jordan	0.5278	51
Saudi Arabia	0.5142	58
Qatar	0.4928	62
Turkey	0.4780	69
Oman	0.4576	82
Islamic Republic of Iran	0.4234	102
Syrian Arab Republic	0.3103	133
Iraq	0.2996	136
Yemen	0.2154	164

Furthermore, another survey (the Household Socio-Economic survey) carried out by the Ministry of Planning and Development Co-operation (MOPDC) of Iraq in 2007, and within the framework of a bank project financed by the Iraq Trust Fund (ITF), showed that in Kurdistan the technological background, internet and overall necessity for e-government is satisfactory compared to the rest of Iraq (IHSES 2007), as can be seen in Table 18.2 below.

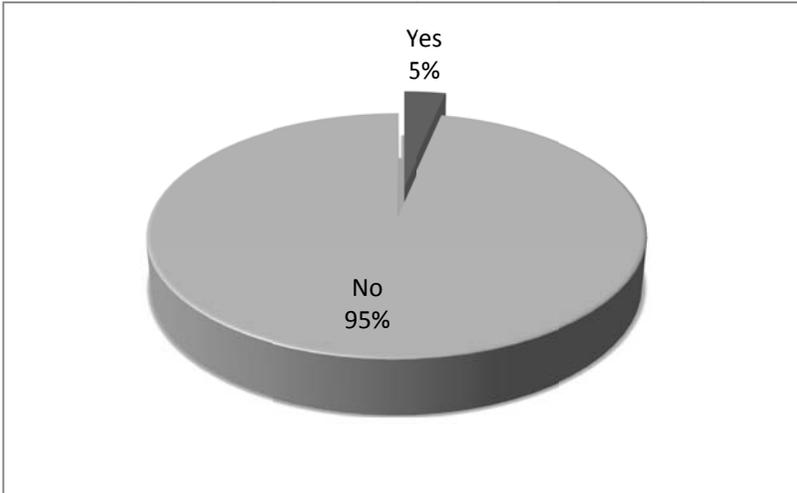
**Table 18.2 Internet users in Kurdistan compared to Iraq (IHSES 2007)**

	<b>Kurdistan region</b>	<b>Baghdad</b>	<b>Other governorates</b>
<b>% of internet users overall</b>	4.3	2.1	2.6
<b>At home</b>	49.5	33.4	37.5
<b>Internet café</b>	22.1	27.8	40.6
<b>School/Uni.</b>	10.0	12.9	9.8
<b>At work</b>	16.8	24.1	9.4
<b>Other</b>	1.6	1.8	2.7
<b>Total</b>	100.0	100.0	100.0
<b>Average hour/week</b>	7.6	10.5	8.8

Presently, the KRG provides services to its citizens; in other words citizens are physically going to the government agencies to satisfy their needs for information or services. Based on the initial pilot survey (Shareef et al. 2010b), 95% of citizens do not receive services electronically, and the remaining 5% are mostly employees using other intermediary channels such as solicitors, relative's connections and others to communicate with other employees in different agencies to receive or provide services, as depicted in Fig. 18.2 below.

In another interview with an advisor of the Ministry of Trade and Industry, it was revealed that most of the Ministries in KRG have a very basic website which is used to present ministerial activities and news, but without any form of interaction with citizens. However, on the Ministry of Higher Education and Scientific Research (MHE) website, an application form has been uploaded for students to apply for postgraduate courses from outside Kurdistan, under a scheme called Human Capacity Development Program (HCDP). In addition, there is a similar system established by the Ministry called "Zankoline," which provides access for students to apply for undergraduate courses in the universities within the KRI.

Fig. 18.2. Services received from Kurdistan government electronically



Despite individual efforts, however, it is clear that e-government in the region is at the initial stages only. Nevertheless, the KRG aspires to contribute to the formation of information society and tries to take a more proactive role in adopting new technology, thereby establishing a functional IT department in the KRG to initiate e-government systems and to raise employee abilities in various fields such as management, ICT skills, administration, computer maintenance, security and others. The KRG has attempted to use mobile technology in facilitating service provision, for example the council of ministries uses short messaging services to call ministers for a meeting. In addition, the traffic police office recently used SMS to alert applicants to the completion of their driving licence and its collection. In another example in 2007, the IT department at the Council of Ministries established a major project to provide high security government employee identity cards (called ID smartcards) and database solutions, as another initial step towards e-government (Gulfnet 2007). The project was carried out by GulfNet Security Systems (GNSS) in partnership with Emirates Computers. There were many companies also involved in this project, such as Microsoft, FARGO, Dell, Cisco and Labcal. The IT department signed an agreement with Price Waterhouse Cooper (PWC) to develop IT strategy for the KRG that will help to identify the drawbacks of the current system and to put in place concrete strategies for an effective and efficient e-government system, and is presumed to be the key element for its success.

The regional government has always focused on the role of the government in the reconstruction of the Kurdish society, infrastructure, services, increased political freedom and tangible improvements in the daily lives of the people. Since then, wireless technology, particularly mobile telephony, has penetrated the Kurdistan market more rapidly than any other technology or product before. The mobile phone has become an inseparable part of daily life. Based on information from MOTAC, there are many telecommunication companies now in the KRI. Mobile telecommunication in the region has been dominated by both Korek telecom and Asia-cell. The Asia Cell Company is one of the oldest GSM (Global System for Mobile Communication) operators in Iraq, established in 1999 under the security of the “no-fly- zone” period. Currently, the company is the first to cover all eighteen cities of Iraq, and has nine million users across the country (see [asiacell.com](http://asiacell.com)). Korek telecom, on the other hand, was launched in 2000 and has become the first provider in the city of Erbil and Duhok, licensed by the KRG. The company currently has 2.5 million subscribers (see [korektel.com](http://korektel.com)). Another provider, Sana Tel, is also one of the main mobile operators in the Suleymani area. However, it has approximately 4,500 subscribers and is much smaller than its regional adversary. Mobi-Tel is the first mobile 3G and 3.5G service provider in the region and was licensed by KRG of Iraq. Mobi-Tel launched in 2007 currently covers the areas of Erbil and Duhok, and is planning to cover Suleymani city, and has around 3,000 to 4,500 users. Some of the details of the telecommunication companies are illustrated in Tables 18.3 and 18.4.

The research findings show that most of the communications companies are wireless, which means the infrastructure of the land lines is still very weak. However, interestingly, and according to the Director General of MOTAC, the ministries and government agencies are all now connected via fibre optic cables through the project called “Access Network,” which is also linked to Turkey. However, this project is not working properly due to a lack of a strategic plan for this approach, and also a lack of co-operation between government institutions, together with lack of proper management and an overall administration system.

**Table 18.3 Wired and wireless communication companies in Kurdistan region**

Company	Location	Spectrum/F requency	Technique	Services
Newroz Telecom -Aria phone -Reber -Aria Net	Erbil & Duhok	450MHz 800 MHz 1900MHz	CDMA, ADSL, WLL WLL, EDVO	Voice Call, Internet
Nawand Telecom	Erbil	20MHz 4MHz	Wimax	Voice Call, Internet
Tarin Net	Erbil & Duhok	20 MHz 20MHz 2.4 GHz	Wimax Wimax WiFi	Voice Call, Internet
7 Net Layer	Erbil	40 MHz	Wimax	Internet
Ray Telecom	Erbil	20 MHz	Wimax	Internet
Via Telecom	Erbil	20 MHz	Wimax	Internet
Linl-Tech	Erbil	20 MHz 2.4 GHz	Wimax WiFi	Internet
Verenos	Erbil	20 MHz	Wimax	Internet
4-Time	Erbil	2.4 GHz	WiFi	Internet
Brosk Net	Suleymani	20 MHz	Wimax	Voice Call, Internet
Cell Net	Suleymani	36 MHz	Wimax	Voice Call, Internet
Tishik Net	Suleymani	26 MHz	Wimax	Internet
Goran Net	Suleymani	20 MHz	Broad band internet	Voice Call, Internet
Pasha Net	Suleymani	10 MHz	MC Will	Internet
Fanos	Suleymani	450 MHz 1900 MHz	WLL WLL	Voice Call, Internet
Spider Net	Suleymani	2.4 GHz	WiFi	Internet
Zana Mohamed mahdi	Suleymani	2.4 GHz	WiFi	Internet
Zanyar	Suleymani	2.4 GHz	WiFi	Internet
At Net	Halabja		WiFi	Internet
Dost Net	Suleymani	2.4 GHz 5.8 GHz	WiFi	Voice Call, Internet
Zozik Net	Duhok	2 MHz	Wimax	Internet

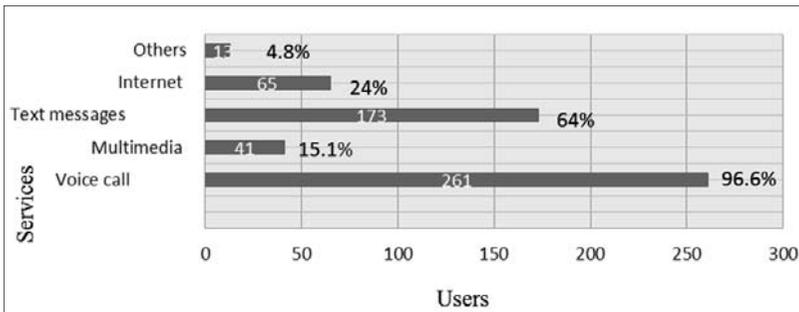
**Table 18.4 Mobile Communication Companies in the Kurdistan region**

Company	Location	Technique	Services	Users
Korek Telecom	Erbil & Duhok	GSM, GPRS	Voice call, internet	2.5 million
Asia Cell	Kurdistan & Iraq	GSM, GPRS	Voice call, internet	9 million
Mobi Tel	Erbil & Duhok	3G, 3.5G	Voice call, internet	3000-4500
Sana Tel	Sulaymani	GSM	Voice call, internet	300-400

## 5. Proposed Mobile Government Application

Wireless/mobile technology usage is rapidly increasing amongst the people in most of Africa and Asia, and other places such as Kurdistan in Iraq. As a result of the rapid growth of mobile phone use, m-government applications are essential to alert citizen about the availabilities and advantages of m-government implementations. Shareef et al. (2010b) found that 99% of citizens in Kurdistan use mobile phones, and performed various functions and services as illustrated in Fig. 18.3 below.

Fig. 18.3. Type of services performed by mobile phone users



Therefore, the emergence of wireless/mobile technology is a novel opportunity for governments to bridge the digital divide, (the gap between people who have effective use of ICT and those with limited use or none at all) and provide services to both citizens and employees anytime,

anywhere, through wireless devices (Townsend 2002; Foley 2004; Hosny & Arreyambi 2007).

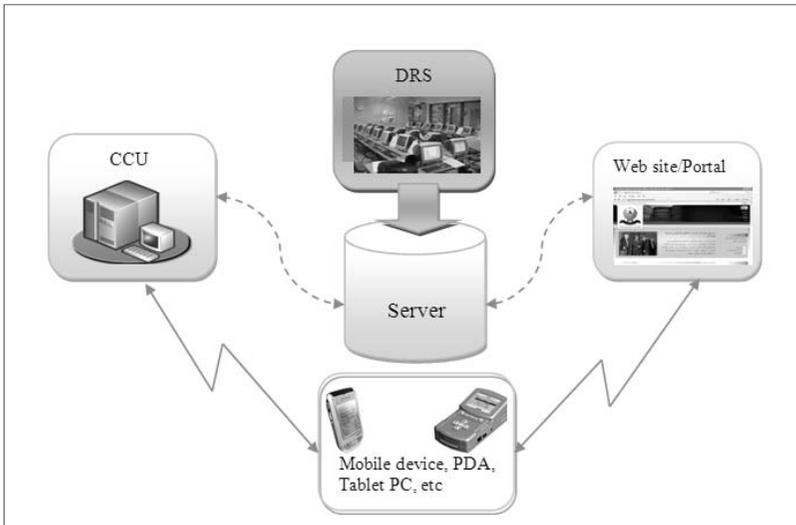
The proposed application is to improve information access and provide up-to-date, real time data that could be shared with security forces to protect the general public and help enhance the traffic information system. Therefore, it will improve and increase the use, efficiency and effectiveness of the traffic police system in information gathering and dissemination used to identify and recognise any suspicious vehicle or terrorist threats entering the region. The proposed system will protect and save the lives of citizens in the region and also make the government more transparent and accountable. The infrastructure is designed for wireless communication, and the wireless/mobile devices used will be equipped with latest 3G, web-enabled technologies such as PDAs, Blackberries and iPhones, and tablet PCs with GPS and GPRS internet access. The idea is that the information concerning the vehicles and drivers' identities are entered into the system through the Data Recording System (DRS). The DRS involves a database that requires some elements and “entities information,” which includes the following:

- (1) Full name
- (2) Date of Birth
- (3) Full Address
- (4) Driving license number
- (5) Expiry date of driving license
- (6) Telephone number (Mobile and landline)
- (7) Vehicle registration number
- (8) Type of the vehicle
- (9) Make of the vehicle
- (10) Year of manufacture
- (11) MOT
- (12) Tax
- (13) Due fines
- (14) Expiry of insurance
- (15) Fuel type
- (16) Engine size
- (17) Transmission type (Petrol, diesel, Gas)
- (18) Colour of vehicle
- (19) Number of doors

The information will be stored on a designated server. The Central Control Unit (CCU) monitors and processes the information on request.

The traffic police or the police patrol can access the CCU using one of the mobile devices as mentioned. This process can be achieved using various identifiers or parameters such as vehicle registration number or the driver license number. The CCU will communicate with mobile devices to recognise the location of the patrol and report any urgent action. This communication takes place via GPRS internet access. With this application, the police officer can identify all the details about the driver and the vehicle in real time, such as driving license, MOT, vehicle registration, driver's identification and traffic penalties, etc. The benefit of this identification system in real time is the reduction of waiting times and energy costs, and also the associated paper work regarding reports of the events. This system is vital for today's Iraq especially from a security point of view. The architectural design of the system is shown in Fig. 18.4 below.

Fig. 18.4 A conceptual view of the system architecture



The implementation of this application requires various strides, such as database design and Wireless Access Protocol (WAP), which is an international standard in a wireless communication field for application-layer network communications. The idea is to access the CCU from a PDA device or a mobile phone. In addition, the system also can be accessed through the institution's website by creating secure direct access with a username and password. In the context of WAP, the police officer will be

able to access the system through a PDA or Smartphone that needs a username and password. This will give the opportunity to the police officer to access the system, and use the “entity identifier,” such as vehicle registration number, to get all information and details of the entity in question, as discussed above.

## **6. Conclusion**

This chapter has identified that there are diverse opportunities and effective examples of mobile solution in many parts of Africa, Asia and Kurdistan, despite the fact that traditional e-government co-ordination is yet to be realised. This chapter has analysed these simultaneous developments in terms of mobile government implementation as well as the general level benefits for developing economies and regions such as the KRI. This study has attempted to outline and develop m-government by carrying out some initial investigations on the present state of affairs in the KRI. The authors have proposed a design and development model for the implementation of such a system for the provision of services to citizens by the government. Through comprehensive interviews and other investigative techniques, the study findings reveal that web-enabled mobiles and the internet will not replace other channels; however, all or various channels are used according to the citizens’ requirements. We deduce that m-government is not only a supplement to e-government, but a major component of it. Additionally, we found that the m-government initiative in most developing countries or regions such as Kurdistan is essential and must be implemented in parallel with e-government. Meanwhile, the penetration of mobile communication has far exceeded landline communication. The proposed study identified m-government applications for traffic and patrol police in identifying vehicle and driver details. Applications that provide these value added services should make users feel that their privacy or security issues are being handled properly. Therefore, security and privacy are some of the main issues that concern the m-government organizations and influence their performance in accepting or refusing their implementation. Security means the security of network, software application, and devices. This is an ongoing study which in the future will deal with the security issues of the proposed application and will make some comparative studies with other m-government systems to identify the feasibility of this proposal.

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## **PART VII**

# **INFRASTRUCTURE AND DEVELOPMENT**

## CHAPTER NINETEEN

# A REVIEW OF THE REGIONAL DEVELOPMENT STRATEGY FOR THE KURDISTAN REGION 2012–2016\*

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### **Abstract**

This study is a review of the first regional development strategy for the Kurdistan Region covering the period 2012–2016. The objective is to review the document and to provide a list of corrective and suggestive measures to continuously update it. The review is conducted in several steps. First, it discusses the importance of the strategy plan considering the allocation of resources from the society's viewpoint and preconditional factors for achievement of a sustainable development. Second, based on the strategy document, each individual sector is briefly described in respect to its specific characteristics, potential and challenges. Given the existing conditions and needs of the society, the correspondence between the required structure and those of the actual development strategy is assessed. Fourth, based on findings about its strength and shortcomings, a list of modifications to be incorporated into the Ministry of Planning's revision of the document is provided. Fifth, a list of potential areas of

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development strategy related to targeting researchers and graduate students is given. The last part concludes this report.

**Keywords:** Economic plan, development strategy, development policy, Kurdistan Region, sector analysis, review, goal achieving and monitoring indicators, challenges, recommendations.

## 1. Background

This study is a review of the first regional development strategy (MOP 2011)<sup>1</sup> for the Kurdistan Region released on March 2011 by the Ministry of Planning. The strategy covers the period 2012–2016. The Ministry of Planning was established in 2005. It is surprising that the Ministry, despite its relatively large manpower and urgent need for a development plan, delayed release of its first development strategy document. The period following 2003 was significant regarding the region's reconstruction and development phases, undertaken in the absence of any such planning.<sup>2</sup>

The current Minister of Planning Dr. Ali O. Sindi, asserts in the forward of the development strategy document that in the last few years the Kurdistan Region has benefitted from considerable development in many areas. In his view, this has been a result of the Kurdistan Regional Government's (KRG) attempts to seize new opportunities to improve the living conditions in the region. In the process, the regional government has faced numerous challenges attributed to the massive destruction of rural areas by the former Iraqi regime, long periods of war, genocide, forced displacement and more recent and rapid urbanization. Despite such barriers and challenges, the government has made serious efforts to reconstruct the region and to embark on a sustainable development process. As a result, the diversity of local non-agricultural products in most of the sectors has increased. The national income and gross domestic product per capita also has increased significantly.

The above-mentioned development condition and its further enhancement have implied the necessity to prepare and adopt a strategic

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<sup>1</sup> Such documents are often called five year plans, economic plans, development plans, development strategies etc. In this report, some of these labels are used interchangeably. The ideas in documents such as Dubai (Al Maktuum 2011) are often mentioned as a model for economic development in the Kurdistan region.

<sup>2</sup> USAID (2008), Kurdistan Region: Economic Development Assessment, United States Agency for International Development, RTI International, published a sector analysis covering agriculture, construction, extractive industries, information and communication, tourism, trade and industries, and banking sectors.

planning approach to promote the development process. The first five-year development strategy, despite limitations, is a comprehensive strategic plan aimed at providing a clear understanding of the current status, and also speaks of a vision for the future. If the adoption capacity is available, it can serve as a reference for future development and long-term public and private investment projects. In addition, it will also guide the preparation and execution of annual public budget and finances. It is expected to enable the regional government to overcome the problems and delays in project implementation, enhancing efficiency in the use of scarce public resources invested mainly in development infrastructures and social welfare.

In preparation for the strategic plan, the Ministry of Planning stated that it has gained from the successful experiences of several newly-industrialized countries around the world. They also take into consideration the Millennium Development Goals (MDGs) and in particular the Poverty Alleviation Strategy goal.<sup>3</sup> Since the Kurdistan region is subject to Iraqi law, at the national level the plan is aligned with the Iraqi National Development Plan's rules and regulations. Overall, in Dr. Sindi's view, the development strategy plan is multi-dimensional and interrelated, considering different sectors of the economy and its correspondence to the social needs of the people. He is confident that it will contribute to the achievement of the region's overall objective of sustainable development and increased prosperity.

This study reviews the first regional development strategy for the Kurdistan region, covering the period 2012 to 2016. The objective is to provide a list of corrective and suggestive measures to continuously (on an annual basis) update the document. The review is conducted in several steps. First, it discusses the importance of the strategy considering the optimal allocation of resources from the society's viewpoint. Second, based on the strategy document, each sector of the economy is described in respect of its specific characteristics, potential and challenges, and the relevance of the development strategy's vision, mission and trend forecasts are assessed. Given the existing conditions and needs of the Kurdistan region, the correspondence between the required structure and those presented in the development strategy is assessed and possible gaps are identified. Fourth, based on findings about its strength and shortcomings, a

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<sup>3</sup> The poverty line separating the poor and non-poor can be relative or absolute. The relative measure related to mean or median income is used in developed nations, while the absolute is used in developing countries. MDG target 1A is to halve, between 1990 and 2015, the proportion of people whose income is less than the absolute poverty line of \$1.25 a day.

list of modifications to be incorporated in Ministry of Planning's future revision of the document is provided. In addition, measures to monitor its implementation and indicators for assessment of the outcomes are suggested. Fifth, a list of potential areas of development strategy-related priority research areas to be conducted by domestic and foreign researchers and graduate students is suggested. Finally, the last part summarized and concludes this report.

## **2. Outline and Summary of the Strategy Plan**

The strategy plan contains an executive summary and fourteen chapters. The chapters cover several sectors, including macroeconomics, finance, population and manpower, agriculture and water resources, industry, energy, infrastructure, transportation, communication, water and sanitation, construction and housing, basic and higher education, health, tourism, culture and heritage, social dimensions (gender, youths, vulnerable groups, poverty, family of a martyr, genocide victims and political prisoners), spatial development and environmental sustainability, governance, and the private sector.<sup>4</sup>

The executive summary contains a detailed summary of the current situation and challenges, and regional development strategy goals related to the different sectors of the economy discussed in the document. The first part of each chapter provides general information about the sector, while the second part is structured around the strategic challenges, future trends, regional development strategy goals and strategic monitoring and evaluation. The future trends section elaborates the vision and mission, while the strategic monitoring and evaluation segment discusses goal-achievement and outcome-monitoring indicators.

The first chapter on macroeconomics describes the current situation considering the national income, gross and per capita domestic product measured at the current price further distributed per economic activities, fixed capital formation, investment and consumption expenditure. The second chapter, on the financial sector, introduces the current situation in the sector along with issues of public expenditure, revenues and the banking sector. The third chapter on population and manpower also starts with a description of the current situation emphasizing the population, its

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<sup>4</sup> Due to limited space, a detailed review summary of these chapters has been removed. However, the full review report can be obtained from the author. Alternatively, the reader is referred to the Ministry of Planning's Regional Development Strategy document.

growth rate and structure by age, gender and location. Information on the economically active population, employment and unemployment conditions are also revealed.

Chapter four, on agriculture and water resources, accounts for the current situation with emphasis on land and the production of vegetable and crops, animal production and resources considering livestock and fish. The local vegetable and animal production efficiency and competitiveness and storage capacity is also discussed. The remaining parts of the chapter covers agricultural acquisition and sector-regulating legislations, the role of the private sector, the social dimensions of agricultural and rural development, agricultural sector production and development potentials, as well as water resources and management.<sup>5</sup>

Chapter five and six are dedicated to the industry and energy sectors. In addition to a summary of the current situation, the first part discusses the different industrial activities in progress. This includes industrial activity's contribution to gross domestic product, industrial projects, industrial zones and mineral resources. The remaining part of this chapter discusses the non-oil manufacturing industries and research as well as development undertakings. The energy sector discussed in chapter six covers generated electric power, sources of distributed electric power, power demand and its distribution as well as the per capita electric power consumption. Finally, challenges, future trends, monitoring and evaluations related to industry and energy are conferred.

The chapter on infrastructure covers transportation, communication, water supply and sanitation, and housing sectors. The current situation, stock of road and bridges, transport of passengers and goods, railways and civil aviation are reviewed in the first part. The second part, which deepens in the communication sector, discusses the landline, internet, mobile and postal services. The third part is divided into the current situation of water supply and sanitation services. The final part on the housing sector accounts for the current situation of available housing and future housing demand. Each of these parts further discusses the challenges, future trends and strategic monitoring and evaluation aspects of the sectors.

In chapter eight the current situations of different educational levels are discussed. Different stages of lower levels of education include kindergarten,

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<sup>5</sup> For a more detailed study of the integrated water resources management in the Kurdistan region see Heshmati (2009). Jones and Yoo (2011) and Su et al. (2013) discuss the new strategy of green growth and circular economy considering material use and reuse. Such strategies should be considered by the KRG in its economic policy and program.

primary education grades one to five, secondary education grades six to twelve, vocational education, institutes and higher education. The review continues with a description of the conditions for the physical infrastructure and expenditure on each level of education, levels of school enrolment and dropping out, curricula, as well as poor alignment and coordination between educational output and the labour market requirements. The remaining parts of this chapter are devoted to issues of illiteracy, education and social issues, violence, the gender gap, quality assurance in education and equality in opportunities.

Chapter nine is on the health sector. It elaborates with the current health situation considering general public health, reproductive health and family planning, infant, child and maternal mortality rates and life expectancy at birth issues. The strategic challenges, future trends, strategic monitoring and evaluation issues are also discussed. Chapter ten concerns tourism, culture and heritage. Here, the current situation of tourism and heritage potentials are discussed first, followed by challenges and future trends. The recent years of massive public and private investment in the service sector is pays off in the form of increased tourism inflows.

Chapter eleven is devoted to the social dimensions of the economy and society. It is divided into five parts reviewing the current situation, considering gender, the youth, vulnerable groups, poverty and families of martyrs, genocide victims and political prisoners. The gender part covers issues of women and their participation in economic activities, women and decision-making positions, and equal access to resources. The third part is on vulnerable groups including the disabled, widows, and orphans and children. The poverty part discusses the current situation, its characteristics, the national poverty line, the poverty rate in different governorates, the poverty rate in urban and rural areas, the relationship between poverty and the unemployment rate, as well as strategic challenges and future trends. The final part reports on the situation of families of martyrs, genocide victims and political prisoners, the challenges faced, and future trends and various strategic monitoring and program evaluation indicators.

The spatial development and environmental sustainability chapter contains a review of the current situation of spatial development policies of industrial location, new city and growth centre policies, settlement and rural development policies and policies of the spatial distribution of investment. The discussion continuous with spatial development features in the region, in particular the issues of spatial concentration of the population and economic activity, as well as spatial variability of the economy. Comparative spatial advantages and development resources in

agriculture and tourism areas are also focussed on. Other areas of attention include spatial dimensions and comparative advantage of road networks, spatial variability, the deprivation index, the quality of life index and spatial development potentials. The second part of this chapter concentrates on environmental sustainability and focuses on air, water and soil pollution, desertification and waste management.

The chapter on governance discusses the good governance framework and its key dimensions, focussing on the key principles of good governance and its goals. It mentions the challenges and future trends as well as different indicators of goal achievement and monitoring in respect to governance. The final chapter discusses the private sector, its current situation, challenges, future trends, regional development strategy goals and strategic monitoring and evaluation indicators.

### 3. Macroeconomics

Macroeconomics<sup>6</sup> refers to a theory describing the overall condition of the economy. It covers several subjects, including gross domestic product (GDP), unemployment rate, consumer and producer prices, wages, trade balance and the exchange rate, aiming to understand and develop the economy. The analysis tools used by economists in this field include national income indicators, GDP and contributions of the various economic activities, consumption, unemployment rate, savings, investment and inflation.<sup>7</sup>

GDP is the most important measure representing the total monetary value of goods and services produced by an economy during a given year. The economy is divided into agriculture, industry and service sectors, each of which is further divided into a number of sub-sectors. Depending on initial endowments, an economy produces different kinds and quantities of goods and services, using the available resources like capital, labour, land, energy, water, mines, oil fields, etc. The production process involves combining productive inputs and using the available technology and management to produce goods and services. The inputs of labour, capital, land and material are paid through the production revenues in the form of employment wages, return of investments, renting land and the purchasing of material.

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<sup>6</sup> This section is based on chapter one of the Ministry of Planning's Regional Development Strategy Plan (MOP 2011).

<sup>7</sup> For a general review of the economy in general, and an industrial model for southern Kurdistan, see Heshmati (2010). Heshmati (2008) discusses recent trends in the development of economics research with experiences from Kurdistan.

This chapter focusses mainly on a number of key indicators of the Kurdistan region's economy, including national income, GDP, per capita GDP, and GDP share of different economic activities, as well as investment and consumption expenditures. By using these indicators the strategy plan conducts an analysis of the present situation with the aim of revealing the major challenges faced by the region during the path of economic development. The future trends, vision, mission and strategic goals are identified. A number of indicators are presented to measure achievements of goals and to monitor development in the form of percentages, values and quantities targeted during the strategy plans period.

The plan presents the expected development of GDP (8%) and capital investment (4%), during the period 2008 to 2016. The only yearly observation, in my view still unreliable, is that of 2008, and for the remaining period 2009 to 2016 the forecasted numbers are purely speculative. There are no explanations in the form of calculation methods, calculated growth rates and their underlying assumptions and sources. Neither is any confidence interval estimated attributed to many possible external risk factors beyond the control of the regional government.

The strategy plan shows that during the period 2003 to 2008 the region experienced a high annual growth rate in national income and per capita GDP. The increase is attributed to a more diversified non-agriculture local production as well as increased production and export capacity in the oil and gas sectors. The income per capita and public revenues develop differently due to the regional economic development and price development in the oil and gas markets as well as the exchange rate development. The document attempts to report both the current figures and those adjusted for inflation. However, since there is no statistical bureau in the region and no estimations of price and cost developments available, the suggested growth rates must be inaccurate. However, positive and sustained growth rates in the overall economy are attributed to the high oil prices, the boom in housing, infrastructure, services and trade sectors.

The high growth rate is due to the stable, local and foreign, political and economic circumstances experienced by Kurdistan's economy over recent years. The different sectoral shares of growth rates in 2007 were: transportation, telecommunications, and storage (57%); social and personal development services (22.7%); wholesale and retail (8%); tourism and hotels services (7%); agriculture (5.6%); building and construction (4%); finance and insurance (1.5%); and mining and quarries (0.1%). The different sectors show heterogeneous growth patterns. The

highest growth rate (681.2%) during 2004 to 2006 is that of the transportation, telecommunication and storage sectors.

A major challenge facing the Region's economy is that the contribution of agriculture and industry to GDP is very low (10% and 6.6% respectively).<sup>8</sup> The main source of growth is related to import and distribution with little effect on employment. Low local production capacity, the lack of an active trade policy and the domestic sector's inability to meet local demand has resulted in mounting imports due to increased public expenditure and private consumption exclusively met by increased import. The strategy plan searches for a new way to improve upon the role played by the private sector and its participation in the development process. A conducive and attractive local business environment is recommended to empower it to be a participatory, competitive and proactive domestic producing sector. This seems to be impossible as long as there is no regulation in place that promotes local production and changes the current import and distribution-based business-led development strategy.

The vision for the future is defined as the achievement of sustainable economic development and prosperity for the population. The mission is defined as the improvement of the population's life quality and laying out conducive economic policies and legislations through efficient management geared to develop business and the investment environment for the private sector and an efficient exploitation of resources combined with the utilization of modern technology. The goals include: improving the economic environment and enhancing a balanced development, improving the business environment and supporting safety and security, enhancing investment to support economic development policies, and increasing trade volume and supporting exports. The regional development strategy 2012–2016 aims at increased national income and GDP, higher competitiveness, reduced costs, increased investment, exports, inflow of tourists, and a rate of mining and extraction-based economic activities. A number of indicators are suggested to monitor the macroeconomic goal-achievement.

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<sup>8</sup> FAO (2009) and WEF (2011) discuss the new vision for agriculture to enhance food security and self-sufficiency. Alfsen et al. (1987), Collier (2011) and OECD (2008) discuss exploitation of natural resources and GDP accounting. Tausch & Heshmati (2012) discuss globalization, the human condition and sustainable development in the twenty-first century.

## **4. Strength and Weaknesses of the Development Strategy**

### **4.1 Selected strengths**

The strengths of the development strategy are many. The list here may not include every single strong aspects of the document but the aim is to provide a brief description of a selection of important positive factors. The list includes, among others, the following aspects of significant importance for the development of the Kurdistan region's economy.

The strategy plan, by providing a first five-year development strategy plan for the Kurdistan region, is a historical document and a source of pride and inspiration for Kurds who, despite their large number and inhabiting a resource-rich land area, are lagging behind almost every nation in the world in being self-sufficient in governing, planning and management. However, the reason for such backwardness is beyond the scope of this study.

It illustrates the conditions in the individual sector/sub-sectors and describes their development and contributions to the national economy using available statistics which have not previously been published. As such, it is an informative document for public and private decision makers, social planners, practitioners, national and international investors, researchers and the education sector. However, the quality and magnitude of the data is low.

The plan provides an up-to-date description of the largest and most important sectors of the region's economy, namely the agriculture, manufacturing and services sectors. These main sectors are further divided into several sub-sectors. The plan elaborates the different sectors individually as well as their possible complementarity interrelationships, considering their development potential and contributions to the overall economy.

The strategy plan puts great emphasis on describing the industry/sector specific vision, mission and development goals of the regional government to be achieved in both the short- and long-term perspectives. These are designed and attributed to enhance the development of the different sectors of the economy in a desired direction and magnitude, in harmony with each other to generate a high level of welfare for the general public.

It suggests a large number of industry-specific goal-achievement indicators to be calculated on an annual basis to shed light on the progress and measurement of gaps in over- and under-shooting the stated goals, and further suggests corresponding goal achievement-monitoring indicators to quantitatively, and on an annual basis, assess the dynamics of the progress in the achievement of the stated goals.

It also suggests a number of governance, managerial and administrative, legal, environmental, technological, financial, security and political related suggestions and recommendations considering the role of KRG and its selected policies to achieve a sustainable development in the region. Necessary education and managerial programs, tools and incentives are also suggested to increase the development capacities of the different sectors.

It makes comparisons in the development and availability of development investment resources and their concentration and unequal allocation between and within different governorates, governorate centres, cities, districts and sub-districts. This allows for the analysis of different location's attractiveness to investors and temporal patterns of inequality that result in the comparison of investment and public resources allocations by locations.

The strategy plan also makes a comparison of gaps and their development over time between governorates and between governorate centres, large cities, cities, districts and sub-districts, and also between and within rural and urban areas. This allows for the systematic analysis of heterogeneous development processes and outcomes. It also suggests public interventions to remedy the negative development and externality effects.

## **4.2 Selected weaknesses**

It is obvious that as a first development strategy, it might have many weaknesses and limitations. The list here may not include every single weak aspects of the plan, but the aim in this section is to provide a brief description of a selection of important limitations. The list includes the following aspects of significant importance for the Kurdistan region's economy and a satisfactory implementation of the strategy plan.

The first weakness of the plan is that it is just a development strategy and the regional government and its ministries lack the necessary basis tools to implement it in accordance with a specific timetable. Such important tools are strong teams of experts in different fields and skilled civil servants engaged in working with the plan, absent of a national account, a macroeconomic (alternatively sectorial) model and the unavailability of comprehensive statistics collected on a systematic and full-coverage basis.

Despite the large dimensions of the region's economy investigated, not all sectors are discussed in this first five-year strategy plan. The left-out ministries are endowment and religious affairs, justice, interior,

municipalities, natural resources, defence and trade. Some of these are partially mentioned in relation with tourism, industry, but justice, natural resources and trade are mostly ignored.

In the current version of the strategy plan, little is mentioned about direct and indirect interaction, interdependence and spill-over effect relationships between the different economic sectors. For instance, the agricultural sector through rationalization supplies excess labour to the industry sector which in turn supplies the necessary local needs-based adopted technology to agriculture, affecting its productivity and competitiveness.

Little is mentioned about mechanisms for commonly used project descriptions, evaluation, ranking, selection, management, implementation and financing based on Benefit-Cost and SWOT<sup>9</sup> analyses from society's perspective. Since most large-scale projects are related to infrastructure, and as such are publicly financed, these public economy and finance issues are extremely important to economize on scarce resources and to combat corruption.

Kurdistan—which has gained local autonomy and since 1991 has had seven governments—lacks vital mechanisms for accountability and development. In the current plan, nothing is mentioned about the national account and a detailed description of the public budget and its allocation to different developments and service activities. Also, nothing is mentioned about any follow up of the projects and feedback to improve the routines.

So far, little emphasis is made on the assessment of the political, security, economic and welfare, technological, financial, management, environmental and social aspects of the signed oil and gas contracts. The lengthy time aspects of these contracts and magnitude of risks imply that researchers should assist decision-makers to better manage each of these aspects to prevent conflicts with legally resourceful MNCs (multinational corporations).

The forecast methods are not described clearly. The text suggests that the forecast is based only on data from 2008. Conducting a forecast of macroeconomic indicators requires the use of time series data and regression methods to estimate the effects of determinants of the outcome and prediction of their level in the future. The absence of such a time series and information indicates the lack of the forecast methods' relevance.

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<sup>9</sup> SWOT is a method for the analysis of strength, weakness, opportunity and threats associated with a project.

The different sectors of the economy are interrelated considering resources, planning, management and causal effects. The current strategy does not mention much about the situation of coordination and cooperation among different ministries and agencies in the implementation of the many interdependent development projects and policies. The lack of such coordination and cooperation increases potential gaps in development across sectors.

Administrative and skilled manpower plays a major role in the design of policy and its harmonization with different interest groups and legal rules. Little is mentioned about the administrative, legal and skilled manpower situation and their abilities to understand the development needs, provision of tools for implementation of different development projects, and follow ups and assessments of their socio-economic impacts.

The KRG has a limited capacity to formulate a macroeconomic model covering all dimensions of the national economy, design goals, and an appropriate set of policies and incentives accounting for scientific and multidimensional causal relationships to understand the cause and effects and to increase the achievement of goals. In addition it has no or a limited possibility to impact national, regional or international politics and external shocks.

Currently, the public revenue source is not diversified, implying a high degree of dependency on oil prices and the exchange rate development as well as the revenue-sharing mechanism and collaboration with the central government. It is highly desired that sources of public revenues be diversified to reduce the risk associated with a single revenue source. The introduction of a new, progressive and broad-based taxation system will be helpful.

There was a dual governance system in Kurdistan with headquarters in Hawler and Suleimaniya, and the system still partially exists. Little is mentioned about the dual governance system in the regions and its role as an obstacle for smooth and effective project implementations. The system, together with unbalanced power and resource allocation, has created gaps in the development between the governorate centres and the rest.

In recent years, Iraq has consecutively been ranked among the top ten most corrupt countries of the world by Transparency International. Kurdistan, as part of Iraq, is not much different. Nothing is mentioned about the corrupt governance structure in the region and its threat to the strategy's implementation. High costs are related to tax aversion, stolen assets, the destabilizing impact of corruption, and cost to businesses and welfare.

In recent decades, no Bureau of Statistics has operated in the region. Since its establishment in 2005, the Ministry of Planning has collected limited macroeconomic data for internal use. A lack of trained statisticians and a will to improve accountability and the collection and publication of national statistics may explain the absence of such and other vital institutions for establishing good and efficient governance.

The strategy must be written and upgraded to a chain of five-years plans by the internal manpower of the Ministry of Planning. In addition, the ministry should have the capacity to design policies, suggest incentives and cooperate with other ministries and agencies to implement it. Nothing is mentioned about the ministry's in-house capacity for planning, implementation, assessment and follow up to lead the development and to achieve the stated goals.

## **5. Recommendations for the Ministry of Planning**

The Ministry of Planning is invited to organize general training programs aimed at participation by ministries and public agencies engaged in the implementation of the strategy plan. The training programs need to be primarily concerned with a good understanding of the plan and its goals. The issues of Benefit-Cost and SWOT analyses of major public and partnership projects and their implementations and follow ups should be focused on.

In-house manpower capacity is crucial for any public or private agency engaged in development. The Ministry of Planning is urged to conduct an assessment of its own capacity for planning, policy design, implementation, evaluation, follow up and feedback to lead the development and achievement of the goals. The assessment will shed light on the limitations to be strengthened through specific capacity-enhancing training programs.

Based on the above-mentioned internal assessment, the Ministry should prepare for the comprehensive planning and organization of various training programs needed to increase the capacity of employees. The training can be facilitated by inviting specialist trainers to universities in Kurdistan, invited from abroad from among the Kurdish diaspora, or who may also be non-Kurdish. The Korean Development Institute (KDI) for governance might be a good training partner.

It is important to launch an assessment of the conditions of cooperation and coordination of development activities among different ministries and public and private agencies. The findings will be helpful in undertaking a number of actions from the ministry's side to enhance such cooperative

and coordination activities. This will not only secure a successful and smooth development process but at a lower cost and in a shorter time.

In the digital era, E-Government plays a key role in development. In order to fully take advantage of the information and communication technology, economies of scale and network effects, it is necessary that E-Government is implemented fully and simultaneously in all sectors of the economy and society. This fully integrated and coordinated introduction of E-Government will enable a much larger benefit than partial case.

Kurdistan has benefited greatly from the rapid diffusion of information and communication technology. The KRG can adopt a plan to control the spread of mobile phone access through introducing an identity smartcard for all inhabitants registered when applying for mobile SIM cards, which are also important for health, insurance, education, housing, welfare, job market, banking, business start-ups, and many other services.

It would be desirable to train professional statisticians and to establish a Regional Bureau of Statistics with a national character. The Bureau should plan to conduct the systematic collection of data. The data could be used by the ministries in the computation of the proposed goal achievement indicators and to assess development progress in different areas. The Swedish Bureau of Statistics (SCB) has shown interest in supporting such development.

In order to create the suggested set of development and goal achievement indicators, it is important to conduct systematic research into the design of goal achievement indicators and their monitoring mechanisms, as well as in methods of evaluation of their outcomes, causal effects and the direction of effects. This will ensure the design and adaptation of suitable indicators capturing the real essence of the development process.

Based on the development goal and monitoring indicators, an assessment will be made of the performance of different ministries and public agencies in the achievement of their goals and their contribution to the national welfare system. On an annual basis, different incentives and programs of reward will be introduced and different ministries and agencies will be penalised based on their performance in achieving the expected outcomes from publicly financed projects.

The conduct and assessment of the performance of public corporations in the provision of services and its quality and correspondence with market needs will be made. At the same time, the performance of privatized corporations will be assessed and their performance before and after the ownership changes compared. This will allow to effectively investigate the

achievements of the expected effects from the privatization process and liberalization of the market.

Currently, many public services are characterized with insufficient capacity and with low quality. Privatization promotes competition between privately and publicly operated services and enhances service quality. Public high and middle schools are still totally free and have low service quality. Partial financial contribution from families and their engagement in operation will help in developing the very poor quality of these facilities.

Water and electricity supply are two key resources characterized by shortage and mismanagement from supplier, consumer and environmental perspectives. In particular, water utility charges for households, the private sector and industry are very low. An amendment is therefore required in the water and electricity pricing policy. It is useful to investigate variable pricing water and electricity as part of demand response and demand management policies.<sup>10</sup>

SMEs play a major role in the formation of industries and the creation of employment opportunities. The government's promotion for SMEs is required, encouraging the small manufacturing productions. The regional government can adopt strategies for small productions such as household appliances in the first stage, moving to privatization in the mature stage. This will help to develop a diversified manufacturing sector much faster.

The strategy plan is new and then KRG lacks experience in its formulation and implementation. It is necessary to prepare a revised version of the document and to modify it on an annual basis. This is best conducted based on the outcome of continuous evaluation and the monitoring of outcomes. This process will in turn form the basis for the second strategy plan of 2017–2021 which will be an extension of the first.

In order to facilitate a good overview of the development conditions at the ministry and agency levels, it is advised that necessary steps are taken to establish an internal research department at each ministry and large public agency. The research department prepares the necessary evaluations of organizational and development needs of the sector and prepares the assessment of inter-departmental activities and annual performance evaluations.

The KRG is invited to establish a national research institute to conduct research covering the whole economy and sectorial interdependence. It serves as a think tank for the government in its macroeconomic policy

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<sup>10</sup> For efficiency in the generation of electricity at the plant level and electricity demand analysis see Heshmati (2012 and 2013).

formulation and implementation. It will help to redirect the current business-driven strategy to a national planning-driven development. Emphasis is to be placed on the new phenomenon of local business and inter-regional investment flows.

## **6. Potential Areas of Development**

### **Strategy Related Research**

There is an endless amount of research needed to ensure a decision-making process consistent with the development strategy. Currently, the local research capacity is extremely low or non-existent. This is in spite of having nineteen small and large, public and private, old and new, foreign and national and research universities and technical institutes. Their lack of research output is evidence of the low quality of higher education and the necessity to reform the sector.

The topics of research related to Kurdistan's economy and society for researchers and graduate students in mainly the social science areas of rights, law, politics, sociology, economics, agriculture, environment, industry and business, which can be grouped into: plans, policy and rights; transparency, accountability and justice; laws and regulations; priority investigations, and other research topics. Each of these areas is explained below.

The first area of plans, policy and rights includes a number of important studies related to: the political economy of a Kurdish state; the strategy of the Kurds; the economic plan; the formation of a national legal team; the industrial policy; different aspects of development policies; development based on the extraction of natural resources and the avoidance of the curse of natural resources; individual and detailed sector analysis (agriculture, industry, finance, health, education, environment, water, electricity, and other services); pricing water and electricity as part of demand management policies; war and reconstruction; Kurdish identity; minority rights; language rights; the right of self-determination; different forms of discrimination; cross-border economics, educational, developmental, cultural and social relations; urbanization, service development, urban and rural poverty, and increased vulnerability.

The national legal team, consisting of internationally experienced lawyers assisted by national lawyers, is aimed to specifically work with documentation and preparations to bring justice to major issues of national character like *Halabja*, *Anfal*, forced migration, displacement, genocide, destruction of rural areas, landmines, and other forms of aggression

against Kurds sanctioned by national states, as well as other international relations and agreements which are of national interest and where the KRG currently has low or no capacity to process.

The second area of transparency, accountability and justice includes studies related to: transparency and accountability; corruption and all of its dimensions and effects; public sector size and bureaucracy; public procurement project procedures; nepotism and abuse of power; harmful governance-politics-business relationships; promotion of governance-university-business relationships; reasons for success of business but failures of politics; the nature of current business-driven development strategy; the provision of services such as food, education, training, energy, water, health, welfare, safety, employment, waste management, etc.; inequality and eradication of poverty and their dimensions, sources and effects; the formation and distribution of assets; gender inequality, discrimination and its dimensions; children's and women's well-being; and finally the treatment of minorities within the region.

The Kurdistan Region is subject to the Iraqi law, which are mostly from the 1950s, 60s and 70s. External conflicts and wars did not leave much space for their upgrades. These laws are discriminatory in character and are outdated. There is a great need for their amendment and the introduction of new laws and regulations adapted to modern societies. A limited number of laws are amended by the regional parliament. The third area of laws and regulations include various studies related to: water law; environmental law (from 2010); business and competition law; trade law; labour, equality and discrimination law; banking and finance law; media and communication law; asset holdings law; taxation law; oil and gas law (from 2008); (foreign direct) investment law (from 2006); health, medicine and education; central-regional government relations and power sharing; mechanisms for oil and gas revenue sharing; and various other forms of rules and regulations needed.

The fourth area of priority investigations are related to: the formation and strategy of the national legal team; the cases of *Halabdja*, *Anfal*, *Kerkuk*—Paragraph 140, landmines,<sup>11</sup> disappearances, forced migrations and displacements, political prisoners, and refugees and their repatriation. Other priority areas involve integration and cross border economic, cultural and social relations; the establishment of national research institutes and national research foundations, supporting and incentivizing academic publication series and the formation of different academic

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<sup>11</sup> Heshmati and Khayyat (2013) provide a first comprehensive study of landmines in general and its socio-economic impacts in southern Kurdistan.

associations. These include the World Kurdish Congress (WKC, established 2011), academic journals and book series linked to WKC (Heshmati, Dilani and Baban 2012),<sup>12</sup> research institutes like the Hawler Institute for Economics and Policy Research (established in 2006, but in the absence of public support was shut down in 2008), diaspora representation, and more.

The final area of research involving diverse research topics includes: individual or comparative sector analysis; laws and regulations to enhance different sectoral potential and competitiveness; evaluation of training programs; guidelines on assessment of multi-dimensional aspects of oil and gas contracts; the review of goal-achievement and monitoring indicators related to the development and their suitability to the Kurdistan case; the optimal and just allocation of public finances; privatization programs; public-private partnership programs; the environmental aspect of different development programs; equality in distribution of public investment and incentives; attracting private and foreign investors to participate in rural development programs; youth unemployment and educational programs; enhancing self-sufficiency and economic security; changing attitudes towards national development and business-driven development; the labour market, financial market, trade and local production, educational and health policies of the region; agriculture and food security; the development of mining in the region; investigation into exploiting natural resources; investigation into pricing water and electricity as part of the response to demand,<sup>13</sup> and demand management policies to reduce the generation and consumption of carbon-based electricity during peak times, etc..

## **7. Summary and Conclusion**

This study reviews the first five-year development strategy plan for the Kurdistan region covering the period 2012 to 2016. It identified a number strengths and shortcomings of the existing document and provided a list of suggested corrective measures to update it as part of its revision and extension to be used in preparations for the second five-year strategy plan for the period 2017 to 2021.

In the line with the aim of this chapter, the review discusses the importance of the economic plan considering the optimal allocation of

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<sup>12</sup> Heshmati, Dilani and Baban (2012) provide the first collection of articles with the title “Perspectives on the Kurdistan economy and society in transition.”

<sup>13</sup> For a review of demand response models in electricity market see Heshmati (2012). For analysis of the generation of electricity with different technologies and its role for economic development see Heshmati (2012).

resources from the society's viewpoint and precondition factors for the achievement of sustainable development. Furthermore, given the existing conditions and needs of the society, the correspondence between the plan contents compared with those of the actual development strategy is also assessed.

The strategy plan describes in detailed form the current state of each individual sector of the region's economy in respect to its specific characteristics, potential, challenges, contributions and the relevance of the development strategy's vision, mission and forecasts are also evaluated. A few important sectors with inter-sectorial relationships for various reasons are intentionally or unintentionally left out of the current document.

Based on the existing development strategy document and findings about its strength and shortcomings, a list of corrective measures suggested in the document is provided to be taken into consideration when revising the document, accounting for necessary modifications along the suggested measures to monitor the planned implementation and listing the indicators suggested for the assessment of the development outcomes.

We note that the region is relatively safe and stable. The KRG is committed to improving safety and security for its citizens and investors. This policy has led to a significant improvement in welfare and living conditions in the region. Basic services are provided through public and private sectors and their partnerships. The regional government has initiated comprehensive investment in the development infrastructure.

Large-scale public employment, support and development programs have also induced increased bureaucracy, inefficiency and widespread corruption. Recently, President Masud Barzani has been actively concerned with the populations' demand to battle widespread corruption (Bajalan 2012), issuing an order that a committee be established to prepare a detailed report about the state of corruption in the region and to suggest measures to combat it.

Significant improvements and efforts are required in the areas of vision, development strategy, economic planning, development policy, statistics, accountability and transparency. The rapid development and low local construction capacity, with little or no regulations, has resulted in the high dependency on a business-driven development, managed through imported labour and material. It is the result of harmful and tied business-politics-governance relationships. The relationship should be replaced by national development driven university-governance-business relationships.

Currently there is a low general emphasis on national interest, as personal interest and rent seeking is dominating the political and governance spheres. The region has also failed in the creation of region-specific

standards resulting in a high dependence on out-dated laws and regulations. A reform of higher education, the introduction of vocational training programs and the training civil servants is required to boost the low work moral and discipline and to enhance skill, capacity and capability in different areas to promote local production and solutions to the problems.

Several recommendations are made directed to the ministry of planning. In addition, similar but general recommendations can be directed to the KRG as a whole such as to have a vision, present it in a well-thought plan, design policies and mechanisms to implement it. The rapid changes in technology and society require a dynamic and adoptive way of thinking. In order to catch up with other societies and to utilize the available knowledge, it is necessary to invest in capability, exchange and higher level of self-sufficiency. The achievement of goals is eased by promoting national interest and ways of thinking, and reforms of the education, governance and institutions.

A higher level of efficiency can be achieved by introducing high civil servant examination and the continuous upgrading of skills. The business-politics-governance relationships need to be regulated, while promoting government-education-business cooperation. The production of statistics and increased transparency and accountability will enhance active participation of the public at this critical stage of our nation building in the development programs. It is clear that public and individual monopolies reduce the social welfare. Nepotism and the abuse of power is also destructive and costly to any society. Nominations of high civil servants should be based purely on skill and performance. In addition, the higher education and development policy which is financed by natural resource extraction should target Greater Kurdistan, not only the Kurdistan Region.

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## CHAPTER TWENTY

# FOSTERING KURDISH INNOVATION TO FUEL REGIONAL DEVELOPMENT AND ECONOMIC GROWTH

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### **Abstract**

Globalization and advances in science and technology have expanded the importance of intellectual property. Universities provide a number of synergies in technological innovation for a government to leverage through funding and policy. Policy includes the development of laws which facilitate research and innovation, including a patent system. Resourcing includes government grants, tax incentives, loans and scholarships targeted to encourage research in areas the government deems beneficial. Research can potentially provide improvements to issues specific to Kurdistan, such as agriculture, medicine, education standards and petrochemicals. Universities in Kurdistan should address the concerns within the region to develop the local economy. As the situation in Kurdistan improves, the KRG can leverage the expertise, research

infrastructure and experience at its universities to solve regional problems and foster economic development. The creation of technology development departments and intellectual property laws are vital aspects of this process, and they are investments that will contribute to the long-term viability of Kurdistan's economy and infrastructure.

**Keywords:** Intellectual Property, Policy Reform, Economics

## 1. Introduction

Globalization and advances in science and technology have expanded the importance of intellectual property.<sup>1</sup> Universities provide a number of synergies in technological innovation for a government to leverage through funding and policy. Policy includes the development of laws which facilitate research and innovation, including a patent system. Resourcing includes government grants, tax incentives, loans and scholarships targeted to encourage research in areas the government deems beneficial. Research can potentially provide improvements to issues specific to Kurdistan, such as agriculture, medicine, education standards and petrochemicals. Universities in Kurdistan should address the concerns within the region to improve the local economy.

## 2. Policy

The implementation of patent and intellectual property laws is imperative for the progress of innovation in Kurdish academic institutions. To encourage national development, the Kurdish Regional Government (KRG) should apply intellectual property protection by enforcing patent

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<sup>1</sup> According to WIPO: "Intellectual property is broadly separated into two categories, industrial property and copyright. Industrial property includes inventions (patents), trademarks, industrial designs, and geographic indications of source. Copyright, includes literary and artistic works such as novels, poems and plays, films, musical works, artistic works such as drawings, paintings, photographs and sculptures, and architectural designs. Rights related to copyright include those of performing artists in their performances, producers of phonograms in their recordings, and those of broadcasters in their radio and television programs. Patents are the exclusive right, granted by the government, to make use of an invention or process for a specific period of time, usually twenty years." Mettler, Stephen. (2011). WIPO Overview. *The World Intellectual Property Organization*. Retrieved from [http://www.wipo.int/export/sites/www/freepublications/en/general/1007/wipo\\_pub\\_1007\\_2011.pdf](http://www.wipo.int/export/sites/www/freepublications/en/general/1007/wipo_pub_1007_2011.pdf)

legislation to thwart infringement. Innovation is catalyzed through education, creativity and science, elements often found in abundance within a university. Sound, national, intellectual property protection encourages private venture and investment.

The protection of intellectual property must be included within the government's legal framework and be protected. Countries overlapping Kurdistan are members of the World Intellectual Property Organization (WIPO), a specialized agency of the United Nations that strives to promote greater worldwide intellectual property protection. Iraq's member status grants Kurdistan the advantage of access to support intellectual property protection, specifically through infrastructure development.<sup>2</sup>

The KRG's recent higher education reforms and investment in regional infrastructure have laid the foundation for Kurdistan's continued future development. Policy reform, particularly focused on intellectual and industrial property, will encourage technology transfer, or "the transfer of research results from universities to the commercial marketplace for the public benefit."<sup>3</sup> The underpinnings of technology transfer are closely linked to fundamental research activities in universities.

Establishing balanced, meaningful patent reform is critical to the region's intellectual property framework:

Patent laws that are too strict can slow the process of technological advancement by drastically restricting who can expand on patent-protected inventions. Furthermore, because a patent holder has a monopoly on the production, distribution and sale of a product for the term of the patent, overly strict patent laws can lead to price distortions.<sup>4</sup>

Constructive dialogue with KRG ministries and scientists is needed to draft balanced intellectual property legislation.

The KRG's strategic development plan should be a multi-dimensional approach to address regional issues, including reforms for research and development. These recent reforms compliment innovation and intellectual

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<sup>2</sup> Mettler, Stephen, (2011), WIPO Overview, *The World Intellectual Property Organization*.

[http://www.wipo.int/export/sites/www/freepublications/en/general/1007/wipo\\_pub\\_1007\\_2011.pdf](http://www.wipo.int/export/sites/www/freepublications/en/general/1007/wipo_pub_1007_2011.pdf)

<sup>3</sup> Berman, Elizabeth, P., "Redefining Technology Transfer: How Patents Became a Proxy for the Success of U.S. Science." Department of Sociology. University of California, Berkeley. [http://citation.allacademic.com/meta/p\\_mla\\_apa\\_research\\_citation/1/1/0/2/9/pages110296/p110296-1.php](http://citation.allacademic.com/meta/p_mla_apa_research_citation/1/1/0/2/9/pages110296/p110296-1.php)

<sup>4</sup> Hummel, Calla, How do Patent Laws Influence Innovation? *EHow*.

[http://www.ehow.com/about\\_6692632\\_do-patent-laws-influence-innovation\\_.html](http://www.ehow.com/about_6692632_do-patent-laws-influence-innovation_.html)

capital. Government institutions and Kurdish universities can utilize intellectual property reform to facilitate collaboration at the region's four research centres. In addition, Kurdish academic institutions can utilize sponsored grants to highlight the importance of coupling education and research to advance the region's academic culture.

### 3. Policy Framework

Legislation addressing patent policy promotes a vision of Kurdish national development through innovation derived from the region's universities. An American scientist and professor, Vannevar Bush, pioneered the concept of recognizing the value of university research as a vehicle for enhancing the economy through support of basic science.<sup>5</sup> Through a published report, Bush's notion became instrumental in providing a substantial increase in funding for research by the United States federal government. It stimulated the formation of the National Institutes of Health (NIH), the National Science Foundation (NSF), and the Office of Naval Research (ONR). These organizations are governmental offices that support research and education through colleges and universities. Due to the success of these and other agencies, the funding of basic research by the federal government is now considered vital to the national interest.<sup>6</sup>

Studying and adopting effective patent reform from countries like the United States can provide a framework for effective legislation. Prior to 1980, when the American government funded research, it did not relinquish the patent rights to the inventing organization, except in rare instances.<sup>7</sup> The government retained the patent title and only made inventions available through non-exclusive licenses to any entities interested in utilizing the developed technology. Companies that acquired government-owned patents did not have exclusive rights to manufacture and sell the resulting products.<sup>8</sup> Justifiably, companies were reluctant to invest and develop new products, as competitors could also acquire licenses and then manufacture and sell the same products.<sup>9</sup> Accordingly, the government remained unsuccessful in attracting private industry to license government-owned patents. Although taxpayers were supporting

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<sup>5</sup> University of California, (2009), "Technology Transfer," *The Bayh-Dole Act: A Guide to the Law and Implementing Regulations*.  
<http://www.ucop.edu/ott/faculty/bayh.html#FN3>

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

the federal research enterprise, they were not benefiting from useful products or the economic development that would have occurred with the manufacture and sale of those products.<sup>10</sup>

In 1980, however, legislators concluded that the public would benefit from a policy that permitted universities and small businesses to retain ownership of inventions made under federal funding to become directly involved in the commercialization process.<sup>11</sup> This new policy would also permit exclusive licensing when combined with diligent development and transfer of an invention to the marketplace for the public good.<sup>12</sup> Stimulation of the U.S. economy would occur through the licensing of new inventions from universities to businesses that would, in turn, manufacture the resulting products in the U.S.<sup>13</sup>

With the passing of the Bayh-Dole Act, colleges and universities immediately began to develop and strengthen the internal expertise needed to effectively engage in the patenting and licensing of inventions.<sup>14</sup> Previous to this legislation, institutions had not been actively pursuing patentable research. After the passage of this law, however, universities began to establish entirely new technology transfer offices, building teams with legal, business, and scientific backgrounds. These activities continue to accelerate nationally as the importance of the Bayh-Dole Act becomes fully appreciated.<sup>15</sup> Evidence of this is reflected in the research funding, patented technology and royalty revenue. Though influential, the Bayh-Dole Act was passed over three decades ago and needs reform. The KRG can utilize the legislation and current recommendations for reform, then apply the proposals within the context of Kurdistan to formulate effective policy.

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<sup>10</sup> Ibid.

<sup>11</sup> Berman, Elizabeth, P. "Redefining Technology Transfer: How Patents Became a Proxy for the Success of U.S. Science." Department of Sociology. University of California, Berkeley. Retrieved from [http://citation.allacademic.com/meta/p\\_mla\\_apa\\_research\\_citation/1/1/0/2/9/pages/110296/p110296-1.php](http://citation.allacademic.com/meta/p_mla_apa_research_citation/1/1/0/2/9/pages/110296/p110296-1.php)

<sup>12</sup> Ibid.

<sup>13</sup> Cole, Jonathan, Brooks, Harvey, Stokes, Donald, et al. "Science the Endless Frontier: Learning from the Past, Designing from the Future." *Highlights from the Conference Series*. <http://www.cspo.org/products/conferences/bush/fulltexthighlights.pdf>

<sup>14</sup> Ibid.

<sup>15</sup> Berman, Elizabeth P., "Redefining Technology Transfer."

Kurdish technology transfer professionals, including those from the Kurdish intellectual diaspora,<sup>16</sup> should establish an organization devoted to the promotion of technology transfer between academic institutions, private enterprises, and the KRG. A Kurdish organization would be comparable to the U.S. based Association of University Technology Managers (AUTM). This organization boasts a network of over 3,500 working professionals.<sup>17</sup>

Current patent regulations for federally-funded research that can be incorporated within the Kurdish framework stipulate that:

Universities must share with the inventor(s) a portion of any revenue received from licensing the invention. Any remaining revenue, after expenses, must be used to support scientific research or education. The university has an obligation to disclose each new invention to the federal funding agency within two months after the inventor discloses it in writing to the university. The university must submit periodic reports regarding the utilization of the invention as requested by the funding agency, but no more often than annually.”<sup>18</sup>

The KRG should establish patent reform that encourages goals contributing to innovation and scientific knowledge, but within a defined timeframe and set resources. Periodic, comprehensive reviews of KRG-funded research programs should be implemented. Each program should be required to prioritize current activities in terms of merit and strategic importance. A Kurdish national committee of scientists, including those from the Kurdish intellectual diaspora and with experience in science, but without current vested interests, should review the assessments and choose where to limit exploration.<sup>19</sup> A balance should be obtained to ensure future programs are measured by excellence and quality of work.

The KRG’s implementation of relevant intellectual property legislation is needed for universities in Kurdistan to promote the rewards of research, innovation and education. The Kurdish academia, society and economy can benefit from legislation like the Bayh-Dole Act.

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<sup>16</sup> Sindi, Heja, “Developing a ‘Kurdistanian’ Diaspora Intellectual Model and Policy: A Public Management Perspective” [PDF Document], <http://kurdishcongress.org/data/upimages/subfolders/Presentations/heja-sindi.pdf>

<sup>17</sup> Association for University Technology Managers, “About AUTM,” <http://www.autm.net/About/6790.htm>

<sup>18</sup> University of California, “Technology Transfer.”

<sup>19</sup> Cole et al., “Science the Endless Frontier.”

## 4. Resourcing

The establishment of patent policy and KRG support compliments the government's endeavours to diversify the region's economy. Recent legislation encourages foreign direct investment, a component that can potentially encourage research in academic institutions.<sup>20</sup> The KRG has made progress with investment from oil revenues similar to the UAE investment model.<sup>21</sup> Iraq's political turmoil and social instability continue to create negative conditions for Kurdistan. Nevertheless, despite the increasing private investment within Kurdistan, the number of patent applications and intellectual property outreach programs are negligible.<sup>22</sup>

The flow of oil export revenues can be applied to invest in research and innovative technology. Grants funded by the KRG through a research and technology transfer foundation can address the current imbalance of what is taught versus what is demanded in Kurdistan.<sup>23</sup> The KRG's investment in human capital, coupled with reform in higher education, creates regional economic opportunities.

Academic institutions maintain scholars and researchers across broad disciplines. Offices for technological development promote and develop scientific innovation within the university for the benefit of society. Through research and development, the institution generates achievements to benefit the university and respond to issues specific to the region. Universities worldwide have established an office of technology transfer to foster innovation and encourage development. Future KRG support potentially offers the region's universities the opportunity to establish departments for technology transfer to direct commercialization of the institution's research results.

The world's most prestigious universities have offices for technology development that benefit society and spur economic growth. In coordination with their offices for technology development, U.S. universities have discovered new technologies such as drugs and energy saving products. The university sells the research to businesses and receives revenue from licensing fees or royalties, or a partial ownership stake in a patented product. Although global economic growth has

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<sup>20</sup> Kurdish Regional Government, Ministry of Planning, (2011), *Kurdish Regional Development Strategy 2012–2016*. [http://www.mop-kr.gov/resources/MoP%20Files/PDF%20Files/gd\\_ps/regional\\_development\\_strategy.pdf](http://www.mop-kr.gov/resources/MoP%20Files/PDF%20Files/gd_ps/regional_development_strategy.pdf)

<sup>21</sup> Ibid.

<sup>22</sup> Mettler, "WIPO Overview."

<sup>23</sup> Kurdish Regional Government, Ministry of Planning, *Kurdish Regional Development Strategy 2012–2016*.

stagnated, scientific research from universities has created over 555 start-up companies and resulted in over 4,500 patent optioning and licensing deals, earning billions of USD in revenue for the institutions.<sup>24</sup> Johns Hopkins and Harvard University are premier institutions of scientific discovery. In 2008, Johns Hopkins research:

was conducted by more than 6,500 faculty and scientists working in 120 countries with total revenues exceeding \$1.6 billion. Johns Hopkins faculty and students published more than 3,500 scientific papers and books. Hopkins researchers filed 500 patents, disclosed 305 new inventions, started 12 new companies and generated income or equity returns of \$11 million.<sup>25</sup>

The universities' focus on delivering innovations through research have generated revenue and established academic prestige. The benefit of innovation-focused universities in other countries demonstrates the potential for academic institutions in Kurdistan.

Government and corporations are increasingly working with universities to discover new technologies by funding research and development. Globally, R&D expenditures are expected to reach \$1.2 trillion USD in 2011, an increase of 3.6% from the previous years. In the United States, intellectual property was valued at \$5.5 trillion USD, while 60% of U.S. exports, \$900 billion in 2007, come from intellectual property intensive industries.<sup>26</sup> The Association of University Technology Managers (AUTM) is a conglomerate of American universities, hospitals, research institutions and technology management companies. The AUTM has collectively earned in excess of \$1 billion USD in annual licensing revenue each year from 2000 to 2008.<sup>27</sup> A similar organization of integrated industries in Kurdistan would enhance government, academic, and private networks.

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<sup>24</sup> Gomer, Gregory, (2010), *UMass Generates More Income than MIT & Harvard from Licensing Technology*, BostInno: The View from Inside Boston, <http://bostinno.com/2010/12/21/umass-generates-more-income-than-mit-harvard-from-licensing-technology/>

<sup>25</sup> Johns Hopkins University, *Programs and Services: Research*, Office of the Provost, [http://web.jhu.edu/administration/provost/programs\\_services/research](http://web.jhu.edu/administration/provost/programs_services/research)

<sup>26</sup> Millien, Raymond, (2010). The US \$173.4B Global Intellectual Property Marketplace? <http://dcipattorney.com/2010/12/the-us173-4b-global-intellectual-property-marketplace/>

<sup>27</sup> Ibid.

## 5. Implementation

Academic institutions within Kurdistan will positively affect the development and growth of intellectual property within the region. The establishment of technology and development offices provides universities with the opportunity to link innovation with commercial industry. As a department within an academic institution, the office can build partnerships with the Kurdish government leading regional corporations and private investors.

Access to KRG research grants creates concern for accountability and transparency. The process of receiving funds should include proper analysis through an investment board to prevent imprudent or corrupt decisions. Universities and government organizations should establish a court for internal regulation and conflict resolution. Providing government-sponsored research through universities creates an incentive for researchers and students to discover new technology. Further, allowing universities to retain patent rights encourages universities to pursue innovative technologies. Kurdish university discoveries will provide the institution with continued revenue through patent royalties and licensing.

A KRG organization modelled after the NSF would establish technology development agenda in collaboration with all universities. This collective would also evaluate new technologies for commercialization. An organization of technology transfer can utilize grants to focus research on current regional issues such as agriculture technology. Agriculture in Kurdistan once significantly contributed to the region's GDP. However, decades of past conflict and the present instability are contributing elements that have negatively impacted this sector. Revitalizing the KRG's agriculture is important to the economy and population in Kurdistan. More efficient technologies must be applied in the agriculture sector to restore the recent trend of moving from farms to cities to find greater financial opportunities. This would also address regional social concerns like unemployment.

Establishing a technology office also permits the university to address future trends: "Given the current fertility rate of Iraq, the nation's reliance on imported food, and the absence of a similar facility for agricultural biotechnology in the Middle East, the development of such a resource in the region would seem both germane and opportune."<sup>28</sup> Through

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<sup>28</sup> RTI International, (2008), "Kurdistan Region Economic Development Assessment."

[http://kurdishcongress.org/data/upimages/subfolders/PDF/usaid2008\\_kurdistan\\_region\\_economic\\_development\\_assessment.pdf](http://kurdishcongress.org/data/upimages/subfolders/PDF/usaid2008_kurdistan_region_economic_development_assessment.pdf)

university-funded research, the KRG can address specific regional challenges such as this while supporting the university system.

Providing the opportunity to develop new technology within Kurdistan will encourage the participation of the large Kurdish diaspora. Millions of Kurds generally left the region to escape persecution or become educated abroad, and most continue to reside in developed countries. Recent advances by the KRG to establish good greater transparency and accountability facilitate economic opportunity and stability. Governing improvements coupled with research opportunities or university grants can address the existing issue of Kurdish repatriotization.<sup>29</sup>

The current financial climate has lowered the availability of research grants, while increasing competition. However, opportunities from the region's universities will attract the Kurdish intellectual diaspora. Further, a robust network to connect and inform the Kurdish diaspora for research opportunities should be developed to appeal to the broad community. At present, the "Kurdish Intellectual Diaspora is not going through a structured process of Planning for HR, Recruitment, Talent Management, Performance Evaluation and Compensation when attempting to relocate."<sup>30</sup> Establishing an information platform to communicate with the extensive Kurdish diaspora can ease the region's repatriotization dilemma and foster global unity.

University funds can be focused on developing new technology to address the needs of the world's aging population. For instance, according to demographic studies, the global population is aging which increases the economic potential of medical research and technology development. With support from the KRG, universities can encourage Kurds to conduct lucrative medical research and patents in the region through the use of facilities or access to capital. For example, Kurdish Doctors Said Hakki and Hamid Hakki, who currently reside in the United States, have developed an innovative medical device with an estimated annual market potential of \$1.2 billion USD. This technology holds six U.S. patents and a Patent Cooperation Treaty (PCT) publication. Incentives from Kurdish academic institutions for continued development or clinical trials will contribute to the region's overall economy. The university benefits from

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<sup>29</sup> Sindi, Heja, "Developing a 'Kurdistanian' Diaspora Intellectual Model and Policy: A Public Management Perspective" [PDF Document], <http://kurdishcongress.org/data/upimages/subfolders/Presentations/heja-sindi.pdf>

<sup>30</sup> Sindi, Heja, "Developing a 'Kurdistanian' Diaspora Intellectual Model and Policy: A Public Management Perspective" [PDF Document], <http://kurdishcongress.org/data/upimages/subfolders/Presentations/heja-sindi.pdf>

conducting clinical trials and the publication of research results, which enhance the institution's academic prestige.

The establishment of a technology transfer office in Kurdish universities will link the scientific achievement of the institution's departments with commercial industry. The department of technology within the university strives to patent scientific innovation to generate royalty and licensing revenue for the institution. The KRG may limit research grants to a particular discipline. Although KRG-sponsored research may be constrained by a specific discipline or subject matter, the revenue generated from royalties or licensing is available to the university for reinvestment. Research can be sponsored through university endowments, the Kurdish government and corporations both within and outside the region.

## 6. Needs Specific to KRG

Patent reform creates a platform for collaboration among government ministries and Kurdish academic institutions. The universities can facilitate bridging the "more than 20-year gap in the knowledge of current agricultural technology and development," while simultaneously promoting innovative methods through research. The KRG can lead efforts to forecast the region's long-term science and technology needs and can inform future innovation. This process should be rigorous and ongoing to prevent future shortfalls in research and development.

Collaborative research from the KRG and the region's universities greatly benefit Kurdish society by establishing the importance of research and education: "In recent decades, science policy has shifted its focus towards conferring measurable benefits to society."<sup>31</sup> Universities should prudently assess the advantage of scientific research.<sup>32</sup> There are significant potential advantages and complications to quantifying research benefits. Attributing specific research to benefits requires a multi-indicator, multi-method approach.<sup>33</sup> Proposed research should be evaluated based on the government or university's overall mission, instead of a monetary return on investment.<sup>34</sup> Then, technology transfer offices within each university determine the commercialization of research.

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<sup>31</sup> Cole et al., "Science the Endless Frontier."

<sup>32</sup> Ibid.

<sup>33</sup> Grant, Jonathan, (2007), "Measuring the Benefits of Research. Rand Europe," *Policy Resource* [PDF Document], [http://www.rand.org/pubs/research\\_briefs/2007/RAND\\_RB9202.pdf](http://www.rand.org/pubs/research_briefs/2007/RAND_RB9202.pdf)

<sup>34</sup> Ibid.

The KRG's effort to create uniform patent policies will encourage prominent foreign companies such as Exxon to develop technology through Kurdish universities via incentives like decreased corporate taxes. As previously stated, policy reform should include the right for the entity conducting research to retain the title to inventions discovered with government funds. The economic returns from grants provided to a university from private enterprise are allocated by the academic institution, independent from the KRG.

The KRG is addressing the region's unique post-conflict environment. Though relatively insulated from the violence that ensued during the Iraq War, the extended tyrannical rule of Saddam Hussein severely deteriorated Kurdistan's infrastructure, economy, stability and human capital. Diversification of the Kurdish economy through public investment is critical to sustained economic growth: "An essential prerequisite for economic recovery is the existence of a dynamic entrepreneurial class that can lead the development process."<sup>35</sup> University grants limited to marginalized groups and women encourage the broader diversification of research material and positive residual social responses. Kurdish historic oppression has targeted the male population, creating a gender imbalance.<sup>36</sup> Women play an integral role in the future of Kurdish economic progress.<sup>37</sup>

The collaborative relationship between the KRG and universities is based on common interests. Both entities possess the instruments required for policy implementation and share an objective of development. Policy implementation and adaptation take time. Patent policy legislation will create incentives for universities to pursue research and development opportunities Kurdistan.

## 7. Conclusion

The synergy between government and the intellectual resources resident in universities is a concept used worldwide. It has paid great dividends in countries like the U.S., where government and corporate-funded research at universities contributes greatly to the intellectual property of the private and public sectors. As the situation in Kurdistan improves, the KRG can leverage the expertise, research infrastructure and experience at its

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<sup>35</sup> RTI International, (2008), Kurdistan Region Economic Development Assessment. [http://kurdishcongress.org/data/upimages/subfolders/PDF/usaid2008\\_kurdistan\\_region\\_economic\\_development\\_assessment.pdf](http://kurdishcongress.org/data/upimages/subfolders/PDF/usaid2008_kurdistan_region_economic_development_assessment.pdf)

<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

universities to solve regional problems and foster economic development. The policies and resources that the government has at its disposal are crucial to this process, and established methods for this are already being employed in other countries. The creation of technological development departments and intellectual property laws are vital aspects of this process, and they are investments that will contribute to the long-term viability of Kurdistan's economy and infrastructure.

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## CHAPTER TWENTY-ONE

# STRATEGIC FORESIGHT FOR ECONOMIC GROWTH AND SUSTAINABLE INFRASTRUCTURE IN IRAQI KURDISTAN: A VISION FOR 2030

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### **Abstract**

This chapter covers foresight methodologies for the analysis of the long-term future of a country/region, for the derivation of possible scenarios for a country fifteen to thirty years in the future. This chapter also addresses and describes a strategic pathway, and how to build and describe future scenarios applied to the Kurdistan region in the next fifteen to thirty years, covering the strategic development and building of important areas of the economy (such as legal and political framework for economic growth, new sectors in economy, change of social values, technological advancement, market conditions, investment, R&D, and education).

**Keywords:** Foresight methodologies and scenario techniques, long-term visions for a country/region, framework for derivation of strategic country programs, research & development initiatives, infrastructure and education, long-term prioritization of potential new sectors in the economy

### **1. Introduction**

In the context of the increasing integration of different nations and countries in the global economy, as well as acceleration of economic development due to increased advancement in technology development with increasing dynamics in knowledge-based societies, foresight

programs are becoming an important tool for many countries in understanding the long-term perspectives of development and setting up long-term future visions for the prioritization of strategic objectives for the economy, research, education and infrastructure, as well as goals of the required political and social frameworks.

Foresight is not about forecasting and making predictions for the future of a country, but is rather about the ability to see what is emerging, what the major drivers for change are and how these driving forces can reshape the future (with the time frame being at least fifteen to thirty years in the future).

The foresight process can be a strong basis for a dialogue between different stakeholders, e.g. government, industry and business, academia and other players in the society, to develop shared visions for the future and set up long-term programs for development. Consequently, the results of foresight will be used as the basis for rational and responsible decision-making, as every decision is future oriented and goals should be reached to adapt to the expected future.

This chapter addresses and describes a strategic pathway, and how to apply the foresight methodology to build and describe future scenarios for the Kurdistan region in the next fifteen to thirty years, covering the development and building capabilities with the specific needs of the country/region, value creation in the new upcoming environment, as well as addressing strategically important areas of the economy (legal framework for growth, change of social values, technological advancement, market conditions, investment, and research and development with future education needs). Based on foresight analysis, implications and recommendations can be derived for long-term strategic planning with a focus on key areas and sectors in a country or a specific region.

The methodology provides a framework for the complete coverage of decision making of long-term strategic initiatives from gathering information, building scenarios and developing plans for implementation.

## **2. Foresight**

### **2.1 Objectives of foresight and scenario development**

In the era of knowledge-based economies, increasing competition of regions/countries on the basis of access to resources, global market access and innovation capabilities, the long-term orientation on the national level requires the derivation of future scenarios, and what the possible futures of

the country are based on development and projections of major influencing factors, identified as drivers or inhibitors of change.

According to Ben R. Martin, foresight is: "... the process involved in systematically attempting to look into the longer-term future of science, technology, the economy and society with the aim of identifying the areas of strategic research and the emerging generic technologies likely to yield the greatest economic and social benefits."<sup>1</sup> The process of foresight should look beyond the usual planning period, which is normally covered by strategic and operational planning and the development goals of assigned programs.

One of major characteristics of foresight analysis is the time frame, which looks to at least fifteen to thirty years ahead, so that scenarios for the future are analyzed and derived for the target timeframe. The objectives of these scenarios have to be derived and applied on different levels and dimensions, covering key national challenges expected in the future.

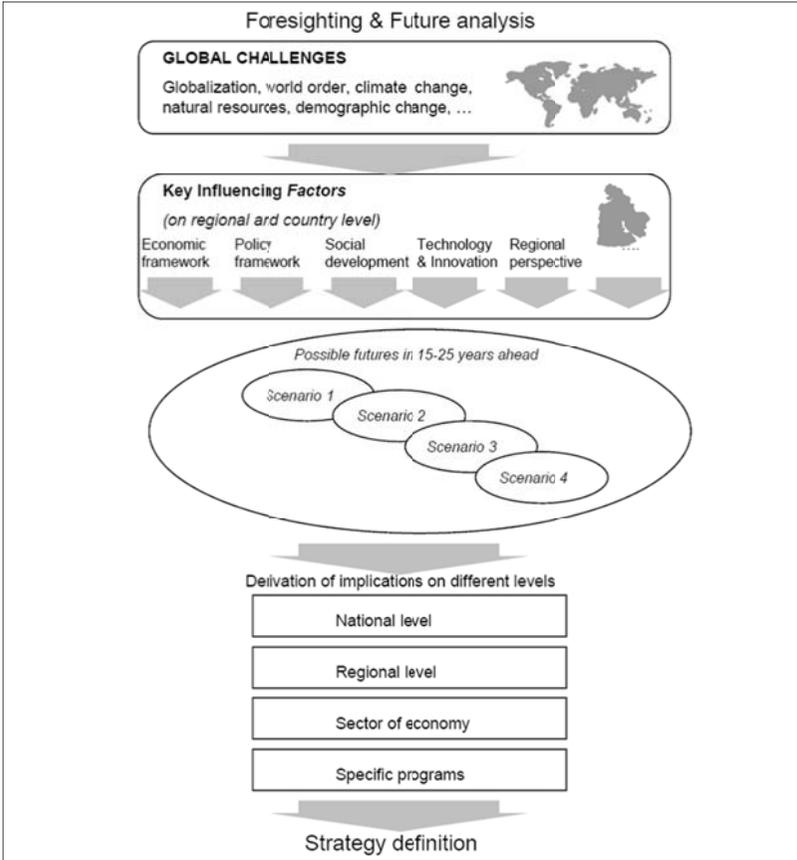
The method implies the identification of a set of major influencing factors, including political and legal frameworks, socioeconomic development, technology and innovation capabilities as well as external factors (e.g. political situations, external economic conditions, trading and cooperation etc.) and their projections in the future that will consequently shape and drive the formation of possible scenarios for a country or a specific region. Fig. 21.1 below illustrates the pathway for the derivation of long-term implications on national, regional and sector levels, generated on the basis of elaborated future scenarios. The objectives and the goals of the foresight and scenario development will consequently address different dimensions and stakeholders, e.g.:

- On the national level for defining political and legal framework for development of innovation policies and the identification of innovation areas
- On the regional level for setting up regional policies and priorities for regional development
- On the sectoral level for setting priorities in specific sectors of the economy, development or replacement of industry sectors or building completely new and promising sectors

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<sup>1</sup> Ben R. Martin, (1995), "Foresight in Science and Technology," *Technology Analyst & Strategic Management* 7 (2).

Fig. 21.1. Foresight as a basis for the derivation of future implications for the nation.



The results of foresight analysis should be used for setting up priorities, identifying key national programs for building up new capabilities in terms of knowledge-based economy, technological advancement, and infrastructural and industrial development. The practice has proved to be a powerful tool used successfully in many countries for boosting new development in the country with a solid long-term holistic view.

According to Michael Keenan, most industrialized countries have foresight activities to identify and prioritize national programs for innovation strategies, R&D spending and for other strategic orientations:

By the late 1990s, this wave of foresight activity had started to wash over other levels of government, from international bodies such as the EU and UNIDO,<sup>2</sup> down to regions, municipalities and cities. The reasons for this increase in activity are manifold, and include new regimes for the production of knowledge, the belief that governments should better target their R&D spending, and even simple policy transfer (bandwagon effects) from one territory to another.<sup>3</sup>

## **2.2 From global challenges to specific country and regional perspective**

One of the key objectives of foresight is to identify and understand drivers of change. Building future scenarios and visions requires in the first step the derivation of indicators, why changes take place and how to react to these drivers or inhibitors of change. In the case of foresight on the national or regional level, a three-step approach is recommended, as illustrated in Fig. 22.2:

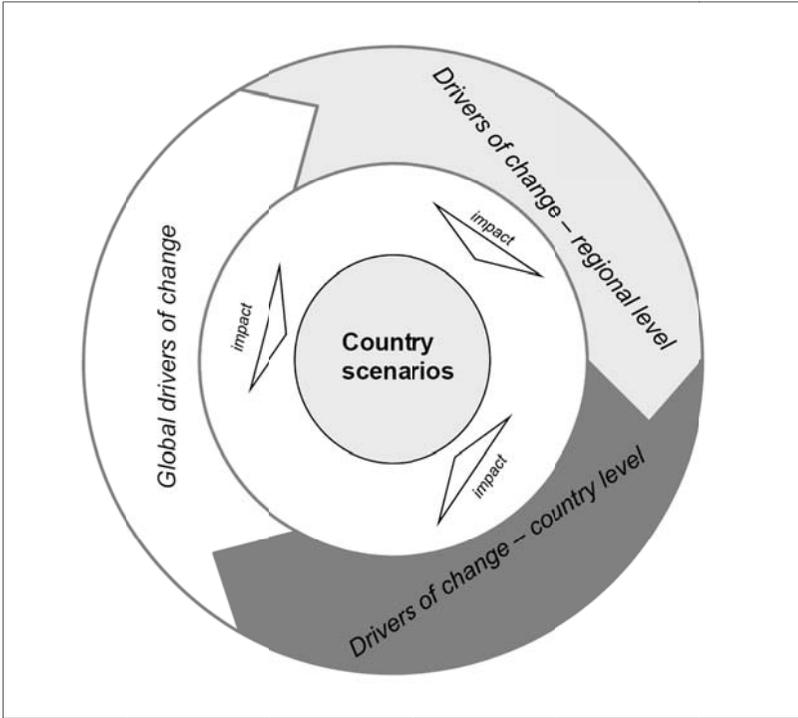
- (1) From the global perspective—analysis of major drivers and inhibitors on the global level, looking to global challenges and global trends influencing human development, in terms of economy, technology, society, and politics.
- (2) From the regional perspective—analysis of major drivers and inhibitors on the regional level, focusing on indicators with impact on specific regional development, e.g. regional policies, availability of natural resources, innovation competitiveness of the region (e.g. Europe, East Asia, Africa, Middle East ...)
- (3) From the national perspective—analysis on the country level, or on a regional level inside a country. At this step, specific country indicators of change are analyzed, e.g. country economic policy, attractiveness for innovation and technology, society development, major industry sectors etc.

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<sup>2</sup> UNIDO—Unites Nation Industry Development Organization.

<sup>3</sup> Michael Keenan, (2004), *Technology Foresight—An Introduction*, University of Manchester, UK.

Fig. 22.2 Three-step approach for country-specific foresight



Considering the global perspective, long-term indicators of change on the global level need to be derived and prioritized in order to go to the next steps in foresight exercises on the national level. Global challenges of the future, considering the next fifteen to thirty years, will have a direct impact on how the future of a specific country will be shaped, and how global drivers and inhibitors influence future scenarios of one country.

On the global level, humanity is in the midst of an accelerating transformation with changes in technology, economy, business, values and norms, social structures, as well as governmental policies. These changes affect the way of living, communicating, working and acting. Countries, industries and governments have to acknowledge that these changes also affect the development of a specific country, industry and governing.

A sampling of global drivers of change, as megatrends, are listed in this chapter as an illustration of the global perspective of change and as a basis for understanding these global indicators that will influence and shape the long-term future, independently and on the country-level

perspective. The described list of topics is taken for illustrative purpose and does not demonstrate a complete coverage of key megatrends, influencing the world's development on the global level in the next fifteen to thirty years:

- The single-polar world order will be replaced by a multi-polar system, influencing nation-state powers and policies, economic and geopolitical development.
- China will continue to position itself as a long-term economic power player globally.
- Continuing urbanization and migration will drive the further formation of megacities.
- The role of environmental concerns and emission reduction will further increase in the formation of international and national policies.
- Increasing demand for energy worldwide will put increasing pressure on natural resources and further divide different regional priorities.
- The Middle East will continue to have “security” concerns with global implications.
- Increasing population and demographic change will create financial, economic and social pressure with different intensities on nations.
- Knowledge and access to it will be the major source of capital.
- Social networking and handling information will impact and reshape the way of living, communicating, influencing and working.
- Transportation and mobility is the precondition for economic integration, growth and innovation competitiveness.
- Rapid access to technologies and know-how through open networks for innovation will open new opportunities for development and technology competitiveness.
- Technology advancement will reshape the concepts of education and healthcare.
- Nation-state power and influence will be challenged by the growing impact of “non-state” actors, empowered by the role of NGOs (non-governmental organizations), social networking, private organizations and communities.

### **3. Methodologies for Foresight and Analysis of Future Scenarios**

#### **3.1 Delphi survey**

The method includes a set of interviews and questionnaires that are organized and performed with a large panel of experts. The process implies sending questionnaires and performing interviews repeatedly with a wide group of experts, having varying opinions and estimations for future development. In the process of interaction of different views during the entire procedure, a convergence of opinions is reached, which represents the most realistic estimation of the future picture. It is often applied to identify possible technological developments in the future and to estimate the probability of occurrence and realization.

The advantages of the method include the involvement of a large number of experts to cover the long-term perspective with possible changes, as well as give the possibility of analyzing the consequences and comparing the results from different countries or regions.<sup>4</sup>

The use of the method has to be evaluated on a case to case basis, considering the final goal and the desired results of such exercise, as large-scale Delphi surveys could be expensive and time-consuming.

The method has been widely used in Europe (mostly Germany and France) and also in Asian countries (Japan, China and South Korea).

#### **3.2 Trend analysis**

Trend analysis is a powerful tool for scanning and identifying key influencing factors such as drivers or inhibitors of change, their long-term projections and impacts on future development. The method analyzes how identified drivers or inhibitors have developed over time, and how this development could be projected into the future. These projections are based on the rational analysis of the fact-based development of trends, specific patterns and reliable path development.

The extrapolation step projecting these trends is performed including some uncertainties, related to uncertainties in trend development, as future projections can be different depending on correlation, dependency of the projection on many other factors, drivers, inhibitors, stakeholder decisions, etc. However, the trend analysis is used as a basis for the development of

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<sup>4</sup> Georghiou, L., (2003), *Foresight: Concept and Practice as a Tool for Decision Making*, University of Manchester, UK, Plenary Technology Foresight.

future scenarios, which will be structured according to variations in trend extrapolations.

The method of trend analysis is normally associated with the term PEST analysis, standing for “Political, Economic, Social, and Technological” analysis, structuring the trends in these categories to identify the type of influencing factor, as well as the dynamic development in the long run. If a trend, e.g. within government policies for boosting industry development in a sector of the economy, is considered in the analysis it will be categorized as a political trend. This trend would be a strong driver for a scenario of “industrialization.” In the same way, if “connectivity” is considered, meaning access and connection to a broadband network for the majority of households, the topic is related to a technology trend, with impact on social transformation, enabling a new era of communication, social networking and knowledge share. The PEST analysis is sometimes extended to PEEST or PESTEL, also covering environmental and legal frameworks of trend development.

While these trends influence each other, impacting and changing the direction of development of each, a “cross-impact analysis” can be performed. The method is used as a tool for the evaluation of how the trends impact each other’s projections and it gives an opportunity to understand the sequence of correlated acts, identifying driving or following acts.

### 3.3 Scenario development

The method implies the development of future scenarios, based on insights and extrapolations of scenario elements, making assessments of their implications. According to one of the famous futurists in our days, Peter Schwarz:

scenarios are rich, data-driven stories about tomorrow that address important, immediate choices. Good scenarios incorporate rigorous analysis, but are also driven by insightful imagination. They are not about getting the future right, but about making better decisions today. Good scenarios stretch our thinking and provide a coherent framework that helps us make sense of the complexity around us, explore possibilities systematically, and extend the boundaries of plausibility.<sup>5</sup>

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<sup>5</sup> Peter Schwarz, (2012), “Winning in an Uncertain Future through Scenario Planning,” *Dialogue on Future Trends*.

The method is normally applied in the form of dedicated projects with diverse teams, additionally involving experts and stakeholders within specific areas of interest and expertise (e.g. future socioeconomic development, dedicated technology areas, regulatory bodies, industry, etc.) on the national and international level to make a shared picture of possible future scenarios that may occur.

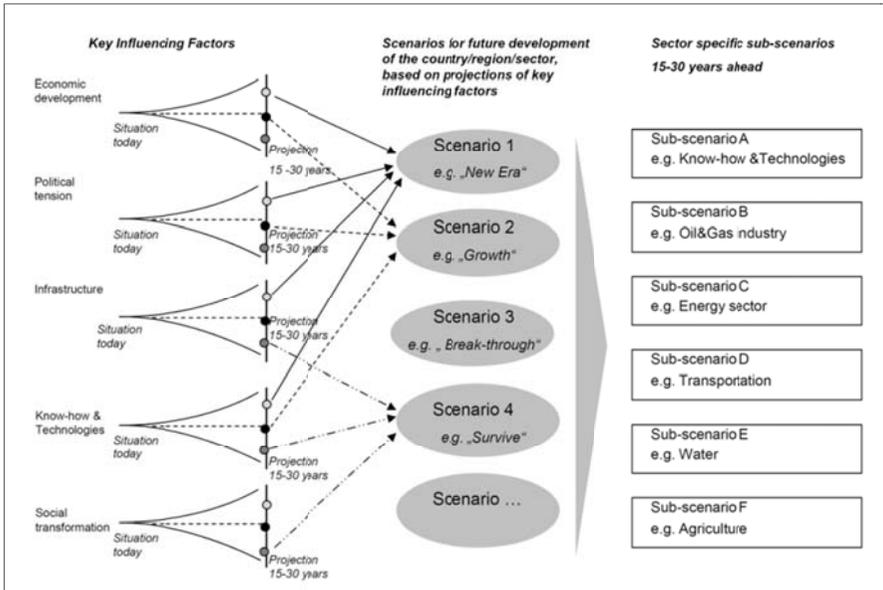
One of the key results of scenario development exercise is to view the big picture based on broad coverage and quality:

The actual scenario building process can employ several approaches. It may be deductive (e.g., crossing the most important critical uncertainties to create a 2×2 matrix) or inductive (e.g., starting with the “official future” and then imagining how and why things could unfold very differently) or some combination. But the process is not as important as the quality of the conversation and learning.

The development of a scenario entails a collaborate process, the creation of a common language and specific tools that can bring people from different backgrounds together. Firstly, major influencing factors have to be identified, structured and described in the form of trends development. (see section 3.2). Secondly, based on possible projections of these influencing factors, combinations can create and drive different directions of development, which will lead to implications with severe consequences on the future of a country or a region. For example, the factor of economic development is directly connected to the GDP development. The projection of this particular influencing factor could have a dramatic impact on future scenarios. This impact will depend on how the economic environment influences the framework of actions within the future scenario.

In the same way, a second influencing factor, the political framework, has a tremendous role in shaping possible projected futures. In particular, the political framework or political tension, as a key influencing factor for the Middle East region, especially looking to Iraq, is of great importance for the derivation of future scenarios. However, it is also very difficult to put this particular factor under projections in the future. This type of influencing factor is a good example for illustrating the existence of specific drivers within the scenario methodology that can be identified as “wild cards.” The uncertainty of “wild cards” is very high, but the implication of such an influencing factor on future scenarios could be severe.

Fig. 21.3. Major steps in building country-specific scenario



At last, scenarios are derived that should have different criteria and development paths to gain a clear diversification for each particular scenario (see Fig. 21.3. above). There are a number of influencing factors impacting the emergence of completely different scenarios, which are then created using combinations to produce coherent pictures of alternative futures:

### Economic development

- Political tension, including political framework, stability, as well as internal regulatory framework boosting economic growth of the country
- Infrastructure development of the country/region, with related development of roads, transportation, energy, cities etc.
- Know-how base & technologies, including attractiveness for knowledge building, research and innovation strategy, local know-how in specific industry areas etc.
- Social transformation, including changes in social values, culture of economic value creation, ways of living, role of technology for

communication and connectivity, internationalization, integration of social groups etc.

In this particular example, four scenarios are considered, even though the number can be higher. However, to keep the foresight analysis manageable, it is recommended to consider up to four. They are:

- “New era”—this scenario is a reflection of the most positive development, creating best preconditions for a huge boost into the future which define a complete transformation of the entire nation.
- “Growth”—this scenario describes a future that is based on a stable economic and social growth, having good preconditions for sustainable traditional economic growth of the country/region.
- “Breakthrough”—despite tensions in the political framework, uncertainty in economic development, and tensions in society, the nation has to make efforts to manage the challenges and make a breakthrough.
- “Survival”—the most negative development, reflecting the most difficult conditions of development, with the goal being to cope with this expected future and build a strategy for “surviving” in these conditions.

The next step of scenario building would be the description of sector-specific scenarios or scenario elements, addressing in each “national level” scenario strategically important sectors in the economy, and how these sectors could be shaped or reshaped for the future, as shown in Fig. 7.3. Examples of these sectors are: energy, oil & gas industry, transportation, agriculture, knowledge economy, innovation & technology framework with a focus on education base, etc.

### **3.4 Technology roadmap**

In foresight cases, where the goal is to identify objectives of industrial development with the focus on technology development and prioritization of options on how to achieve these objectives, the method of technology road mapping is applied. The methodology provides a way to identify, evaluate and prioritize strategic options that can be used for implementation. It has proved to be a powerful means for needs-driven technology planning process and a strong basis for establishing technology cooperation, partnership and positioning a specific region or a country on a new competitiveness level.

A key advantage of technology roadmaps is that they are driven by future markets or requirements and thus can achieve a clear sense of purpose and ownership, as well as indicating infrastructure and human resource needs.<sup>6</sup> The methodology is recommended when the innovation and R&D (research and development) strategy on the national level has to be developed. In this case, priorities are set, and strategic long-term programs for know-how and technology build-up are identified.

## 4. Foresight: Experiences from Other Countries

Foresight analysis has been used and applied by many industrial countries in recent years, becoming a strategic tool by end of 1990s. These studies started to gain more importance from the fact that technological development was gaining greater recognition as a key factor in the economic performance of a country. The goal of foresight studies has been to identify these emerging technologies to target national resources to better improve economic competitiveness.

In this chapter, some experiences from other countries are explained and shared. Different methodologies in these studies are applied, based on historical and country-profile circumstances, as well as the goals of these studies.

### 4.1 Europe

In Germany, a dedicated foresight process has been established by the German Ministry for Education and Research (BMBF) to ensure Germany's status as a strategic research and education location. According to BMBF, this foresight process addresses six dimensions in combination and with different methods.

The dimensions are: informing policy, facilitating policy implementation, embedding participation, supporting policy definition, reconfiguring policy structures and the symbolic function.<sup>7</sup>

According to BMBF, their foresight process aimed at:

- (1) Identification of new focuses in research and technology

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<sup>6</sup> G. Tegart, (2003), "Technology Foresight: Philosophy & Principles," *Innovation: Management, Policy & Practice* 5 (2–3).

<sup>7</sup> Kerstin Cuhls, Amina Beyer-Kutzner, Walter Ganz & Philine Warnke, (2009), "The methodology combination of a national foresight process in Germany," *Technological Forecasting & Social Change* 76.

- (2) Designation of areas for cross-cutting activities
- (3) Exploration of fields for strategic partnerships
- (4) Derivation of priority activity lines for R&D policy.

The process includes a combination and a mix of different methodologies, applied and integrated with expert panels and use of Delphi surveys.

The methodologies include desk research and data basis, surveys for expert opinions, policy analysis. The foresight process in Germany has a strong focus on innovation capabilities and technology competitiveness of the country.

Another example from Europe, from a country of a smaller size, is the case of the Netherlands in which the foresight process is based on scenario building and SWOT (strength-weaknesses-opportunities-threats) analysis of the country, compared with other nations.

By building up the foresight process, the Ministry of Economic Affairs of the Netherlands defined three objectives for foresight studies<sup>8</sup>

- (1) To generate information for strategic technology policy.
- (2) To provide SMEs (small and medium size enterprises) with advance information about the possibilities for the application of new technologies.
- (3) To stimulate the creation of networks between actors in industry, research, and the educational system, who are involved in a defined technology area.

The process is based on scenario development, describing possible key technology areas. Furthermore, by the selection of prioritized technology areas within these scenarios, a dedicated SWOT analysis has to be performed in order to identify and prioritize strategic areas for actions on national level. Smaller countries of Europe (including the Netherlands) need to create their own models of foresight, slightly different from larger countries. Sweden, for example, also faces the challenge of being small, compared with many other larger trading countries: "Countries and regions with small populations and an open economy are always heavily dependent on foreign trade. This gives them strength, flexibility and a

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<sup>8</sup> Jeske Reijds, (1994), "Foresight studies undertaken by the Ministry of Economic Affairs in the Netherlands," *R&D Management* 24 (2).

major opportunity to identify new markets and achieve good economic growth, but it also creates vulnerability.”<sup>9</sup>

The objective of technological foresight in Sweden has been the strengthening of a future-oriented approach in companies and organizations to identify and prioritize areas of expertise with potential for growth and renewal in Sweden. The main method used is expert panels, covering the future of different sectors of economy, with a strong focus on technological foresight.

In some other countries in Europe, e.g. Eastern Europe in the period of rebuilding and restructuring, the focus of foresight has been on transition.

The need for foresight and future analysis for these countries in transition is of great importance, as the dynamics of change will be on a completely different level of intensity, compared to countries in a more stable phase of development. Hungary is one example where foresight analysis at the beginning of this century was a great tool for identifying future priorities for the country in the phase of transition.

Foresight activities include the combination of Delphi surveys, scenarios and expert panels, aimed improving the quality of life and enhancing the long-term international competitiveness of the country:

... It was also decided that—following the methods of the first British technology foresight program—panels should be set up to develop scenarios as well as policy recommendations, and a two-round, large-scale Delphi survey should also be conducted.<sup>10</sup>

According to the program, detailed goals and specific target areas are:

- (1) To contribute to a national innovation strategy based on a comprehensive analysis of:
  - Technological development
  - World market opportunities (new markets and market niches)
  - Strengths and weaknesses of the Hungarian economy and R&D system
- (2) Help Hungarian firms improve their competitiveness by providing the results of the above analysis.

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<sup>9</sup> Lennart Björn & Lennart Lübeck, (2003), “Swedish Technology Foresight—a Successful Project, with Many Lessons Learned ,” The Second International Conference on Technology Foresight.

<sup>10</sup> Attila Havas, (2003), “Evolving Foresight in a Small Transition Economy,” *Journal of Forecasting* 22.

- (3) Strengthen the formal and informal relationships among researchers, business people and civil servants.
- (4) Spread cooperative and strategic thinking.
- (5) Support integration into the European Union.
- (6) Formulate recommendations for public policies.

## 4.2 Asia

In the case of Asia, Japan has been a pioneer in the development of national foresight initiatives, especially in the areas of technological foresight, using the Delphi method since 1970 to analyze and shape technology trajectories. The early experience of Japan has influenced Europe in setting up similar programs and initiatives. In the same way, Japan has also inspired the initiation of such programs in other Asian countries, particularly South Korea and China. Furthermore, Japan has been the most active in the field of foresight, initiating repeated studies every five years. The major methodology used for these studies is the Delphi method with a large number of expert interviews.

The long experience of using the Delphi methodology in Japan and analyzing the future on a periodical basis has clear advantages in applying foresight in a more strategic way by setting long-term innovation and technology targets of development. The collected information is comparable across periods since the framework of survey is based on the framework used last time. Furthermore, it is possible to read from the results the direction of technological development and the agenda for promotion of research and development.

The benefits of the approach, analyzing the case of Japan and the impact of foresight on policy making, are summarized and described in the work of Tatsuro Yoda, consisting of the following major topics:<sup>11</sup>

- The significance of the Delphi surveys is not on whether the predictions on the realization of technological development are correct or not, but rather on the contribution to the promotion of technological development by showing the future direction of research and development.
- They provide a mechanism to ensure that researchers in all sectors, along with policy makers in government and industry, are

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<sup>11</sup> Tatsuro Yoda, (2011), "Perceptions of Domain Experts on Impact of Foresight on Policy Making: The Case of Japan," *Technological Forecasting & Social Change* 78.

periodically forced to think systematically about the longer-term future.

- By comprehensively surveying the intentions and visions (and thus indirectly the current strategic R&D activity) of the industrial research community, it provides a useful mechanism for synthesizing major research trends across science-based sectors.
- The forecasts provide a useful mechanism for helping the government to establish national priorities in allocating resources.

Taking a look at other countries in Asia, experiences from the largest and most dynamic economy in the world are inevitable. China, with strong economic and industrial development in the modern time, has, during the last decade, started to actively initiate and establish foresight programs on the national level. Technology foresight is a significant component of the national innovation strategy of China. It is a base for drawing up national strategies for science and technological development.

The purpose of running national foresight programs is to “clarify major technologies for China’s socioeconomic development for adoption in the national guidelines for medium- and long-term plans for science and technology development and the 11<sup>th</sup> five-year plan.”<sup>12</sup>

Surveys have been performed in different fields to cover eleven major areas found in the national guidelines for medium- and long-term plans for science and technology development. The areas are: energy, water and mineral sources, environment, agriculture, manufacturing, industries, transportation, information services, population and health, urbanization, public safety, and national defence.

The main targets of the program are:

- (1) Self-assessment of China’s technology level and outlook for the next ten to fifteen years.
- (2) Degree of importance for prioritization of strategic fields for strategic planning.
- (3) Analysis of economic effects, addressing the impact of the technology development on economic development, socioeconomic aspects, industries and international competitiveness.

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<sup>12</sup> Weidong Guo, (2008), “Technology Foresight and Innovation Capacity Comparison in China, CCDC2008,” Chinese Control and Decision Conference.

### 4.3 The Middle East/Developing countries

Increasing dynamics of innovation and technology development, driven mainly by industrialized countries, as well as a growing role of emerging economies globally, force many “developing countries,” including in the Middle East, to set up their own long-term objectives and programs to address the gap of economic and technological development that exists between these countries and the industrialized world. At the same time, the exclusion from the emerging knowledge society threatens to widen the gap still further in these countries. This places a central importance upon the roles of science and technology and their relation to innovation.

Developing countries look for a model for building up a pathway to transform the country into more dynamic economies, enable to cope with future challenges related to competitiveness of the country. The aspect of international cooperation becomes a critical factor for these countries, both because of the high dependency upon the strategies of the developed countries, as well as the role and impact of experiences from the developed world on economic, technological, social and cultural transformations.

In the case of the Middle East, the geopolitical factor has been the dominant factor in the last twenty to thirty years and long-term progress has not been initiated or impacted by any kind of national initiatives in the area of economics, technology and social foresight. Uncertainties are still playing a key role in developing future scenarios. Indeed, analysis of political uncertainties and impact on geopolitical development in the region is excluded from this chapter.

One promising example of foresight initiatives for the Middle East region, with a focus on sustainable development of a country, could be Turkey, which is geographically not a part of Middle East, but a close neighbouring country with great economic power, projected with a high potential for the future.

As one of the Candidate Countries for the EU, Turkey carried out a national-level foresight exercise 2006, titled “Vision 2023 Turkish National Technology Foresight Program.” Along with the Technology Foresight Program, Vision 2023 involved three more sub-projects (called “R&D Manpower,” “Technological Capabilities Inventory” and “National R&D Infrastructure”), which aimed at collecting data on the current science, technology and innovation capacity of the country.<sup>13</sup>

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<sup>13</sup> Ozcan Saritas, Erol Taymaz & Turgut Tumer, (2007), “Vision 2023: Turkey's National Technology Foresight Program—a Contextualist Analysis and Discussion,” *Technological Forecasting & Social Change* 74.

The main focus of the program and its targets were:

- (1) The first-ever national Foresight Program of Turkey. The Program focused mainly on determining the priority areas of technology.
- (2) Preparation of a science and technology strategy document for a twenty-year period.
- (3) Determination of strategic technologies and priority areas of R&D.
- (4) Formulation of innovation policies of Turkey for the next twenty years.
- (5) To get a wide spectrum of stakeholders involved in the process, thus gaining their support.
- (6) Creation of public awareness on the importance of science and technology for socioeconomic development.

The methodology designed for the foresight program involved:

- Expert panels, a two-round Delphi survey to be executed by the project office in co-ordination with the panels, and a prioritization scheme.
- Expert panels to build their own visions and set socioeconomic targets.
- Consultation with the society to share the developed visions and targets.
- Derivation of underpinning technologies and their prioritization.
- The Delphi process, which represented the technology supply side, aimed at addressing the likelihood of achieving technological developments as well as testing them against a set of criteria to assess the comparative degree of contribution of technologies to Turkey.

As a result of the program, nine technology and policy-relevant sectors were prioritized, which underpinned the competitiveness and economic development in the country, including:

- (1) Information and Communication
- (2) Energy and Natural Resources
- (3) Health and Pharmaceuticals
- (4) Defence, Aeronautics and Space Industries
- (5) Agriculture and Food
- (6) Manufacturing and Materials
- (7) Transportation and Tourism

- (8) Chemicals and Textiles
- (9) Construction and Infrastructure.

Besides nine economic sectors, two cross-cutting areas were addressed, including Education and Human Resources Environment and Sustainable Development

Experiences from other countries show different regions' and countries' applications of various methodologies depending on the objectives of foresight programs, as well as the specific conditions, under which the analysis has to be performed. The most popular methodology that has been used is expert panels with the goal to develop scenarios, which are used as a basis for innovation, research and technology strategy planning. The Delphi survey has also been widely applied, especially in Asian countries, but also in Europe, combined and linked with expert panels in combination with workshops for scenario development.

In general, it is observed that foresight initiatives have been gaining considerable importance in the last twenty years, indicating the increased dynamics in the field of innovation and technology and their impact on economic development and country competitiveness, as well as increasing international integration of regions, economies and economic sectors.

## **5. Foresight for Sustainable Growth in the Kurdistan Region**

### **5.1 Objectives and methodology**

The Kurdistan federal region as part of Iraq was phased in over the last fifty years during a long period of instability, wars, and political and ethnic pressure. The current opportunity related to the stable economic growth of the federal region offers a great chance to form and establish a dedicated foresight program for the next twenty to thirty years, aimed at identifying the major drivers of change and describing future scenarios for the economic prosperity of the region, based on targeted policies for innovation, science, and the development of economy sectors. The objectives of such foresight initiative have to be:

- Development of future visions, targeting sustainable growth, boosting economic and social development.
- Minimization of the gap in the economic and technology development.

- Priorities for science and technology strategies in the region, based on the long-term view on existing and new sectors in the economy.
- Priorities for science and education programs, based on a specific target profile of the federal region of Kurdistan.
- Prerequisites for creating and developing a knowledge-based society.
- A wide basis for the formulation of innovation policies for the next fifteen to thirty years.
- Awareness on the importance of technological, social and cultural transformation to shape the desired future and remove related barriers.

The foresight program has to be applied as a shared platform between major stakeholders, including government, science & technology, education, private sector and selected international partners. The available foresight methods and tools have to be applied, taking into account experiences from other countries. An overview of the proposed combination of methodologies is shown in Fig. 21.4. below, including:

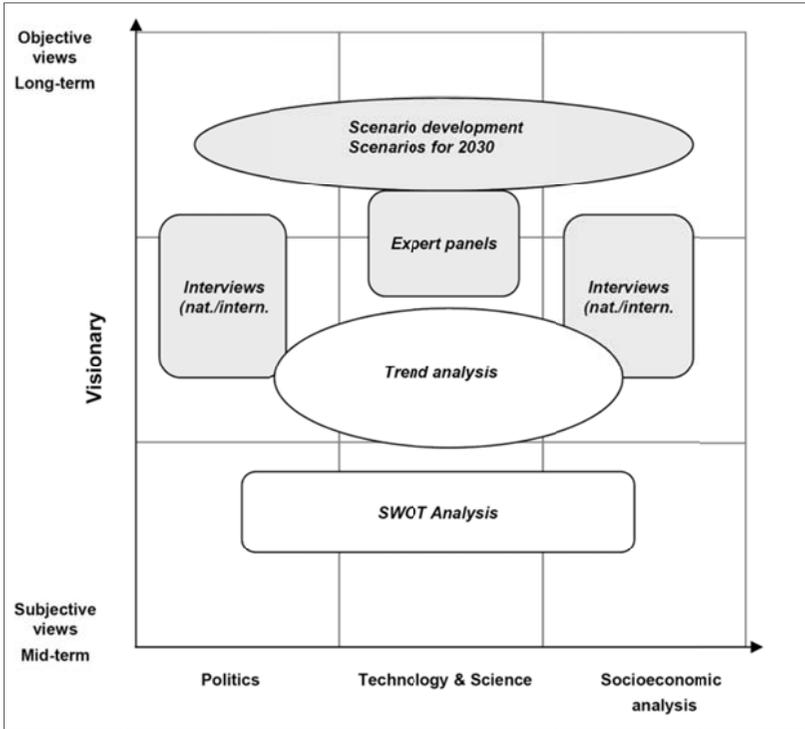
- (1) Interviews at national and international levels with major stakeholders.
- (2) Expert panels, including key experts in innovation and technologies, evaluation of specific potential for the federal region, e.g. new technologies for energy and water management, information technology, oil & gas.
- (3) Trend analysis in order to identify and prioritize major drivers of change on global, regional and national levels.
- (4) Scenario development with description of long-term scenarios for 2030.
- (5) SWOT analysis based on future scenarios, identifying and selecting strategic areas, e.g. economy sectors, society programs, science and education.

### **Scenario development for the Iraqi Kurdistan region**

The implementation of a foresight program requires adequate planning in terms of setting targets of the program, identifying major stakeholders, involving decision makers and preparing detailed planning for realization. An exercise of scenario development will be shown below to provide an overview over the proposed approach and explain the required steps in such a program. However, it is essential to consider a specific real case,

which requires real data analysis and target setting, in order to provide more specific recommendations and a detailed description for implementation. Such analysis of a specific real case is not a part of the current chapter.

Fig. 21.4. Proposed methodologies applied to foresight programs in the Kurdistan region



For the development of country scenarios, related required steps are described and explained in previous chapter. The approach contains following steps:

- (1) Identification of key influencing factors as drivers of change

A set of influencing factors/major drivers of change have to be identified, prioritized and evaluated. A possible set of these drivers or inhibitors could be:

- Political tension/stability
- Economic growth
- Social transformation
- Know-how & Technologies
- Infrastructure
- Economic freedom
- Knowledge society
- Oil & Gas Technologies
- Technologies for Water & Energy management
- Transportation
- International integration & Globalization

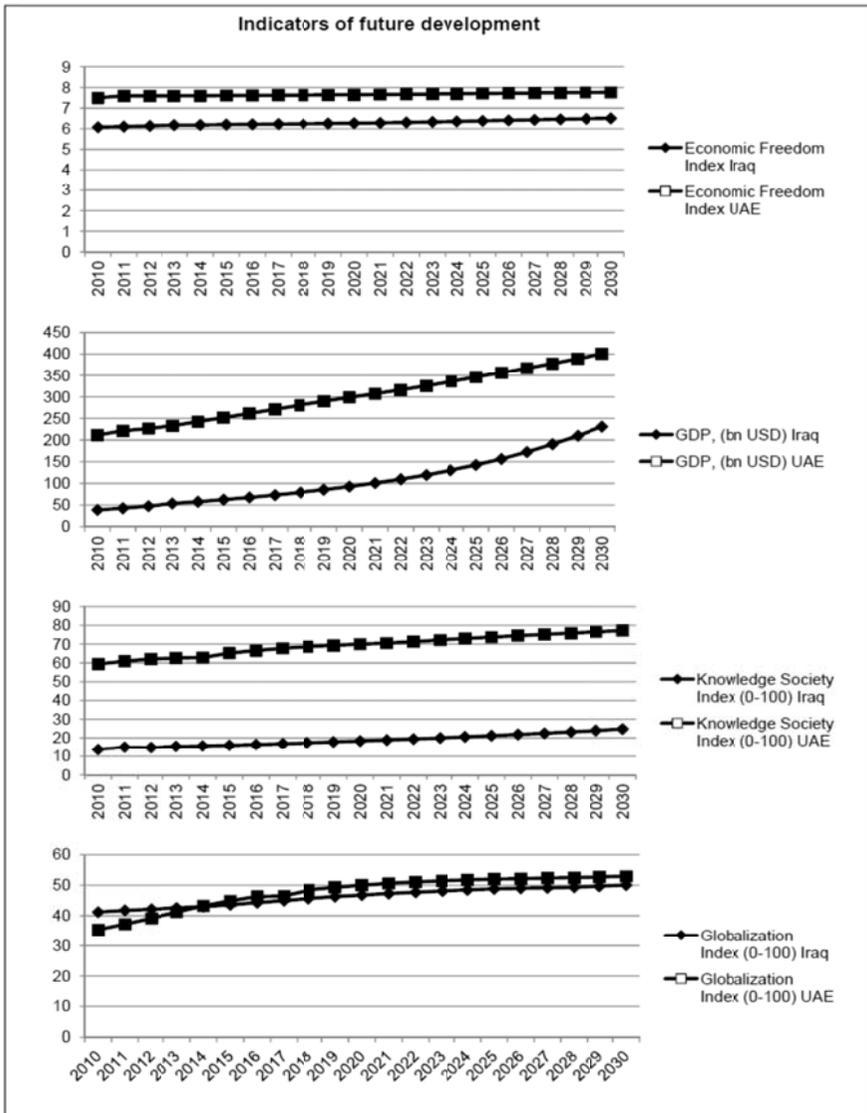
### (2) Future projections of key influencing factors

Evaluation of future development and projections of key influencing factors, including qualitative and quantitative assessments, have to be based on data analysis, desk research activities, expert panels and interviews with experts and major stakeholders. Fig. 21.5 below shows projections of some of key factors, based on data modelling and analysis, taken from the “International futures model” tool from the Atlantic council. The data of each key factor is taken from historical regression in recent years, combined with the expected most-likely development and projection until the year 2030. The comparison of four factors are considered: economic freedom, GDP development (economic growth), globalization (international integration), and the knowledge society. To compare the available projections for Iraq, same key factors and their projections are taken and illustrated for the UAE (United Arab Emirates).

### (3) Derivation of scenarios

The process of scenario derivation is a creative process, involving formal methods for the combination of influencing factors and scenario building, as well as interviews and expert panels. The output is usually a set of different scenarios for analysis. An example of the output could be a matrix of four scenarios that are driven by prioritized influencing factors (drivers or inhibitors of change). For illustration purposes, four scenarios are derived in the current exercise:

Fig. 21.5 Projections of key influencing factors, based on data modelling



- (a) New Era
- (b) Traditional growth
- (c) Breakthrough
- (d) Survive

For a description of the four scenarios, see section 3.3.

Two major driving forces, which influence and drive the creation of these different scenarios, are (represented as two axis of the scenario matrix):

- (i) Political tension and stability—taking into account internal and external political tensions, security issues, as well as long-term political stability over fifteen to thirty years.
- (ii) Combination of two key factors, namely social transformation and know-how & technologies—these two factors are closely linked , as social transformation is enabled by creating a know-how base with a related technology platform.

The developed matrix (see Fig. 21.6 below) shows future options that are likely to occur, depending on the combination of prioritized key factors. Within the scenario matrix, “wild cards” also have to be considered. “Wild cards” are key factors that could have tremendous impact on future development, while at the same time they are very difficult to project into the future. A clear example of a “wild card” is, for example, a local or regional war with a catastrophic long-term impact on a country or region.

#### (4) Sector-specific analysis and SWOT analysis

The main scenarios on the country or regional level are as basis for:

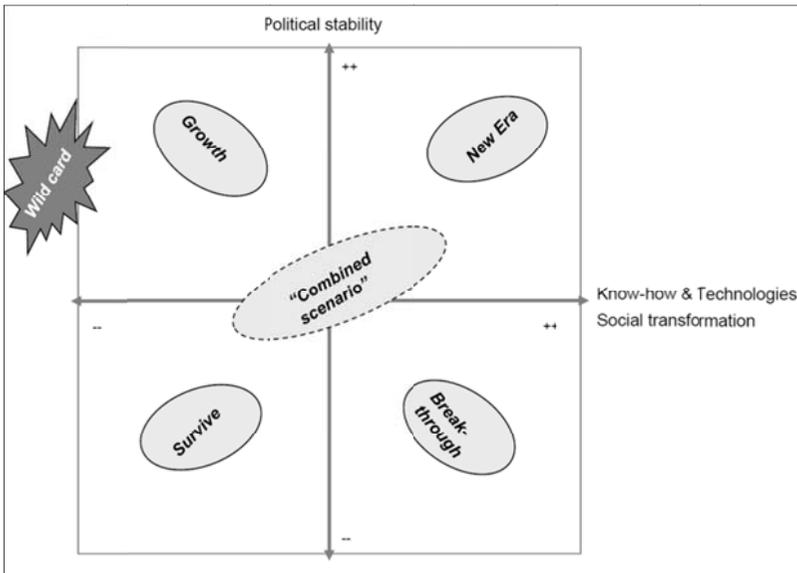
- The derivation of sector specific scenarios (e.g. energy sector, water and transportation sectors)
- The performing of a SWOT analysis for identification and prioritization of strategic implications for the Kurdistan region.

For an illustration of sector-specific scenarios, four critical sectors are selected for further consideration. The selected sectors, namely energy, water, transportation and industry, are considered to be critical infrastructure prerequisites for the long-term orientation and sustainable growth in the country.

## Energy

The Energy sector in general is one of the most critical sectors in national economies for enabling and securing demand for power and sustainable growth in infrastructure and industry in the long term. According to the IEA,<sup>14</sup> the overall power generation in Iraq for 2012 is 64,52 TWh, for a population around thirty-one million. Compared to a country like the UAE, with a population of over five million, the overall power generation for the same year is 109,34 TWh.

Fig. 21.6. Example of scenario matrix, based on the development of key influencing factors



The projections for 2030 show the major challenges for a country like Iraq, and how to address an almost triple growth of required power generation—around 154 TWh until 2030—without consideration of any additional strategic growth potential areas in the country. The same projection for the UAE 2030 is 193 TWh.

The second challenge for a sustainable energy sector is dependency on a single source of primary energy. According to the IEA, the main source for power generation in Iraq has been oil, accounting for more than 90% of

<sup>14</sup> International Energy Agency

the total. With an increased need for alternatives, as well as increased regulatory pressure on environmental concerns and a reduction of carbon emissions on the global level, a specific energy scenario has to be developed, especially considering the need in the Kurdistan region within Iraq.

Some examples of scenario areas for energy are:

- The role of fossil energy sources, e.g. the oil & gas sector and its role in the energy mix of Iraq in general and the Kurdistan region in particular.
- The future of central energy plants—the projection of demand, type of demand and shift in consumption, new transmission and distribution concepts.
- The role of decentralized energy in the total energy mix, especially small-scale local generation, based on new technologies, e.g. the potential of solar technologies, combined emission-free energy solutions for local generation, including the future of combined heat power and cooling.
- The future of IT-based energy management and the role of smart grids.
- The future of energy infrastructure.

## Water

In most countries in the Middle East, distribution and access to water is not equal, due to their topography and geography. In Iraq, consecutive years of drought, war and the lack of adequate governance has hindered overall development in the water sector, and the country is simply unable to provide the required water to its population.<sup>15</sup> At the same time, projecting the future of water supply in the region, and the impact of environmental change, requires a long-term strategic analysis, and methods to develop the long-term integrated water supply concepts in these countries.

Considering environmental changes, experts predict that the summer temperatures will rise by 2.5–3.7° Celsius and the winter temperatures will rise by 2.0–3.1° Celsius, over the next fifty to seventy years, resulting in the faster evaporation of surface water in the Middle East. As a result, patterns of rainfall will change: “Desertification is expected to affect

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<sup>15</sup> Strategic Foresight Group, (2011), *The Blue Peace—Rethinking Middle East Water*.

Syria, Turkey, Iraq and Jordan ... Iraq faces the threat of desertification at an average rate of 0.5% per year. Dust storms have worsened over the last few years due to the drought and decrease in vegetation.”

A long-term integrated water supply scenario should be developed specifically for the Kurdistan region within the foresight program, in order to prioritize and prepare the required strategic long-term initiatives.

## **Transportation**

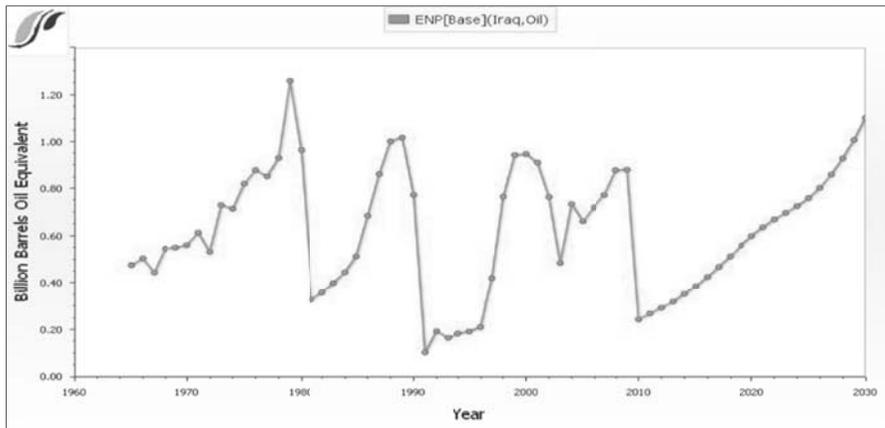
The extreme need for new transportation concepts are required to cover the need of economic growth, development of infrastructure and the interconnection of centres for the optimal movement of goods, people and services. Considering the illustrated scenarios on the country level, the future-oriented scenario for intelligent transportation systems needs to be described, including:

- Intelligent traffic management, automated monitoring and supervision
- Integration of transportation with security and communication
- Transportation flow management (internal in cities and externally between cities)
- International transportation
- Intelligent logistics
- New public transportation solutions to address increased urbanization, increased emissions and increased movement of people.

## **Industry**

Considering industrial development, the economy of Iraq is widely based on oil. Even by 2030 it will be mainly dependent on oil, as is shown in oil production projections until 2030 in Fig. 21.7.

Fig. 21.7 Projection of oil production in Iraq until 2030



Source: Atlantic council “International Futures model”

A specific sector scenario for industry has to be developed within the foresight program to analyze and prioritize:

- Future alternatives and additional industries in order to minimize long-term vulnerability
- The development of new sectors in the economy as new sources of income and wealth
- The policy, economic and technology framework for building new and promising sectors
- The first proposed alternative sectors to be considered, such as local light manufacturing industries, the knowledge economy, water management, agriculture etc.

## 6. Summary and Conclusions

For a solid basis in the long-term future orientation of the federal region of Kurdistan in particular, and Iraq in general, dedicated country foresight programs are a key prerequisite for finding the path to minimizing the gap in development and to give a strong push for acceleration of that process with clear long-term orientation for the next fifteen to thirty years. It gives the opportunity to identify and understand major driving forces shaping the future. In this context, the country will be in the position of having the power and mechanisms to build-up or reshape this described future. It

gives a basis for identifying strategic initiatives and programs with very dedicated targets.

However, considering experiences from other countries and the unique situation of the Kurdistan region, clear targets are to be set at first, and then adequate methodologies for implementation should be decided. The size of the country and the level of economic and social development play a decisive role in setting the objectives of the foresight.

In the case of scenario development and expert panels, which is recommended for the Kurdistan region in Iraq, the focus has to be on the broader socioeconomic framework and related problems, rather than on narrow technological aspects. Based on a broader scenario description, targeted sectors of economy have to be analyzed and considered in the next step in order to derive the prerequisites for the Kurdistan region to achieve the desired future for these sectors.

As it is shown in the illustrated cases as examples in the current chapter, the proposed foresight approach gives major stakeholders, policy makers, strategic business decision makers and academic institutions the basis for prioritization and planning of key strategic areas, proper investment planning in infrastructure development, as well as identification of required know-how and technologies to be realized.

One of the key advantages of foresight programs is that a holistic view on future country development is achieved, considering a wide range of perspectives as well as interaction and correlation of these different perspectives, for example the role of economic development on infrastructure, the role of the knowledge base economy on social transformation, and the role of technologies in building new economy sectors. Implementation of such foresight programs in reality requires proper planning, organization and resource allocation, including organization of interviews, expert panels, scenario workshops and the involvement of national/international stakeholders and decision-makers.

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## CHAPTER TWENTY-TWO

# APPLICATION OF PUBLIC-PRIVATE PARTNERSHIPS (PPP) TO DEVELOP INFRASTRUCTURES IN KURDISTAN

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### **Abstract**

The development of infrastructures has fundamental roles in the economic and social growth of developing countries. This results in the increasing demand for implementing infrastructure projects that are generally capital intensive; considering this fact and the budget limitations of governments, it could be useful to engage the private sector in such projects to leverage huge amounts of required funds, in addition to the utilization of technical and managerial capacity, creativity and innovation of the private sector. For this purpose, the Public-Private Partnership (PPP) as a contractual structure and efficient model to regulate such collaborations, and has become a popular way to help governments in various projects. In different forms of PPP, the private sector, in coordination with public agencies, may contribute to projects and deliver services and goods ranging from financing, designing to building and operating projects. In practice, besides many advantages, applying PPPs encounter challenges and risks and the successful deployment of these models depends on accurately identifying and managing them. In this chapter we first present an overview of different categories of PPPs and analyze their

characteristics. Furthermore, considering the current situation of Kurdistan, we discuss the requirements that affect applying these models for the case of education projects, and finally offer some suggestions for this purpose.

**Key words:** Infrastructure, Public-Private Partnership, Financing, Kurdistan

## 1. Introduction

The Public-Private Partnership (PPP) is a contractual structure and efficient model to regulate public and private collaboration, and has become a popular way to help governments in various projects, such as energy, transportation, communication, municipality, social and health. In different forms of PPP, the private sector, in coordination with the public agency, makes contributes to projects and in delivering services/goods ranging from financing, designing to building and operating projects. PPP projects are long term, complex and generally very challenging contractual arrangements and relationships. They bring new roles for both the public and private sectors in terms of construction and delivering public facilities and services in many countries. However, even with this wide adoption, the term “PPP” is still not clearly defined. Several PPP definitions have been used by different scholars, governments and international organizations (as summarized below):

- The term public-private partnership has taken on a very broad meaning. The key elements, however, are the existence of a partnership style approach to the provision of infrastructure, as opposed to an arm’s length supplier relationship. Either each party takes responsibilities for an element of the total enterprise and they work together, or both parties take joint responsibility for each element. A PPP involves a sharing of risk, responsibility and reward, and it is undertaken in those circumstances when there is a value-for-money benefit to the taxpayers (World Bank 2003).
- A partnership is an arrangement between two or more parties who have agreed to work cooperatively toward shared and/or compatible objectives and in which there is shared authority and responsibility, joint investment of resources, shared liability or risk-taking and ideally mutual benefits (European Commission 2003).

Although many more definitions could be found, the above definitions are clear enough to identify critical elements of a PPP. Overall, a PPP can be defined as a cooperative arrangement, a long-term contract, between public and private sectors that involves the sharing of resources, risks, responsibilities and rewards with others for the achievement of joint objectives (e.g. providing infrastructure services).

## 2. Benefits and obstacles of PPPs

A partnership approach under PPP is an effective way to deliver public services to improve quality of life. Several reasons have fostered PPP growth, but one of the most important is the rapid growth of public service demand that has overcome the financial capacity of public sector (Smith 2009). The worldwide experience has shown that the PPP, if properly formulated, can provide a variety of benefits to the government. Several important benefits are:

- A PPP can increase the “Value for Money” spent for infrastructure services by providing more-efficient, lower-cost and reliable services.
- A PPP helps keep public sector budgets and specially budget deficiencies down.
- A PPP allows the public sector to avoid up-front capital costs and reduce public sector administration costs.
- The project lifecycle costs and project delivery time can be reduced by using a PPP.
- A PPP can improve the quality and efficiency of infrastructure services.
- A PPP facilitates innovation in infrastructure development.
- The public sector can transfer risks related to construction, finance and operation of projects to the private sector.
- A PPP can promote local economic growth and employment opportunities.
- Public-Sector Reform—a PPP could be a catalyst for wider public reform in different ways:
  - a. Transparency and accountability
  - b. Procurement skills
  - c. Competitiveness

d. Management—PPP allows the public authority to act as a regulator and thus concentrate on service planning and performance monitoring

Despite their broad benefits and increasing usage in infrastructure development, PPPs have been criticized for several aspects, which include:

- PPPs are relatively new concepts that are not well understood in some countries.
- Both public and private sectors still lack appropriate knowledge and skills to implement such long-term projects.
- PPP projects are highly likely to be delayed by political debates, public opposition, and complex negotiation processes.
- PPP projects may cost more since the private sector cannot borrow capital to finance projects as cheaply as the public sector.
- Project accountability may be reduced in PPPs because a great deal of information can now be treated as commercial-in-confidence.
- PPPs can result in a monopoly situation and higher costs to public users for using the infrastructure services.

### **3. PPP contract types**

“Public Private Partnerships” include a range of agreements, called by different names, and have been used for a wide range of infrastructure assets and services. This section describes in detail the PPP contract types and the different nomenclature used to describe those contract types.

In this chapter, PPPs are described in terms of three main parameters: Whether the PPP is for a new or existing asset, what functions the private sector is responsible for, and how the private party is paid.

These characteristics can be combined in various ways to create a wide range of PPP contracts. These contracts can be thought of as a continuum between public and private provision of infrastructure, transferring increasing responsibilities and risks to the private sector. PPPs are not the only way the private sector can be involved in infrastructure; there are many arrangements that would not usually be considered as PPP.

However, there is no consistent, international standard for defining PPPs and describing these different types of contract. Some governments define “PPP” in their PPP framework to mean a specific range of contract types. These definitions may include contract types with some of or all the range of features described above.

In this section we describe the different types of PPPs with details summarized in following:

- Service Contract
- Management Contracts
- Affermage or Lease Contracts
- Concession
- Build–Operate–Transfer (B–O–T) and Similar Arrangements (see Table 22.1)
- Joint Venture
- Hybrid Arrangements

**Table 22.1 Variations of BOT-type contracts**

	Own	Conceive	Design	Build	Operation & Maintenance	Financial Responsibility
Design–Bid–Build	Public	Public	Private by fee contract		Public	Public
Design–Build	Public	Public	Private by fee contract		Public	Public
Build–Operate–Transfer (BOT)	Public	Public	Private by fee contract			Public
Design–Build–Finance–Operate (DBFO)	Public	Public or Private	Private by fee contract			Public, Public/Private, or Private
Build–Own–Operate (BOO)	Private	Public or Private	Private by contract (concession)			

Source: United States Department of Transportation, Federal Highway Administration. Available: [www.fhwa.dot.gov/ppp/options.htm](http://www.fhwa.dot.gov/ppp/options.htm)

## 4. A Conceptual Classification Framework of a PPP arrangement

When dealing with a PPP arrangement it is necessary to consider four main aspects:

### 4.1 Government's roles and responsibilities

Government's supports for PPP project includes (in brief):

- Preparing PPP Policy
- Preparing PPP-specific Law and regulations
- Establishing adequate PPP-specified institutions

- Direct funding for project
- Preparing adequate guarantees for loans via indemnity agreements, payments and compensation agreements, and hedging risks allocated to government
- Preparing an adequate situation for issuing appropriate debt instrument

## **4.2 Concessionaire Selection**

A concessionaire is a consortium formed exclusively for the PPP project. As a principle participant in a PPP project, its responsibilities may include the financing, design, construction, operation and maintenance of the infrastructure facilities, and the transferring of the facilities to the public authority in operational condition at the end of the concession period. A financially strong, technically competent and managerially outstanding concessionaire is critical for the success of PPP. Success or failure of a PPP project intensely depends on the competence of the concessionaire. Therefore, selection of an appropriate concessionaire is among the four main aspects of a PPP projects. For this purpose, the public authority should try to optimize a tendering process, concessionaire evaluation methods and evaluation criteria.

## **5. Tendering process**

The tendering processes of PPP projects are more complicated and more costly than those of traditional development approaches. Therefore, a well-structured tendering process that can encourage competition and minimize tendering costs has great importance. A multi-stage procurement process, composed of inviting expressions of interest, prequalifying tenders, evaluating tenders and negotiation with the preferred tender(s) is widely adopted by governments. Governments will also develop step-by-step guidelines and standardized tendering documents and contracts to facilitate the tendering process.

- Invite Expression of Interest—At this stage, the government advertises the project to potential private investors. Such advertisement is often published in a public gazette and on government websites.
- Prequalify Tenders—The aim of the prequalification stage is to reduce the number of interested tenders to a shortlist, which consists only of reputable and experienced tenders. This process

can ensure that weaker tenders do not incur unnecessary tendering costs.

- Evaluate Tenders—Tenders on the shortlist are invited to submit detailed proposals that are then evaluated in accordance with the predetermined evaluation criteria. The evaluation at this stage focuses on the technical and financial feasibilities of the proposals.
- Negotiate with Preferred Tenders—The government may select one or a few preferred tenders to negotiate with. During the negotiation stage, provisions in agreements are carefully reviewed. Once the agreement is signed, a contract award notice will be published and the contract is implemented.

However, the tendering procedures differ slightly from sector to sector and country to country. Additionally, the process depends on the size and complexity of the project.

## **6. Evaluation Methods**

There are different methods to evaluate the competitive tenders. Some tender evaluation methods currently in use include the simple scoring method, NPV method, multi-attribute analysis, Kepner-Tregoe decision analysis technique, two-envelope method, NPV method plus scoring method, and binary method plus NPV method.

In general, the binary method, simple scoring method and two-envelope method may be more appropriate for small and simple PPP projects. The NPV method may be more appropriate for projects with no technical problems, and the multi-attribute analysis and the Kepner-Tregoe decision analysis technique may be more suitable for complex PPP projects. Every country selects the method most suitable for their needs and expectations. Different governments may use different methods or a combination of multiple methods to evaluate tenders. Although different methods have their advantages and disadvantages, among these methods, the NPV method and multi-attribute analysis are the two most commonly used, and are also the two that are most recommended by experts and experienced practitioners.

### **6.1 Evaluation Criteria**

The success of the evaluation system largely depends on the selection and utilization of the right criteria in the evaluation process. A variety of tender evaluation criteria for PPP projects have been explored by researchers. A

proper set of evaluation criteria should be determined on the basis of the public clients' objectives, the project characteristics, and the uniqueness of the particular PPP scheme. In addition, weights that reflect the relative importance of each set of criteria should also be assigned.

Generally speaking, evaluation criteria cover four aspects:

- (a) financial
- (b) technical
- (c) safety, health, and environmental
- (d) managerial.

## **7. Control, monitoring mechanism components and quality assurance**

There are so many cases around the world in which the PPP project has failed because the output quality has been far from the projected goals, and the quality of services provided for the end users had been unacceptable. Therefore, the need for an output specification to clearly define the requirements of the public sector and a performance monitoring mechanism to ensure continuous improvement are crucial issues. The existence of well-defined monitoring mechanisms to supervise the project after signing is crucial because it increases transparency and predictability for all involved parties. The success of PPPs is enhanced if they are accompanied by independent quality assurance and monitoring mechanisms to evaluate the provider performance and programme outcomes, and the public sector must be very careful in preventing corruption and misconducts. Therefore, the headquarters' control and monitoring mechanisms are very important.

A significant part of the design would have been completed and reviewed during the planning and development phase of PPP projects but it is important to understand the key control and monitoring mechanisms to achieve design quality and improve construction performance. This is crucial as design quality influences the construction process.

The control and monitoring mechanisms include a range of standards and tools to support effective planning and implementation of projects and to monitor compliance to ensure that the project objectives are achieved.

There are many tools and standards developed to facilitate control and monitoring during the delivery of projects, such as the approval mechanism using prescribed value-for-money accounting and financial methodologies and discounting techniques. For example, the bidding process, is designed to create competition and to maintain competitive

pressure throughout to ensure that the private sector PPP bid provides value for money.

### **PPP Finance**

A sound financial plan is critical to the success of a PPP project. This importance is reflected in the higher weight assigned to the financial criteria in evaluating PPP proposals.

The concessionaire's financial capability can be measured by four dimensions: strong financial engineering techniques; advantageous finance sources and low service costs; sound capital structure and requirement of low-level return to investments, and; strong risk management capability.

## **8. Funding strategy, technique and instruments**

Transferring responsibility to the private sector for mobilizing finance for infrastructure investment is one of the major differences between PPPs and conventional procurement. Where this is the case, the private party to the PPP is therefore responsible for identifying investors and developing the financial structure for the project. However, it is important for public sector practitioners to understand private financing structures for infrastructure, and to consider the potential implications for the government. The source of finance affects the project cost, revenues, risk allocation and therefore the project viability. Sources of finance, whether debt or equity, affects the level of risks, returns, lending terms and conditions such as repayment period, interest rates/charges, foreign currency requirements, project structuring, bankability, the need for various types of guarantees and credit enhancement.

PPP provides a way of funding major capital investments without immediate recourse to the public purse. Table 22.2 below shows the funding options for PPP schemes.

The private party to most PPP contracts is a specific project company formed for that purpose, often called a Special Purpose Vehicle (SPV). This project company raises finance through a combination of equity, provided by the project company's shareholders, and debt provided by banks, or through bonds or other financial instruments. The finance structure is the combination of equity and debt, and contractual relationships between the equity holders and lenders. The government's contractual relationship is with the project company. The initial equity investors, who develop the PPP proposal, are typically called project sponsors. Typical equity investors may be project developers, engineering

or construction companies, infrastructure management companies, and private equity funds. Lenders to PPP projects in developing countries may include commercial banks, multilateral and bilateral development banks and financial institutions, and institutional investors such as pension funds.

**Table 22.2 Funding Options**

Type	Usage
Bank debt	Frequently
Equity	Frequently
Bonds	Occasionally
Loan from Shareholders	Occasionally
Mezzanine finance	Exceptionally
Forfeiting model	Exceptionally

## 9. Debt and equity component

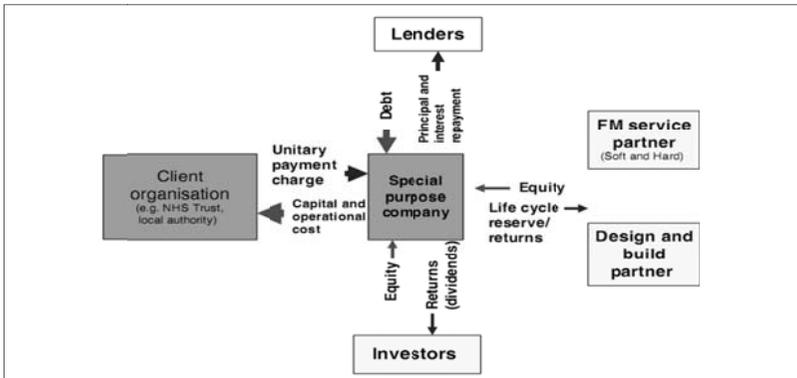
Investment for PPP projects is made up of debt and equity components. Debt capital is provided by lenders (e.g. banks, financial institutions). Equity is usually provided from a variety of sources such as investors, project participants such as design and build, and FM subcontractors. Equity investment is “first in, last out,” that is any project losses are borne first by the equity investors, and lenders suffer only if the equity investment is lost. This means equity investors accept a higher risk than debt providers, and require a higher return on their investment. The aim of the project sponsor and its advisors in development is typically to minimize the cost of finance for the project. Because equity is regarded as more expensive than debt, project sponsors often try to use a high proportion of debt to finance the project. The lenders and public sector clients prefer members of the SPV to have an equity stake to provide an incentive and long-term commitment to the project.

The debt/equity ratio has implications for the project economics as debt is generally cheaper than equity. A high level of equity reduces the payment obligations to lenders (i.e. principal and interest payments) or debt service burden on the cash flow, which is crucial at the early stages. Due to the significant contribution from lenders, they will insist on the high quality and viability of the project in terms of certainty of revenue income, additional income potential (third party income), established reputation and track record of the companies forming the SPV and their advisers. The debt capital and equity are used to fund the project capital

and operational cost. In return, the SPV receives a regular payment/unitary charge to repay lenders interest and principal payments on the debt, returns to investors and shareholders in the form of dividends and to build up “life cycle” reserves or reserve account for future maintenance and protection of the project.

Debt provided by lenders has the lowest risk, so payments for the principal and interest of the loan have a higher priority. Hence, the term “senior debt” is sometimes used. The equity contribution is more at risk if the project goes wrong but returns are higher if successful. Mezzanine finance, called quasi-equity, junior debt or subordinated debt, is sometimes required. This type of funding, as the name suggests, shares some characteristics of debt and equity capital and is usually provided by investment banks. Fig. 22.1 below shows the relationship between risk and return ratio relating to various funding sources.

Fig. 22.1 The relationship between risk and return ratio



## Debt Finance

One of the first steps a bidder for a PPP Contract normally takes to secure financing is to engage a financial adviser with experience in project finance and PPPs. Private-sector project-finance debt is provided from two main sources: commercial banks and bond investors. Commercial banks provide long-term loans to project companies; bond holders, typically long-term investors such as insurance companies and pension funds, purchase long-term bonds (tradable debt instruments) issued by project companies (“lender” is used here to mean either a bank lender or a bond investor.) Although the legal structures, procedures and markets are

different, the criteria under which debt is raised in each of these markets are much the same, but they each have advantages and disadvantages.

### **Other Alternatives**

One option is for project sponsors to back up the project company by providing a corporate or sponsor guarantee to the lender for repayment for all or part of the project debt. Another alternative to lower the cost of finance for a PPP is for the government to participate in the finance structure, as described in *The Role of Public Finance in PPPs*. The government, or a government-owned financial institution, could provide finance as a lender to the project company, or could provide a guarantee to some or all of the project debt.

### **Forfeiting Model**

A finance structure sometimes used to reduce the cost of finance for PPPs is the forfeiting model, which can be used for “government-pays” PPP projects. Under this model, once construction is completed to a quality accepted by the government by issuing a “waiver of objection,” the government is responsible for the debt service payments to the lender. In other words, this model refers to a construction in which the private contractor sells claims for payments to the bank, while the public principal declares a waiver of objection. This can lower the project’s financing costs. However, it means the government retains more risk under the PPP, and as debt service payments are no longer conditional on performance, the lender has no interest in project performance during operations.

### **Mezzanine Financing**

Mezzanine financing is a hybrid of debt and equity financing that is typically used to finance the expansion of existing companies. Mezzanine financing is basically debt capital that gives the lender the rights to convert to an ownership or equity interest in the company if the loan is not paid back in time and in full. It is generally subordinated to debt provided by senior lenders such as banks and venture capital companies.

Since mezzanine financing is usually provided to the borrower very quickly, with little due diligence on the part of the lender and little or no collateral on the part of the borrower, this type of financing is aggressively priced with the lender seeking a return in the 20–30% range.

### **Islamic Bonds (Sukuk)**

*Sukuk* can be of many types depending upon the Islamic mode of financing used in their structuring. However, the most common and important among those used are *Ijarah*, *Musharakah*, *Salam* and *Istisna Sukuk*.

Malaysia has been one of the main markets for *Sukuk* bonds. Technically, such bonds do not charge interest, but rely on the underlying business of the borrower, which is a structure which fits well with PPP. Such bonds do not charge interest, but rely on the underlying business of the borrower, which is a structure which fits well with PPP. It is aggressively priced with the lender seeking a return in the 20 while it can be expected that *Sukuk* bonds will play an increasing role in PPP financing.

### **Sukuk Istisna**

*Istisna Sukuk*, also known as an Islamic project bond, is a good alternative for conventional bonds that generally face challenges in Islamic countries. *Istisna* is a contract of sale of specified goods or projects to be manufactured or performed with an obligation on the manufacturer or contractor to deliver them on completion.

## **10. The role of public finance in PPPs: considerations for government**

Private finance is not a defining characteristic of a PPP, and governments can also finance PPP projects, either in whole or in part. In other words, when a PPP involves private finance, the project sponsor typically has the primary responsibility for developing the financial structure. Reducing the amount of capital investment needed from the private party reduces the extent of risk transfer, weakening private sector incentives to create value for money, and making it easier for the private party to walk away if things go wrong.

There are several ways in which the government may need to influence the financing structure:

- **Loan or grant finance directly from government to project company**—governments may provide finance directly to a PPP in the form of loans or upfront grant subsidies. This can help mitigate government risk, as described above, or be a means to make finance available at better terms than would otherwise be possible.

- **Government guarantee of commercial loan to project**—rather than providing lending directly, governments may instead guarantee repayment of debt provided by commercial sources in case of default by the private party. Guaranteeing project debt undermines the risk transfer to the private sector. For this reason, governments often provide only partial credit guarantees, that is a guarantee on repayment of only a part of the total debt.

### **PPP Risk**

As far as risk allocation is concerned, PPP requires the analysis and allocation of a broader spectrum of risks when compared to traditional contracts. The basic principle is that risks should be allocated to the party best able to manage them. Consequently, the goal is not to maximize, but to optimize risk transfer.

Most risk factors under the political (e.g. uncertainty of government policy and instability of government), financial (e.g. inflation risk and interest risk), and legal (e.g. changes in law and regulation, and inefficient legal process) categories should be assumed by the government. Most operation-related risks should be retained solely by the private sector (e.g. technical and management risks) or shared by the public and the private sector (e.g. demand and supply risks). Some risks can only be mitigated by high-level political leadership, a large and effective injection of technical assistance, an adequate monitoring mechanism, and communication efforts.

### **Political Risks**

- (1) Expropriation, reliability and creditworthiness of the government
- (2) Change in law and government policies
- (3) Political opposition
- (4) Corruption
- (5) Delay in approvals
- (6) Political force majeure events

### **Financial Risks**

- (1) Unfavourable economy in the host country
- (2) Rate of return restrictions
- (3) Lack of credit worthiness
- (4) Inability to service debt
- (5) Bankruptcy

- (6) Complex financial structure of PPP projects
- (7) Lack of guarantees
- (8) Financing risks
- (9) Loan ability
- (10) Fluctuation of the inflation rate, interest rate, foreign currency exchange rate

### **Operation and Maintenance Risks**

- (1) Operation and maintenance cost overrun
- (2) Operator's incompetence and low operating productivity
- (3) Availability of material
- (4) Government restriction of profit and tariff
- (5) Inaccurate pricing and demand estimate

### **Legal Risks**

- (1) Prejudiced and unfair process of awarding the project
- (2) Host-country's interference in choosing subcontractors
- (3) Overprotective control/supervision by the host government
- (4) Disapproval of guarantees by the government
- (5) Change of host-country's fiscal regime
- (6) Change of host-country's consideration of the project's scope
- (7) Non-cooperation between public agencies
- (8) Actions or omissions of the public authorities that prevent the project to be completed
- (9) Unsteady legal and regulatory framework
- (10) Poor legislation
- (11) Non-enforcement of legislation
- (12) Lack of a stable project agreement
- (13) Vague and inconsistent clauses and specifications and inaccurate phasing
- (14) Non-accordance between all contracts in the BOT framework
- (15) Language barrier for the contract
- (16) Breach of contract provisions
- (17) Revision of the contract clauses
- (18) Unanticipated change of the concessionaire scheme
- (19) Lack of confidentiality and trust in the concession company
- (20) Risks of early termination
- (21) Legal *force majeure* events

## **PPP for Kurdistan**

Kurdistan has been neglected by the Iraqi central regimes for decades, despite a high potential capacity to be a developed region in the Middle-East, and suffers from its relatively undeveloped infrastructures. Indeed, the lack of modern infrastructures is among the major challenges to Kurdistan's economic development. On the other hand, the high level of security and political stability in Kurdistan, its large reserves of oil and gas and an open-door policy for foreign investors has attracted a huge amount of foreign investment and trade from Europe, North America, the Middle East and Asia. Kurdistan has huge potentials in natural and human resources, which are viewed as the foundation for achieving development goals.

In recent years the Kurdistan Regional Government (KRG) has paid special attention to develop infrastructures and preparing prerequisites to the reconstruction of Kurdistan. Despite the KRG's admirable attempts and the significant progress that has been made in Kurdistan, so many projects still need accelerated economic growth-rates and to achieve sustainable development goals. Considering the huge amount of money needed for achieving these goals and the KRG's budget limitations, there is a pressing need to participate in local and international private companies.

## **11. Models for PPPs in Kurdistan**

For defining PPPs in Kurdistan, it can be assumed that through a PPP contract, the KRG and the private agency sign long-term cooperation agreements. In addition to the long duration of PPPs, two other characteristics can be mentioned. These are, the guarantee of a balance of rights of state and municipal property, and the presence of a private investor (or a number of investors), selected through a specific tendering process. Furthermore, an investment program for development under the strict control of the state should be introduced.

In this study we propose a model for public-private partnership for projects aimed at education infrastructure in Kurdistan. We find that as the KRG aimed to deliver free basic education for all, and as there is no cash flow generated from the project itself, and according to the huge amount of money needed for so many projects and the limited funds of KRG, we need models within the private sector that have the responsibility to raise finance for projects, and repayments from the KRG to investors. We therefore propose the DBFO model, from among the various types of PPPs within the private sector, which has the responsibility for design,

construction, financing and operation of educational facilities and the maintenance of them up to end of the contract period, after which the facility will be transferred to the KRG. In our proposed model, the KRG, both directly and indirectly, contributes to funding the project. Directly by providing 51% of equity funds of project company, and indirectly by providing debt instruments through issuing *Sukuk*, the Islamic bond recently introduced in Islamic countries such as in Malaysia, Saudi Arabia, UAE, Qatar and Egypt, based on real facilities. In order to select a concessionaire we proposed the Kepner-Tregoe decision analysis technique to effectively and comprehensively evaluate the proposals. As the PPP projects have not previously been implemented widely in Kurdistan, in order to mitigate the political risk we propose an political risk mitigation instrument, as recently used for some African countries. The schematic view of these models is introduced later.

In this section, we consider the four main aspect of a PPP arrangement in Kurdistan:

### **KRG's Roles and Responsibilities**

KRG support for PPP project:

- Preparing PPP Policy
- Preparing PPP-specific law and regulations
- Establishing adequate PPP-specified institutions
- Direct funding for project
- Preparing guarantees for loans via Indemnity Agreements, payments and compensation agreements, and hedging risks that have been allocated to government
- Preparing adequate situations for issuing appropriate debt instrument (*Sukuk*).

### **Concessionaire Selection**

The concessionaire's responsibilities, as a principle participant in a PPP project, may include the financing, design, construction, operation and maintenance of the infrastructure facilities and transferring of facilities to the public authority in operational condition at the end of the concession period.

A financially strong, technically competent and managerially outstanding concessionaire is critical for the success of PPP; success or failure of a PPP project depends on the competence of the concessionaire. Therefore, selection of an appropriate concessionaire is among the four

main aspects of a PPP project. For this purpose, the public authority should try to optimize the tendering process, concessionaire evaluation methods and evaluation criteria.

### **Tendering Process**

The tendering processes of PPP projects are more complicated and more costly than those of traditional approaches. Therefore, a well-structured, open, transparent and competitive tendering process that can encourage competition, transparency and accountability, procurement skills, contestability and minimize tendering costs has great importance. In this way, a PPP programme can also serve as a catalyst for wider public-sector reform that could have significant political, social and cultural achievements.

A multistage procurement process composed of inviting expression of interest, prequalifying tenders, evaluating tenders and negotiating with the preferred tender(s) is widely adopted by governments.

However, this phase, including procurement and negotiation and contract award, consists of these stages:

- (1) Invite expressions of interest (advertisement)
- (2) Pre-qualify bidders
- (3) Shortlist bidders
- (4) Refine the appraisal
- (5) Invitation to negotiation (ITN)
- (6) Receipt and evaluation of bids—best and final offer (BAFO)
- (7) Selection of the preferred bidders and the final evaluation
- (8) Contract award and final close
- (9) Contract management.

The KRG-owned agency may select one or a few preferred tenders to negotiate with. During the negotiation stage, provisions in agreements are carefully reviewed. Once the agreement is signed, a contract award notice will be published and the contract is implemented.

In the tendering process and contract negotiation period, safeguards for flexibility can be included by the involvement from the start of external experts from specialized regulatory bodies. However, the tendering procedures differ slightly from sector to sector and country to country. Additionally, the process depends on the size and complexity of project.

Moreover, the KRG-owned agency should also develop step-by-step guidelines and standardized tendering documents and contracts to facilitate the tendering process.

## Unsolicited Bids

The KRG-owned agency may use unsolicited bids for two main reasons: the undefined needs for projects in many fields and insufficient previous project experiences in many fields.

## Evaluation Methods

In our case, concerning the critical and strategic importance of education in Kurdistan, in addition to these factors, some other important factors should also be considered. Therefore, in selecting concessionaire, it is critical to pay great attention to some extra-localized criteria before reviewing the general criteria. Consequently, in order to select the concessionaire we propose the Kepner-Tregoe decision analysis technique to effectively and comprehensively evaluate the proposals. Moreover, we propose multi-attribute analysis for its second phase.

- **Kepner-Tregoe decision analysis technique**—this technique evaluates proposals based on criteria identified as “musts” and “wants.” The “musts” are the mandatory needs for the project and are expressed in the form of “yes/no” questions. Bidders satisfying the “musts” are then evaluated based on the “wants” using a simple scoring or multi-attribute scoring method.
- **Multi-attribute analysis**—the criteria are decided in the same way as for the simple scoring method, but each of these factors is divided into sub-categories with relative importance weights assigned. After multiplying the weights and the assigned scores of each bidder, the bidder with the highest maximum score is selected.

## Evaluation Criteria

Considering the strategic plans for Kurdistan and development policies determined by the KRG, and the special political and social situation of Kurdistan, it is crucial to incorporate some special localized criteria that will be determined by the KRG, in addition to the four main aspects of financial, technical, health and safety, and environmental and managerial.

## Control and Monitor Mechanisms and their Components

Education quality has a great role in the future of every country. Particularly in the Kurdistan region, education has systematically been neglected for decades by central Iraqi regimes, and the negative impacts of

several wars in recent decades have remained in the Kurdistan society, and so there is a great need for high quality education. On the other hand, so many PPP projects have failed because the project's output quality had been far from the pre-projected goals, and the quality of services provided for the end users was extremely unacceptable. Therefore, the need for an output specification to clearly define the requirements of the public sector and a performance monitoring mechanism to ensure continuous improvement is a crucial issue. Thus, there is a need to review the existing evaluation and monitoring mechanisms that are in place and to explore the rigour within these systems.

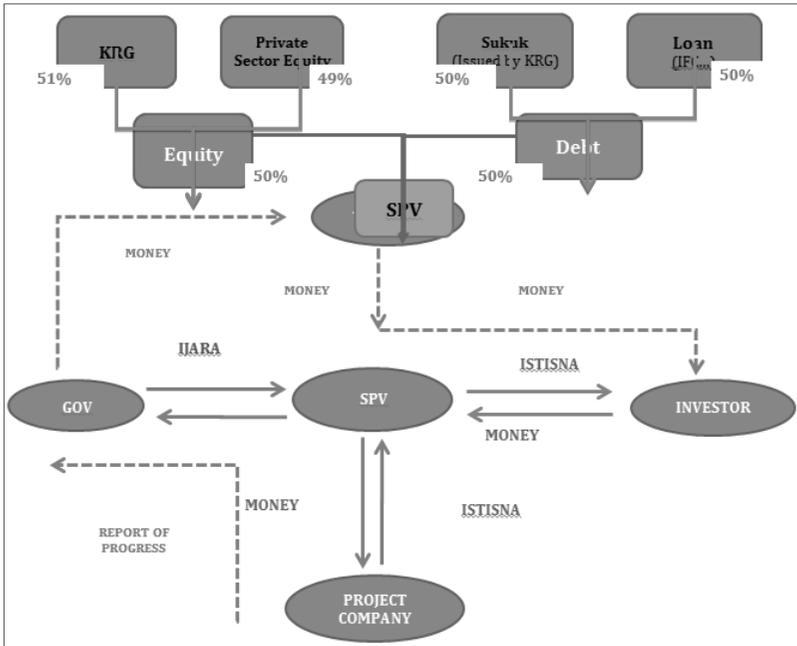
The control and monitoring mechanisms include a range of standards and tools to support the effective planning and implementation of projects and to monitor compliance to ensure that the project objectives are achieved.

Furthermore, the KRG should monitor the tendering process and the contract procedures continuously, and on a regular basis.

### **PPP Finance**

As the KRG aimed to deliver free basic education for all, and as there is no cash flow generated from the project itself, and a huge amount of money is needed to spend on so many projects, we need models giving the private sector the responsibility to raise finance for projects, and where repayments come from the KRG to investors. Therefore, we propose the DBFO from model among various types of PPPs, giving the private sector the responsibility for the design, construction, financing and operation of educational facilities and the maintenance of them up to end of the contract period when the facility will be transferred to the KRG. In our proposed model, the KRG directly and indirectly contributes to funding the project—directly by providing 51% of equity funds of the project company and indirectly by providing a debt instrument through issuing *Sukuk*, the Islamic bond recently introduced in Islamic countries, based on real facilities. See Fig 22.2 below.

Fig. 22.2 Application of PPP finance



### PPP Risk

Appropriate allocation of risk between the KRG and the private sector in PPPs is essential to the success of PPPs. As far as risk allocation is concerned, PPP requires the analysis and allocation of a broader spectrum of risks when compared to traditional contracts.

The main risks that an education PPP project in Kurdistan may face are:

### Political Risk

- (1) Expropriation, reliability and creditworthiness of the government
- (2) Change in law and government policies
- (3) Political opposition
- (4) Corruption
- (5) Delay in approvals
- (6) Political *force majeure* events.

### **Financial Risk**

- (1) The unfavourable economy in Kurdistan
- (2) Lack of KRG credit worthiness
- (3) Inability to service debt
- (4) Complex financial structure of PPP projects
- (5) Lack of guarantees from KRG
- (6) Financing risks
- (7) Loan ability
- (8) Fluctuation of the inflation rate, interest rate, foreign currency exchange rate
- (9) Construction cost overrun
- (10) Construction time delay
- (11) Material/labour availability in Kurdistan

### **Legal Risk**

- (1) Prejudiced and unfair process of awarding the project
- (2) Overprotective control/supervision by the KRG
- (3) Disapproval of guarantees by the KRG
- (4) Change of KRG's consideration of the project's scope
- (5) Non-co-operation between public agencies
- (6) Actions or omissions of the public authorities that prevent the project being completed
- (7) Unsteady legal and regulatory framework
- (8) Poor legislation
- (9) Non-enforcement of legislation
- (10) Lack of a stable project agreement
- (11) Vague and inconsistent clauses and specifications and inaccurate phasing
- (12) Risks of early termination
- (13) Legal *force majeure* events.

Among all of the above, the political risk may be among major risks that a PPP project encounters in Kurdistan. In order to hedge this type of risk we propose a political mitigation instrument known as Partial Risk Guarantees (PRG).

For managing other types of risks involved in PPP projects in Kurdistan, we suggest some recommendations in the next section.

## **12. Recommendations for PPP projects in Kurdistan**

It is crucial to make a comprehensive assessment of every aspect of PPP implementation to have successful PPP experience. A PPP roadmap for determining a high-level action plan for policy, technical, legal and regulation, institutional, capacity status, economic, financial and commercial issues are critical to ultimately achieve the goals. Some prerequisites therefore need to be considered.

### **PPP Framework**

It is essential to develop a PPP framework which determines the PPP policy, legal and regulatory framework, the proper type of PPP and appropriate PPP structure, as well as considering a finance plan and risk framework.

### **PP Policy**

Establish and clarify the policy framework, as the private sector needs to understand the drivers that lie behind the projects

The finance plan rates to

- Determining the financial environment
- Financing strategy and financial structure
- Financial instruments required for payment mechanisms and risk management.

Risk framework includes

- Identifying risk factors related to type and scale of project, the PPP type and structure and the country risks and analysis of these factors
- Planning for risk management and risk allocation strategies
- Designing and determining risk mitigation tools

### **Legal and Regulatory Framework should be Developed**

It is Essential to ensure:

2.1. Consistency and quality of PPP regulations through:

- (a) Establishing an effective and efficient process for PPP project creation across sectors

- (b) Providing guidelines for proper risk allocation across parties
- (c) Establishing clear requirements and oversight mechanisms that determine which government institutions are responsible for project-implementation, project-preparation, bidding, contract awards, construction and operation
- (d) Establishing a clear system for compensating the private sector for acts of authority that change sector-specific economic conditions not foreseen during bidding
- (e) Avoiding open-ended compensation rights for private participants, so that the state only assumes explicitly written commercial contractual contingent liabilities.

## 2.2. Effective PPP selection and decision-making through:

- (a) Establishing efficient planning frameworks to have systematic evaluations and decisions regarding PPP project-creation and planning
- (b) Establishing a clear process for deciding on the type and extent of KRG financial support and having proper accounting of contingent liabilities
- (c) Regularly applying appropriate project-evaluation and cost-benefit analysis techniques to ensure that a PPP is the optimal project-financing and service-provision option
- (d) Systematically measuring contingent contractual liabilities and accounting for delayed investment payments in a way consistent with public investment accounting by budget office
- (e) Reviewing the mechanism to handle unsolicited bids (if any).

## 2.3. Fairness/openness and transparency of bids, contract changes through:

- (a) Not unfairly favouring certain project bidders and operators
- (b) Establishing competitive and transparent bidding, that is the use of objective criteria and transparency during the selection process, requiring the review of the impartiality of costs and publishing necessary bidding documents, and a clear, consistent process for contract and contract-adjustment negotiations (the need for transparency, cost-review and a consistent process applies to single bids)

- (c) Establishing a system for independent oversight of such post-award renegotiation procedures and conditions in the event that separate bids are not required.

#### 2.4. Dispute-resolution mechanisms through:

- (a) Fair and transparent dispute-resolution mechanisms for quickly resolving controversies between the state and the operator, and at low cost
- (b) Options for technically adequate and efficient conciliation schemes to address complex project-design and planning issues (for example, engineering, architectural quality, land acquisition, procurement disputes, environmental impact issues), without lengthy appeals and with accompanying viable prejudicial reconciliation.

### **Institutional Framework should be Developed**

It is **essential** to ensure effective planning, regulation and oversight and to ensure accountability.

#### (a) Ensure quality of institutional design through:

- (i) Structuring, establishing and determination of roles of various PPP-specific agencies necessary for PPP planning and oversight, such as:

- (1) a PPP board at ministerial level
- (2) KRG contracting agency
- (3) a PPP advisory agency
- (4) a regulatory agency for enforcement of project standards
- (5) a committee of KRG budget and planning officials.

- (ii) Considering the following issues related to the mentioned agencies:

- (1) adequate determination of roles
- (2) adequate accountability and independence
- (3) having comprehensive oversight power
- (4) protected from political distortion.

#### (b) To establish a PPP **judiciary system** in order to:

- (1) Consistently and effectively enforce PPP investors and operators rights and arbitration rulings
- (2) Consistently and effectively uphold contracts related to cost-recovery
- (3) Ensure an effective appeals process to ensure fair compensation for early termination and transfer of contracts and expedite contract transfer for project exit and ultimately reduce the hold-up risk
- (4) Expedite mechanism for replacing failed operators to protect creditors' rights.

### **Operational Maturity should be Achieved**

#### (a) Public Capacity:

- (1) Comprehensive and robust public capacity for planning, design/engineering, financing, environmental assessment and oversight of project service quality in conformity to pre-defined standards
- (2) Government officials' technical expertise in project financing, risk evaluation and management and contract design
- (3) Public authorities' expertise and good experiences in designing contracts that reduce post-bid opportunism
- (4) Deploying proper accounting practices in considering fiscal and contingent liabilities by financial authorities.

#### (b) Methods and criteria for awarding projects:

- (1) Establishing a systematic approach for technical, economical and financial feasibility in the granting agency and for using efficient and appropriate objective economic variables in awarding projects
- (2) Competitive and transparent bidding and objective economic factors in a consistent manner as the primary consideration in final project-selection and contract award, such as qualitative assessment regarding quality and soundness of project and quantitative tools like VFM and public comparators
- (3) Incentive-efficient schemes used for allocation projects like NPV and other evaluation methods.

#### (c) strong appropriate risk allocation strategy:

- (1) Consistent risk allocation to ensure VFM, reduce excessive contract-renegotiations and reduce the likelihood of project default or bailouts
- (2) Extensive and effective use of financial instruments for risk-hedging and insurance such as guarantees, insurance and performance bonds for project risk diversification.

### **Investment Climate should be Improved**

#### **Political Will**

The level of political consensus, or will, to engage private parties in PPPs and to provide favourable implementation frameworks across the infrastructure sector should be evaluated and improved.

#### **Political Distortion**

The level of political distortion that affects the country's private sector, political stability, risk of government policy effectiveness and government transparency should be evaluated using different indices such as the Transparency International Corruption Perceptions Index, and ultimately should be continuously improved.

#### **Business Environment**

Establishing a systematic approach to continuously evaluate and improve the quality of the general business environment for infrastructure projects, market opportunities, macroeconomic risk, market efficiency and competitiveness using different indices such as the World Economic Forum Global Competitiveness Index

### **Financial Facilities should be Extended**

#### (a) Capital market

- (1) Establishing a reliable capital market with a variety of financing and risk management instruments for private infrastructure financing
- (2) Establishing a reliable, deep and liquid domestic and local finance sources in addition to foreign sources
- (3) Designing reliable and adequate long-term debt instruments such as *Istisna Sukuk* for project financing
- (4) Establishing a national development fund such as a pension fund based on oil, as in many oil producing countries such as Norway and Saudi Arabia, in which a specific percentage of oil

selling revenue be dedicated to social infrastructure development like education and healthcare

- (5) Establishing a developed insurance system and pension market with useful products for infrastructure risk reduction
- (6) Designing risk hedging instruments for interest-rate and exchange rate risk hedging.

(b) Marketable debt

To establish a liquid, deep, local currency-denominated, fixed-rate and medium-term bond market in marketable debt for both public and private sector issuers

(c) KRG payment risk management

- (1) To establish mechanisms to evaluate and ensure regularly fulfilling KRG obligations for PPP contracts and use liquidity-guarantee schemes to reduce non-payment risk, considering the KRG's sovereign debt and credit risk ratings
- (2) Evaluating and enforce the KRG's active partnership with international guarantee agencies such as the World Bank's Multilateral Investment Guarantee Agency (MIGA).

(d) KRG support and affordability for low-income users (for project services that are not free for end-users and repayment is based on user fee and charges)

KRG subsidy for low-income users may be provided commonly, reliable and effectively targeted

Some other regional considerations and adjustments in order to localize some rules and approaches in conformity with the strategic national interests of Kurdistan and political, geopolitical, social, cultural and religious realities in Kurdistan are essential to ensure successful PPP project implementations with sustainable achievements.

### **13. Conclusion**

Today, governments around the world, particularly in developing countries, face significant educational challenges in getting and keeping children enrolled in school, while simultaneously ensuring that learning outcomes improve. Many governments in developing and developed

countries have responded to these challenges by making greater use of the private sector and public-private partnerships (PPPs) in education as a means of improving both the delivery and financing of education. It is likely that the expansion of PPPs in the education sector will lead to greater emphasis being placed on private sector components in project lending by international organizations such as the World Bank.

While PPPs can bring many benefits to the basic education sector, they must be done right if they are to succeed. Unfortunately, many projects around the world have been cancelled due to lack of preliminary design and adequate information, an inadequate tendering process and legislative problems.

As discussed above, poorly designed and implemented PPP programmes can expose governments to significant financial and policy risks. An important component of a PPP framework for education is an enabling policy and regulatory environment and a strong legal framework. The regulatory framework must enforce the conditions under which private agencies can operate effectively and efficiently, while ensuring that the sector delivers high quality education and that the wider public interest is protected. Problems with the legal framework are the presence of formalistic and bureaucratic obstacles, unclear monitoring mechanisms, vague definition of contracting authorities and conflicts with constitutional norms, as well as problems with implementation such as an abnormally high use of non-competitive tendering processes and balancing the goals of transparency and cost effectiveness. Therefore, there is an obvious need to more carefully analyze the actual situation of the public procurement system in Kurdistan.

In this study, we propose a model for public-private partnership of projects aimed at the education infrastructure in Kurdistan. We find that as the KRG aimed to deliver free basic education for all, and as there is no cash flow generated from the project itself, and according to huge amount of money needed to spend on so many projects and the limited funds of the KRG, we need to models that within private sector have the responsibility to raise finance for projects, wherein repayments are regular transfers from the KRG to investors. We therefore propose the DBFO model among various types of PPPs within the private sector, which is responsible for design, construction, financing and operation of educational facilities and their maintenance in operational up to the end of the contract period, after which the facility will be transferred to the KRG. In our proposed model, the KRG directly and indirectly contributes to funding the project. Directly by providing 51% of equity funds of the project company, and indirectly by providing debt instrument through

issuing *Sukuk*, the Islamic bond recently introduced in Islamic countries, based on real facilities. In order to select a concessionaire, we propose the Kepner-Tregoe decision analysis technique to effectively and comprehensively evaluate the proposals. As previously, the PPP projects have not been implemented widely in Kurdistan, so in order to mitigate the political risk, which is a major risk in the Middle East, we propose a political risk mitigation instrument.

Overall, we suggest some prerequisites in order for the effective implementation of PPPs as follows:

- Establish and clarify the policy framework, as the private sector needs to understand the drivers that lie behind the projects
- Establish a clear legal framework, as PPPs depend heavily on contracts that are effective and enforceable
- Ensure consistency, as well as clarity, of the policy and legal framework, which reduces uncertainty for investors
- Use legal terms and approaches, where possible, that are familiar to the international private sector
- Draw up investment plans which can be useful to demonstrate high-level political support to indicate the potential flow of future projects, and to explain how projects fit together, even regionally
- Avoid sending out wish lists of disconnected projects that are not part of a coherent program
- Establish a clear PPP process map
- Create a PPP unit within government, with relevant commercial and legal skills, which is a key source of support for policy makers and project developers. It helps to ensure consistency and credibility. Credibility can send a powerful signal to the private sector about the public sector's competence and seriousness of intent
- Capitalize on the experience of others who have managed the process, as the private sector takes considerable comfort from working with public officials who have been through the process before
- Consider involving private sector resource companies that are engaged in other investment activities in the delivery and management of infrastructure projects.

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## **PART VIII**

# **LANGUAGE AND HUMAN RIGHTS**

## CHAPTER TWENTY-THREE

# A COMPARATIVE STUDY OF THE KURDISH MINORITY RIGHTS TO LANGUAGE IN IRAQ AND TURKEY

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### **Abstract**

This chapter aims to provide a comparative analysis of the state policies in Iraq and Turkey in relation to the Kurdish minority's use of their mother tongue. In international law there is no coherent package about the state's obligations towards minority language rights. However, to gain international respect and to promote inclusiveness of its population, the state inevitably has to reform its policies, though it remains reluctant to such reform.

### **1. Introduction**

Kurds are one of the largest ethnic groups in the Middle East but have so far been denied an independent state. For Kurds, their language is a proof of their distinct identity. Therefore, Kurds are determined to preserve it, although this has been a difficult task because of government policies. The states where Kurds live have realized the symbolic value of the language and have consequently sought to suppress it as part of their forced assimilation policy.<sup>1</sup>

The Kurdish language has been deliberately weakened by the Turkish, Iranian and Syrian states with the objective of exterminating it. In these

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<sup>1</sup> Kreyenbroek, Philip G, "On the Kurdish Language," in Kreyenbroek, Philip G. and Sperl Stefan (eds.), *The Kurds: A Contemporary Overview*, (Routledge, (1992), 69.

states, the constitution and the law includes a policy of the “linguicide” of the Kurdish language.<sup>2</sup> Similarly, harsh measures are not present in Iraq. Kurds are a minority group in all the four countries and all four states have applied diverse policies and methods aimed at the forced assimilation of their Kurdish minorities.

In this comparative study, I compare the right to language for the Kurdish minority in Turkey—also called a “democratic” country and part of the Council of Europe, a country with a great desire to join the European Union—with Iraq, a country with the highest percentage of Kurds as a proportion of that country’s total population. Section 3 is concerned with the right to language for the Kurdish minority in Iraq and section 4 is about the right to language of the Kurdish minority in Turkey. Section 5 concludes the chapter. But first, in section 2 the international standards for minority language rights will be examined.

## **2. International Standards for Minority Language Rights**

### **2.1 Introduction**

The structure of all modern states is inclusive of diverse group elements. Therefore, the question concerning minority groups occupies a high rank in the agenda of international law. This section seeks to analyse the system of the protection of minority right to language as one of the core issues related to the protection of minorities.

The following is a discussion of the normative framework of international standards related to minority language rights. The European system for protecting minority rights will be considered after a discussion of the universal standards for minority language rights.

### **2.2 Special Standards for language rights**

Linguistic minorities have concerns first about the ability of using their language in private, and second about the opportunity of preserving their language “against encroachments of majority language.”<sup>3</sup> If the first requires no more than tolerance and could protect the oral aspect of the

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<sup>2</sup> Hassanpour, Amir, “The Politics of a Political Linguistic: Linguists and Linguicide,” (2000) available at <http://www.cogsci.ed.ac.uk/~siamakr/Kurdish/KURDICA/2001/2/Hassanpour.html> (accessed March 19, 2008).

<sup>3</sup> Rodley, Nigle S., (1995), “Conceptual problems in the protection of minorities: international legal developments” *Human Rights Quarterly* 17 (1): 48–71.

minority language, the second, which relates to the use of the language in public, at an official level and in education, requires state funding and the active commitment to educational institutions to promote the written and literary aspects of the language.

There is more effort in the international community directed to minority languages, especially in Europe. The European standards are more ambitious in relation to the greater realization of the public aspect of language rights. The OSCE Copenhagen documents initiated courageous steps which affected minority linguistic rights in a positive way. We will first look at the international standards followed by the European system for language rights protection.

### **2.3 Language rights in Article 27 ICCPR**

The human rights recognized in the Universal Declaration were given legal force in the International Covenant on Civil and Political Rights ICCPR and the International Covenant on Economic, Social and Cultural Rights ICESCR. The most widely-accepted, legally-binding provision on minorities is Article 27 of the ICCPR, which states:

In those States in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right in community with the other members of their group, to enjoy their own culture, to profess and practice their own religion, or to use their own language.

Article 27 and the other related articles in the Convention are concise about the language and the linguistic groups that are included in the scope of the protection. However, No special measures are required from the government.<sup>4</sup> There are no special measures imposed on the state relating to the minority aiming to preserve its language.<sup>5</sup> The state's only clear obligations with regards to minority languages are that it should not discriminate on the grounds of language, along with others. The Human Rights Committee has recommended that the valid state interest in having an official language to promote national identity has to be combined with

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<sup>4</sup> General Comment of the Human Rights Committee 18 (37). United Nations Document HRI/GEN/1 of September 4, 1992.

<sup>5</sup> Rodely, Nigel S., (1995), "Conceptual problems in the protection of minorities: international legal developments," *Human Rights Quarterly* 17 (1): 56.

efforts to promote minority language rights.<sup>6</sup> However, there is no clear obligation on the state to act according to such a combination.

The ambiguity in this article, as in other articles related to minority rights, is the “careful formulation” that leaves the state with the freedom to choose and make its own decisions regarding minority groups. Apart from forced assimilation, which is prohibited, the state may choose a policy of assimilation, integration, separation, autonomy or different elements of each of these strategies.<sup>7</sup> There is no obligation upon the state to provide the required funding for education in the minority language. The only obligation is that the state provision for any funding must not discriminate among different minority groups.

In addition to private use, areas where the speakers of a language demand their language to be used could include education, administration and public media. However, the scope of the state’s responsibilities here is unclear. Nevertheless, the Human Rights Committee’s questioning of states highlights the areas of state responsibilities. These questions are directed at the use of minority languages in the school structure, publications and media, and in court when members of minorities are party to a case.<sup>8</sup>

## **2.4 Language Rights Under the UN Minority Rights Declaration**

The Declaration on the Rights of Persons Belonging to National or Ethnic, Religious and Linguistic Minorities is the only United Nations instrument addressing the special rights of minorities in a separate document. The Declaration contains specific language rights in article 4(3), which states: “States should take appropriate measures so that, wherever possible, persons belonging to minorities have adequate opportunity to learn their mother tongue or to have instruction in their mother tongue.” Though the right discussed in this article is more extensive than those guaranteed in Article 27, there is a clear flexibility in the obligations imposed on the state concerning the right to language. The argument that each case has its own characteristic is valid for the flexible formulation of the article.

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<sup>6</sup> Thio Li-ann, *Managing Babel: The international legal Protection of Minorities in the Twentieth Century*, (Martinus Nijhoff Publication, 2005), 221.

<sup>7</sup> Hadden, Tom, “Integration and Separation: Legal and Political Choice in the Implementation of Minority Rights,” in Ghanea and Xanthaki (eds.), *Minorities, Peoples and Self-Determination*, 176, (2005).

<sup>8</sup> Thornberry Thornberry, Patrick, *International Law and the Rights of Minority*, 201, (Clarendon Press, 1991).

Article 4(3) is both exhortatory and conditional. The provision starts with “states should,” which means that a normative obligation is imposed on the state to provide the opportunity to persons belonging to minorities “to learn their mother tongue or to have instruction in their mother tongue.” Such initially exhortatory obligation is conditional; that this should happen “wherever possible” is seen to “come close to obviating” the right provided in the article.<sup>9</sup>

The declaration offers some guidance in relation to minority rights in using their language but it does not provide strict obligations on the states or detailed requirements. It has no enforcement machinery because it is not a convention. The reason for this is that there is still some reluctance from states to ratify a convention in the area of minority protection.<sup>10</sup>

## 2.5 The European system

Minority language right protection is gaining more awareness in Europe. In addition to the special instruments directed to the right to language, there are also broader actions being taken in the area of protection and the promotion of minority language rights.

### ECHR<sup>11</sup>

The principal instrument of the Council of Europe is the European Convention for the Protection of Human Rights and Fundamental Freedoms (ECHR). The European Convention does not contain a self-standing provision concerning minority rights. Article 14 prohibits discrimination in the enjoyment of the rights in the Convention, *inter alia*, on the grounds of being “associated with a national minority.”

The European Convention contains little in the way of language rights. The consideration of the language right is made on the basis of Article 2 of Protocol 1, which states:

No person shall be denied the right to education. In the exercise of any function which it assumes in relation to education and to teaching, the State shall respect the right of parents to ensure such education and

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<sup>9</sup> Rodley, (1995), 57.

<sup>10</sup> Morsink, Johannes, (1999), “Cultural genocides, the universal declaration and minority rights,” *Human Rights Quarterly* 21 (4): 1009–1060.

<sup>11</sup> European Convention for the Protection of Human Rights and Fundamental Freedoms, 1950.

teaching in conformity with their own religious and philosophical convictions.

According to the European Court of Human rights, the article does not provide for the right to education in a minority language, but merely implies the right to be educated in one of the national languages. There is no obligation on the state to provide education in one's mother tongue.<sup>12</sup>

The limits of the right to obtain education in a minority language are pointed out in the Belgian linguistic case, concerned with the state's refusal to establish French-speaking schools in the Flemish-speaking region of Belgium. According to the court, the state refusal does not infringe the right to education without discrimination, though the state's policy tends to assimilate the minority to the language of their surroundings. Therefore, the court decision in the Belgian linguistic case is viewed as a decision constituting forced assimilation.<sup>13</sup>

However, in the more recent case of Cyprus vs. Turkey,<sup>14</sup> the court considered Turkey's refusal to continue provision for the Greek Language in northern Cyprus as a breach of the right to education. However, in light of northern Cyprus's status as an occupied territory, there is some doubt as to whether this decision provides a foundation for a significant change in the court's view of language rights.<sup>15</sup>

### **The OSCE Documents**

The OSCE is a regional security organisation. Issues of democracy, human rights and national minorities are included in the concept of security. OSCE standards for minority rights, provided in a series of documents, transcend traditional minority rights.

One of the important instruments of the OSCE in the area of minority rights is the 1990 Copenhagen Document,<sup>16</sup> which contains a comprehensive rights catalogue in the area of minority language rights. The importance of the document lies in its including provisions which

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<sup>12</sup> Craig, Elizabeth, (2003), "Accommodation of Diversity in Education—a Human Rights Agenda?" *Child and Family Law Quarterly* 15 (3): 3.

<sup>13</sup>Ibid., 4.

<sup>14</sup>Application No. 25781 (2002) 35 ECHR 731.

<sup>15</sup> Craig, "Accommodation of Diversity in Education," 3.

<sup>16</sup> The Copenhagen Document is the document of the Copenhagen meeting of the Conference on the Human Dimension of the OSCE 30 reprinted in 11 Hum. Rts. L.J. 232 (1999).

relate to the more important aspects of minority protection in particular issues relating to language.<sup>17</sup>

In relation to languages, persons belonging to national minorities have the right to use their mother tongue in private as well as in public.<sup>18</sup> Persons belonging to national minorities must have adequate opportunities to receive instruction in their mother tongue, as well as, wherever possible and necessary, for its use before public authorities, in conformity with applicable national legislation.<sup>19</sup>

### **The Framework Convention**

The Framework Convention on National Minorities is a legally binding instrument devoted to minority protection in general. The Convention does not grant specific minority language rights but establishes principles that have to be respected, setting out programs and objects that the state party undertakes, rather than applicable rights.<sup>20</sup> The principles with regard to languages are those set out in articles 9, 10, 11 and 14.

According to Article 9, the state must recognize the freedom to hold opinions and to receive and impart information and ideas in the minority language. Article 10 recognizes the use of minority languages in private and public, orally and in writing, as well as their use before administrative authorities. More detailed objectives are set out in Article 11, including the use of one's own name, the display of information of a private nature and topographical names in the minority language. Article 14 sets the objective of learning and instruction in the minority language, and Article 14.2 impose a flexible obligation on the state to provide education in the minority language.

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<sup>17</sup> Bloed, Arie, "The OSCE and the issues of national minorities," in Philips and Rosas (eds.), *Universal Minority Rights*, (Turku/Abo) (1997), 114.

<sup>18</sup> Copenhagen Document, para 32.1.

<sup>19</sup> *Ibid.*, para 34.

<sup>20</sup> Aaranio, Eero J., (1997), "Minority Rights in the Council of Europe: Current Developments," in Phillips and Rosas (eds.), *Universal Minority Rights* (Turku/Abo), 130.

## The European Language Charter<sup>21</sup>

The European Language Charter is the only international instrument directed specifically at language protection. Its first Article defines the “regional or minority languages” as those traditionally used within a given territory of a state by a part of the population smaller than the rest of the population. The language must also be different from the official language(s) of the state. This definition covers languages with a territorial as well non-territorial basis. It excludes the languages of migrants, as well as the official language and its dialects, from its scope of protection.<sup>22</sup>

The charter is divided into two main sections—a general one containing the principles applicable to all parties and all regional or minority languages (part II), and a second section which lays down specific practical commitments which vary according to the state and the language (part III). The second section (part III) includes sixty-eight concrete and specific undertakings in various areas of public life. After a decision by the state as to which language(s) and territories of the state part III apply, a state must choose at least thirty-five of the sixty-eight obligations in this part, including those relating to education, judicial authorities, administrative authorities, public services, the media, cultural activities and facilities, economic and social life, and trans-frontier exchanges.

### 2.6 Summary and Conclusions about International Standards

The international documents on minority rights generally, and language rights in particular, are flexible norms leaving a wide margin of appreciation to the states in which minorities reside. In addition, the tendency towards non-judicial approaches to address minority problems is certainly a limitation in the recognition of rights and the state’s obligations towards its minorities.

In relation to the international standards of language rights, there is no positive obligation on states concerning the recognition of linguistic minorities or the kind of rights such minorities should enjoy. The actual

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<sup>21</sup> The European Charter for Regional or Minority language languages adopted by the Committee of Ministers of the Council of Europe in 1992 CETS No 148, entered into force on March 3, 1995. At present it has been ratified by twenty-three states.

<sup>22</sup> Van Bossuyt, Anneleen, (2007), “Is there an effective European legal framework for the protection of minority languages? The European Union and the Council of Europe screened,” *European Law Review* 32 (6): 860–877.

implementation of language rights experienced in different countries is often the result of negotiation and a reflection of power-relations in the country. The solutions in each state are unique and specific to the conditions of that state.

The OSCE Copenhagen document could be considered an alternative strategy for developing language rights. Documents which followed, such as the FCNM and the UN Minority Declaration, were steps on the pathway of OSCE principles. However, the recent instruments recognising the importance of the public use of language show that the rights provided are rather equivocal. The states should make sure that there are financial obligations backing these provisions.

The European system provides for greater development in the scope and standards of minority language rights in comparison with existing universal standards. However, the common point is that it does not provide for a comprehensive package for language rights. Most of the rights provided are attached to conditions stating that steps be taken “wherever possible” and fail to impose any financial obligations on the state.

Due to the special character of each minority group in terms of population, demands, concentration and historical background, it is more practical to have flexible standards of rights. This flexibility is needed not just in the substance of the rights, but also in the implementation mechanisms. The principal aim of the OSCE, as a security organisation, is to maintain the stability of member states. By relying on diplomacy as a mediation tool, minority rights are more effectively protected in practice. For instance, Turkey is a party to the ECHR and the legal obligations therein, yet the rights of the Kurdish minority have not been secured. However, Kurdish language rights are entrenched in Iraq, though Iraq does not have to adhere to the ECHR or any other European legal standards. This comparison shows that the real protection of minority language rights must extend beyond legal means to also include political strategies.

### **3. Kurdish Rights to Language in Iraq**

#### **3.1 Introduction to the case of Iraq**

The Kurds’ share of Iraq’s population is the highest in comparison with their percentage in the other “host” countries. The scope of language rights awarded to Iraq’s Kurds is not indicative of a genuine desire by the state to promote Kurdish identity. Instead, such rights exist alongside a policy of assimilation known as “Arabization.”

The main characteristic of Iraq is its “diversity of terrain, resources, and above all of people.”<sup>23</sup> Iraq is divided into three major groups: ethnic Kurds, Arab Shi’a and Arab Sunnis. Aside from these three groups there are a number of smaller ethnic and religious groups like Turkmen, Assyrian, Christian (which includes many different communities), and a few communities that predate Islam. The map 23.1 below shows the population concentration around the country and the estimated share of each group. The diversity of Iraqi society and the absence of a historical basis for its current borders have been cited as reasons for the country’s long history of instability and violence.<sup>24</sup>

Iraq’s borders incorporate a diverse medley of people who have not yet been integrated into a single political community with a common sense of identity. Considerable integration and assimilation policies have been followed by almost all Iraqi governments. However, it is doubtful whether these policies have succeeded in building a unified Iraqi identity.<sup>25</sup> What follows is an overview of recent developments in Iraq, and an examination of the historical changes in the political system of the country since this has played a crucial role in determining the scope of Kurdish language rights in Iraq.

### **3.2 The Local Language Law and its practice before 1958**

Providing the new state of Iraq with a constitution was part of the arrangement made by the British mandate. On March 21, 1925, the first Constitution of Iraq came into existence,<sup>26</sup> asserting the right to language in Article 16: “The various communities shall have the right of establishing and maintaining schools for the instruction of their members in their own tongue, provided that such instruction is carried out in conformity with such a general program as may be prescribed by law.” However, there was no specific reference to or recognition of the Kurds as a community.

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<sup>23</sup> Marr ,Phebe, *The Modern History of Iraq*, (Westview Press) (2nd ed., 2004), 3.

<sup>24</sup> Kelidar, Abbas, *Iraq: the Search for Stability*, Conflict Studies 59, (The Institute of the Study of Conflict, 1975), 1.

<sup>25</sup> Lukitz, Liora, *Iraq the Search for National Identity*, (Frank Cass, 1994).

<sup>26</sup> Davidson, Nigel G., (1925), “The Constitution of Iraq,” *Serious Journal of Comparative Legislation and International Law* 7 (1): 41–52.

Map 23.1. The Ethnic and Religious Groups in Iraq, 1992.<sup>27</sup>

**Ethnoreligious Groups**



<sup>27</sup> Available at <http://www.lib.utexas.edu/maps/iraq.html> (accessed June 17, 2008).

The revolts and demands for recognition by the Kurds continued. As mentioned previously, the only right Iraqi Kurds were successful in securing was the right to language. In 1931, the Iraqi government issued the Local Language Law, and “although the provisions were not fully carried out, it marked the first time that the Iraqi government legally recognized Kurdish cultural rights and separate identity.”<sup>28</sup> The Local Language Law was an official recognition of the Kurdish language in Iraq, “the only country, besides the former Soviet Union, which recognized Kurdish as a local language.”<sup>29</sup> However, the Kurdish language had been used for teaching in schools before that date. In 1919, the total number of schools in Iraq was 75, and the language of education in 7 of these schools was Kurdish.<sup>30</sup> Table 23.1 below shows the number of school in the country. The source of the information in the table is the British annual report to the League of Nations.<sup>31</sup> The next columns explain the mixture of Arabic and Kurdish in the school.<sup>32</sup>

There were complaints that the number of schools in Kurdish areas were less than the number in other parts of Iraq, and the hours of Kurdish teaching in the school was decreasing in each stage of education to allow for more Arabic classes. As Table 23.2 below shows, there was a decline in the number of schools by 1930, which was a result of government policy to Arabize Kurdish schools.

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<sup>28</sup> Entessar, Nader, *Kurdish Ethnonationalism*, (Lynne Rienner Publishers, 1992), 53.

<sup>29</sup> Hassanpour Amir, Skutnabb-Kangas Tove & Michael Chyet, (1996), “The Non-Education of the Kurdish Perspective,” *International Review of Education* 42 (4): 367–379.

<sup>30</sup> Aziz Omar Abraham, 'Education in Kurdistan: change from cover to cover' *Almarifa* No. 156 March 2007 ( تغير من الغلاف الى ) عزيز, عمر ابراهيم, "التعليم في كردستان: تغيير من الغلاف الى" المعرفة العدد 156 مارس 2007 (الغلاف) available at <http://www.almarefah.com/article.php?id=542> accessed at 10/05/08.

<sup>31</sup> Hassanpour 1992, 311.

<sup>32</sup> *Ibid.*, 315.

**Table 23.1 Number and Proportion of Kurdish Schools in Iraq, 1923-30 as referred to in The British report<sup>33</sup>**

Total No. of Schools in Iraq	Kurdish Schools	% of Total	Source
			Annual Report (pages)
205	6	2.92	1923-24 (217, 218)
228	15	6.57	1925 (135, 139)
247	19a	7.69	1926 (124, 128)
249	24b	9.63	1927 (153, 157)
264	28c	10.44	1928 (128, 132)
271	31d	11.43	1929 (136, 139)
291	28e	9.62	1930 (122, 125)

**Table 23.2. Teaching Arabic and Kurdish in Primary Schools of Kurdistan, Iraq 1928**

Grade	Hours per week	
	Arabic	Kurdish
1	7	5
2	8	2
3	6	2
4	6	2
5	5	1
6	5	1
<b>Total</b>	<b>36</b>	<b>13</b>

It is clear from Table 23.2 that the only stage at which pupils could receive education in the Kurdish language was in primary school. In addition, the number of hours taught in Kurdish were decreasing each year in favour of more Arabic classes. There was no Kurdish teaching in secondary schools, since the Local Language Law officially recognized the right to learn in Kurdish in primary schools alone.<sup>34</sup>

There was a decline in the number of Kurdish primary schools, and fewer hours were given to Kurdish lessons towards the end of the Monarchy era. By 1958, all girls' schools in Sulemani were taught in Arabic. There was only one Kurdish school each in Erbil and Kirkuk. In the few remaining schools, instruction was increasingly conducted in Arabic. The Iraqi government was not serious in applying the Local

<sup>33</sup> Ibid., 311.

<sup>34</sup> Ibid., 316.

Language Law. In contrast, there was a deliberate effort to neglect Kurdish as a medium of instruction.<sup>35</sup>

### 3.3 Kurdish language in the Iraqi Republic

The coup led by General Abd al-Karim Qasem overthrew the Hashemite monarchy on July 14, 1958, and Iraq was subsequently declared a republic. Article 3 of the 1958 Constitution recognized the Kurds as distinct national partners to the Arab nation in Iraq, with national rights.

The government also permitted publications in the Kurdish language. A Kurdish studies department in the ministry of education was established.<sup>36</sup> Kurdish publications flourished in the first year of the coup.<sup>37</sup> The Kurdish Baghdad radio developed positively after the revolution, with broadcasting hours increasing to twelve a day.<sup>38</sup>

The positive trends in the recognition of Kurdish rights in the first year of the revolution were gradually eliminated. In 1961, the government prohibited the holding of a Kurdistan teacher's conference, and started a campaign against the Kurdish language by renaming Kurdish locations with Arabic names.<sup>39</sup> This new era in relations was marked by the government's decision to close down all Kurdish publications.<sup>40</sup>

The promotion of the Kurdish language by the republican government started to decline in 1960 and the policy of preventing Kurdish schooling became more evident on the outbreak of the Kurdish revolt in 1961. Since then, the relationship between Kurdish leaders and successive regimes in Baghdad has been characterized by conflict. The central government's policy in response to the Kurdish revolts was to place greater restrictions

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<sup>35</sup> Ibid.

<sup>36</sup> A field study in Kurdistan-Iraq. The Role of September Revolution in the Social Change Movement, *Altaaki Journal*, August 16, 2006. (جريدة التاكي. دراسة ميدانية في )  
 (اقليم كردستان- العراق دور ثورة ايلول في حركة التغيير الاجتماعي  
<http://www.taakhinews.org/tasearch/wmprint.php?ArtID=3866> (accessed May 10, 2008).

<sup>37</sup> Sim, Richard, (1980), "Kurdistan: the Search for Recognition," *Conflict Studies* 124, 10.

<sup>38</sup> Kamanger, Muhamad, "Summery of the Kurdish Broadcasting History," April 6, 2005 (كمانكر, محمد, "موجز في تاريخ الاذاعات الكوردية)  
<http://www.shafaq.com/paper.php?source=akbar&mlf=copy&sid=10230>  
 (accessed May 10, 2008).

<sup>39</sup> A field study in Kurdistan-Iraq.

<sup>40</sup> Sim, "Kurdistan: the Search for Recognition," 10.

on Kurdish schools and pay less attention to education in Kurdish areas in general. By 1969, illiteracy in Kurdistan was at 80%.<sup>41</sup>

### 3.4 The March Manifesto of 1970

The outbreak of the war in 1963 gradually led to greater restrictions on Kurdish education. In the same year, there was also an 8-month ban on all Kurdish periodicals.<sup>42</sup> Despite the war, however, the relationship between the Kurdish leaders and Baghdad did not break down completely. There were many efforts at peace making before an agreement was finally reached in 1970.

The March 11 agreement<sup>43</sup> recognized Kurds as equal partners with the Arabs. This, however, was not a significant gain since the 1958 Constitution had also made this claim. What is significant about the 1970 accord is that it afforded an amount of administrative autonomy to the Kurdish region and recognized linguistic and cultural rights for Kurds as an ethnic group.<sup>44</sup>

Had the manifesto been implemented there would have been higher Kurdish representation in the government. According to the agreement, the Vice-President was to be a Kurd and there was also to be Kurdish representation in the army, Revolutionary Command and State bureaucracy. Governors, judges and police officers in the Kurdish region were to be Kurds or Kurdish speakers. Within four years, a Kurdish autonomous region with a legislative assembly was to be set up. Although the agreement's implementation resulted in dispute, it remains an important document since it represents an official acceptance of Kurdish demands. Up to the present, the Kurds in Iraq still celebrate the day this peace agreement was signed, despite having gained many more rights since the 1990s.

The first point of the March 11 peace deal addressed the issue of Kurdish language use. Since 1970, both primary and secondary schools in

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<sup>41</sup> Aziz, Omar Abraham Omar Abraham, (2007), "Education in Kurdistan: Change from Cover to Cover," *Almarifa* 156 (عزيز. عمر ابراهيم, "التعليم في كردستان: تغير من Cover to Cover," *المعرفة العدد 156 مارس 2007* (الغلاف الى الغلاف), available at <http://www.almarefah.com/article.php?id=542> (accessed at May 10, 2008).

<sup>42</sup> Kreyenbroek, Philip G., "On the Kurdish Language," in Kreyenbroek Philip G. and Sperl, Stefan (eds.), *The Kurds—A Contemporary Overview*, (Routledge, 1992), 78.

<sup>43</sup> Appendix II. Extract from the agreement as cited in Short and McDermott.

<sup>44</sup> Yildiz, Kerim, (2007), *The Kurds in Iraq, Past Present and Future*, (Pluto Press London), 18–19.

Kurdish areas began teaching in Kurdish in the disputed province of Kirkuk itself, many schools acquired Kurdish names and here too students began to be educated in the Kurdish language.

The genuine will of the central government in Baghdad to fulfil its commitment to Kurdish autonomy in a satisfactory manner for Kurds was doubted by most observers. The main problem arose when seeking to determine the exact boundaries of the “Kurdish area.” According to the agreement, “Kurdish areas were to be determined by majority population, in accord with a census to be taken in October 1970.”<sup>45</sup> The central government did not hold the promised census in October 1970 or at any other time. Over the course of the following three years, the gap between Kurdish leaders and Baghdad widened, mainly over the census and whether Kirkuk would be included in the autonomous region. By 1973 clashes started to occur again between Kurds and the central government.<sup>46</sup>

With the start of the renewed conflict between Kurds and the Iraqi government and the implementation of the autonomy law in 1974, Kurdish education stopped in some towns like Khanaqen and Kiffri. The ending of education in the Kurdish language and the return to Arabic caused some difficulties for school children who were by that time in their fourth year.<sup>47</sup> In Kirkuk, however, although the city was not included in the autonomous region, Kurdish education in many schools continued until 1979 when the central government decided to switch all Kurdish schools back to using Arabic as the language of instruction.<sup>48</sup>

### 3.5 The de facto Kurdish state, 1991

The Iraqi leaders' decision to occupy Kuwait in 1991 and the ensuing Gulf War had an enormous detrimental effect on the country and marked yet another turning point in Iraqi history. In the north, the uprising in the Kurdistan region had its own unique features in comparison to the rest of the country. It was motivated by the desire for Kurdish self-determination, was more organized and was backed by the Kurdish militia. A decision was made by the Kurdish parties to coordinate their activities and to move towards unity. Kurdish parties played a major role in administrating and

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<sup>45</sup> MEPIP Report, (1974), “Iraq and Kurdish Autonomy,” *Middle East Research and Information Project* 27: 26–27, 30.

<sup>46</sup> Yildiz, 19.

<sup>47</sup> Karadagi, Kais, “Kannaqen, long time waiting,” *Sawt Alaraq* June 15, 2005, available at <http://www.faylee.org/2005/50643.htm> (accessed May 10, 2008).

<sup>48</sup> An interview with a teacher.

organizing the revolt. By March 13, 1991, Kurds announced the establishment of a civil administration in the north, which included the Kirkuk province.<sup>49</sup>

In January 1992, the Kurds held an election for a new government, from which the Kurdistan Regional Government (KRG) was formed on July 4, with the establishment of a parliament and a council of ministers. However, the KRG's borders included only approximately half of the Iraqi Kurdish population.<sup>50</sup>

This new situation was a turning point and led to the vast flourishing of the Kurdish language. As a result of the application of the autonomy law after 1970, by the time of uprising in 1991 all the textbooks in primary and secondary schools had been translated into the Kurdish language. Therefore, there were no significant difficulties concerning education in schools. However, there were other kinds of difficulties faced by the Kurdish administration, in particular economic issues and the ongoing pressure from the regime in Baghdad. Kurdish teachers did a remarkable job at this time, teaching for six months without pay.<sup>51</sup>

Increased attention is being paid to the education system in the Kurdish area, with a greater numbers of schools and kindergartens being opened. The increases in the number of schools are shown in the Table 23.3 below. The data is based on the annual reports of the Ministry of Education in the Kurdistan Region.<sup>52</sup>

Table 23.3 reports the number of kindergartens and primary and secondary schools in the Kurdish region and the number of students in each of these levels for the period 2001/01 to 2006/07. It shows that at all three levels in general, and in the secondary schools in particular, both the number of schools and students has increased significantly.

There are in the Kurdish region a few primary and high schools where teaching occurs in Arabic. In addition, there are schools for other minorities in the region. In 1993, the ministry of education in the Kurdistan region allowed education in the Turkish language for the

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<sup>49</sup> Marr, 248–250.

<sup>50</sup> Yildiz, 51.

<sup>51</sup> Ahmed, Tahir Taeb, "Iraq: Education in Kurdistan, Past, Present, and Future," 2005, available at [http://www.noticias.info/Archivo/2005/200502/20050220/20050220\\_49033.shtm](http://www.noticias.info/Archivo/2005/200502/20050220/20050220_49033.shtm) (accessed May 22, 2008).

<sup>52</sup> More details can be found in Heshmati, A. and Chawsheen, T., (2008), "The education sector in the Federal Region of Kurdistan," University of Kurdistan Hawler.

Turkmen minority in the region. In 2005, there existed 9 primary schools and 5 high schools for Turkmen.<sup>53</sup>

**Table 23.3. The Number of schools and students at different levels in the Federal Region of Kurdistan, 2000–2007**

Year	Kinder- garten	No. of Children	Primary/ Secondary	No. of Students	High school	No. of Students
2000– 2001	58	10,138	2,466	570,007	519	171,441
2001– 2002	60	10,253	2,295	507,468	516	169,476
2002– 2003	67	12,575	2,428	534,291	583	205,149
2003– 2004	78	15,484	2,532	550,042	660	237,951
2004– 2005	122	25,993	3,595	675,154	952	337,084
2005– 2006	123	27,393	3,538	704,005	1,079	384,889
2006– 2007	146	27,393	3,674	713,419	1,147	423,346

Source: Ministry of Education, Federal Region of Kurdistan

The Baghdad regime's days came to an end in 2003 when the US-led coalition forces invaded Iraq. In 2005, a new Iraqi Constitution was ratified. The new Constitution recognizes "Kurdistan, which comprises three governorates at present as well as fragments of others, as an established federal region." According to Article 140 of the Constitution, the disputed province of Kirkuk may join Kurdistan in case "the majority of its population decide to do so in a plebiscite to be held by December 2007."<sup>54</sup> However, the plebiscite was subsequently postponed to 2008, and Kirkuk remains one of the major disputed subjects between the central government and the Kurdistan Regional Government.

<sup>53</sup> Kakai, Fahmi, "Interview with Asaad Arbil about Turkmen education in Kurdistan region," December 9, 2005. ( فهمي كلكه يي: مقابلة مع الشخصية التركماني اسعد ) (اربيل حول الدراسة التركمانية في اقليم كردستان <http://bahzani.net/services/forum/archive/index.php/t-4854.html> (accessed May 12, 2008).

<sup>54</sup> McGarry, John and O'leary Brendan, (2007), "Iraq's Constitution of 2005: Liberal consociation as political prescription," *International Journal of Constitutional Law* 5 (4): 670–698.

According to the new Constitution, the official languages of Iraq are Arabic and Kurdish. Article 4 (i) states that:

The Arabic language and Kurdish language are the two official languages of Iraq. The right of Iraqis to educate their children in their mother tongue, such as Turkmen, Syriac and Armenian, in public educational institutions in accordance with educational guidelines, or in any other languages in private educational institutions, is guaranteed.

All over the country, education is free, whether in Arabic or non-Arabic schools. The new Iraqi passport is written in Kurdish in addition to Arabic and English. The Kurdish members of the Iraqi parliament generally speak in Arabic although they are officially allowed to speak in Kurdish. The scope of rights the Kurds possess in the new constitution is wider than ever before.

### **3.6 Summary and conclusions of the case of Iraq**

The relationship between Iraqi governments and the Kurdish leaderships has often been problematic. Kurdish uprisings on the one hand and the central government's negotiations on the other have been a constant feature of Iraq's history. Successive Iraqi governments have faced the Kurds' persistent demands and each had its own unique policy of dealing with the issue. Such policies were rooted in the power balance between the central government and the Kurdish minority, rather than a genuine will to resolve the matter. Partly because they are such a significant proportion of Iraq's population, the Kurdish minority in Iraq have been the most difficult to assimilate as part of a planned Arabization policy.

The Iraqi government has consistently claimed that its Kurds enjoy significant rights in Iraq, with such claims appearing particularly in its reports to the United Nations. It is undeniable that Kurds in Iraq have enjoyed greater language rights than their kin in Iran, Turkey or Syria. However, alongside these rights has existed a policy of forced assimilation, with almost all Iraqi governments engaging in Arabization.

A policy of Arabization has been pursued by Iraqi governments in order to achieve control over certain Kurdish areas through engineering demographic changes. It involves the eviction of Kurds and replacing them with Arabs from other parts of the country. The focus of the policy was mostly on oil-producing areas, and in particular Kirkuk. The new Iraqi Constitution of 2005, which recognizes Kurdistan as a federal region and the Kurdish language as an official language in Iraq alongside Arabic, includes a provision concerning the fate of Kirkuk. However,

implementation of this provision is facing resistance from the central government, undermining the relatively peaceful period of cooperation and power sharing with the Kurdish minority in Iraq.

## 4. Kurds Right to Language in Turkey

### 4.1 Introduction to the case of Turkey

The same historical events following the end of World War I that determined the fate of Iraqi Kurds played a similarly pivotal role in the future of their kin in Turkey. The aborted Treaty of Sevres, which awarded Kurds the right to self-determination, left Kurds in Turkey without any protection in the event of the non-realization of the treaty. The official Turkish position on Kurds until the 1990s was complete denial of their existence. Policies aimed at killing the Kurdish language were part of state policy in dealing with the Kurdish case. Nevertheless, by the 1960s more than three quarters of Kurds in Turkey still did not speak Turkish.<sup>55</sup>

The new system was shaped in the 1924 Constitution.<sup>56</sup> The Republic of Turkey based its foundation on the two pillars of Secularism and Turkish nationalism, and thus the state policy has been directed by these two principles. Ataturk's aim was to construct a new Turkish state which would cut off all the ties with the past, and in particular with the Ottoman Empire and its Islamic heritage.<sup>57</sup>

The first military coup of 1960 replaced the 1924 constitution with the constitution of 1961. In this constitution, the position of the military as a powerful and overriding authority was secured. The so-called "National Security Council" was incorporated into the constitution. Since then, the interference of the military in the political life of Turkey has been constitutionally acknowledged. The recent constitution of 1982 restates this role played by the military in Article 118.<sup>58</sup>

Although Turkey has not ratified The ICCPR, it has been a member of the Council of Europe since its foundation in 1949. In 1954, Turkey

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<sup>55</sup> Pierse, Catherine, (1997), *Kurdish Rights: Cultural and Linguistic Rights of Turkish Kurds*, (Centre for International and Comparative Human Rights Law, Queen's University Belfast) 28.

<sup>56</sup> Earle, Edward Mead, (1925), "The New Constitution of Turkey," *Political Science Quarterly* 40 (1): 73–100.

<sup>57</sup> Rouleau, Eric, (1996), "Beyond Ataturk" *Foreign Policy* 103: 70–87.

<sup>58</sup> Gurbey, Gulistan, (1996), "The Kurdish Nationalist Movement," in Oslon Robert (ed.), *The Kurdish Nationalist movement in the 1990s*, 12. (The University Press of Kentucky); For the text of Article 118 see Appendix IV.

ratified the European Convention on Human Rights and has incorporated it into its domestic law since 1990. It has been a member of NATO<sup>59</sup> since 1952, the OECD<sup>60</sup> since 1961 and OSCE since 1973.

Turkey did not ratify the Council of Europe's Framework Convention for the protection of National Minorities or the European Charter on Minority Language. These instruments represent, to some extent, generous approaches to minority rights. Since the protection of minority rights is not within the purview of the ECHR, it does not guarantee minority rights as such. Hence, the ECHR remains the most important international human rights document Turkey is committed to.

## 4.2 The Republic's policy towards Kurds

The Kemalist approach of denying the existence of Kurds resulted in their being categorized as "Mountain Turks." Different measures have been applied to eradicate the Kurdish identity, such as: "the banning of traditional Kurdish costume, the Turkification of village names and various restrictions on the use of language were introduced."<sup>61</sup> The use of the words "Kurds" and "Kurdistan" were banned. Any references to these words were removed from Turkish history books and publications. In 1924, all Kurdish schools, organizations and publications were officially banned.<sup>62</sup>

Prime Minister Nihat Erim, in a speech in 1971, said: "We accept no other nation as living in Turkey, only the Turks. As we see it, there is only one nation in Turkey: the Turkish nation. All citizens living in different parts of the country are contented to be Turkish."<sup>63</sup> As General Hassan Arfa wrote in his study about Kurds: "You are Turks not Kurds; there are no Kurds in Turkey."<sup>64</sup> All Kurdish aspirations for a distinct identity have been repressed by the Turkish state, and many of the regional provinces are under a state of emergency. The region is the least developed economically. The Turkish repression of Kurdish dissidents and years of

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<sup>59</sup> The North Atlantic Treaty Organization.

<sup>60</sup> The OECD is the Organisation for Economic Co-operation and Development of thirty countries that accept the principles of representative democracy and free market economy.

<sup>61</sup> Robins, Philip, (1993), "The overlord State: Turkey policy and the Kurdish issue," *International Affairs* 69 (4) 657–676.

<sup>62</sup> Pierse, *Kurdish Rights*, 28.

<sup>63</sup> Short and McDermott, *The Kurds*, 7.

<sup>64</sup> Arfa, General Hassan, (1966), *The Kurds, an Historical and Political Study* (OUP, Oxford), 159.

official neglect and underinvestment has resulted in the poor educational, industrial, healthcare and transport infrastructure.<sup>65</sup> The rate of illiteracy in the Kurdistan region of Turkey is the highest in the country. About 78% of the total population above the age of fifteen were illiterate in 1980.<sup>66</sup>

### 4.3 The present Turkish constitution<sup>67</sup>

In the first constitution of 1924,<sup>68</sup> Article 2 states that “the official language is Turkish.” No reference is made to any of the non-Turkish elements of the republic, and according to Article 88: “The name Turk, as a political term, shall be understood to include all citizens of the Turkish Republic, without distinction of, or reference to, race or religion ....” The Kemalist ideology of a homogenous state was incorporated into this Constitution, and all harsh measures of assimilation were based upon it.

Kemalist nationalist policies persist in the present constitution of 1982. Article 3 of the Constitution states: “The Turkish State is seen as an indivisible entity. The language is Turkish.” This Article embodies “the fundamental principle of the Kemalist Turkish State, one which does not permit the existence of a national minority.”<sup>69</sup>

Article 26 states that: “no language prohibited by law can be used in the expression and diffusion of opinions. Written documents, printed materials, records, sound recordings, films or any other means of expression contravening this law shall be seized by court order.” The freedom of expression guaranteed in Article 28 also rules out the use of “language prohibited by law.” Thus, the constitution established a strong foundation for the prohibition of the Kurdish language and this principle has been further extended in many statutes.

In relation to education, Article 42 of the constitution states:

No language other than Turkish may be taught to a Turkish citizen as a mother language in education and teaching institutions. Foreign languages are to be taught in institutions of training and education and the rules to be followed by schools conducting training and education in a foreign

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<sup>65</sup> Sim, “Kurdistan: the Search for Recognition,” 16–18.

<sup>66</sup> Tonge, David, *Financial Times*, October 1, 1980, as cited in Sim, “Kurdistan: the Search for Recognition,” 18.

<sup>67</sup> The Turkish Constitution of 1982 available at <http://www.anayasa.gen.tr/1982constitution.htm> (accessed July 9, 2008).

<sup>68</sup> For the full text of the 1924 Constitution see: Earle, Edward Mead, (1925), “The New Constitution of Turkey,” *Political Science Quarterly* 40 (1): 73–100.

<sup>69</sup> Pierse, *Kurdish Rights*, 28.

language shall be determined by law. The provisions of international treaties are reserved.

The reference to international treaties in the last line refers to the minorities recognized by the Lausanne Treaty, which did not include Kurds.

#### 4.4 The Statutes

Article 28 of the Constitution has been validated by Law 2932 (1983) on the “Publication in languages other than the Turkish language,” which criminalized the use of the Kurdish language, even in private. The law that banned the “use of languages other than Turkish” was abolished in 1991 under the then head of state, Turgut Ozal. Ozal’s decision should be understood within the political context in which it occurred.<sup>70</sup>

The use of the Kurdish language remains a criminal offence according to other legislation. Article 81 of the Law of Political Parties bans the use of languages other than Turkish in any political speeches. With regards to education, according to the Law on Foreign Languages, the Turkish language is the only medium of education in schools in Turkey and special permission is required for education in other languages.<sup>71</sup>

Turkey has tried to extend its policy towards the Kurdish language abroad. In the European countries to which Kurds emigrated there was the opportunity to develop the language. Turkish embassies demanded that countries such as Sweden and Denmark stop teaching the Kurdish language to Kurdish immigrants and their children in school.<sup>72</sup> It should be noted that the same mother-tongue services also applied to the children from ethnically Turkish families. Turkey also worked to shut down the first Kurdish Satellite television channel MED-TV, which was licensed to broadcast from England.<sup>73</sup>

In recent years, the ban on the Kurdish language has loosened somewhat. However, airing programs in the Kurdish language was among the reasons behind a decision to close national and local radio and TV stations according to a Human Rights Watch report in 1999.<sup>74</sup>

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<sup>70</sup> Robins, 665.

<sup>71</sup> Pierse, *Kurdish Rights*, 32.

<sup>72</sup> Hassanour 2001, 2.

<sup>73</sup> Hassanpour 1995.

<sup>74</sup> Human Rights Watch, “Turkey: Anti-Terror Law used Against Peaceful Activists,” July 7, 2006, available at

In 2002, Turkish authorities cracked down on a campaign calling for education in the Kurdish language. According to the then Prime Minister Bulent Ecevit, “no concessions are possible on education [in Kurdish].” The same reaction was expressed by Prime Minister Recep Tayyip Erdogan in April 2008. In a meeting with Prime Minister Erdogan, the Diyarbakir bar President asked for greater reforms in Turkey’s South-East, including the right to study in the Kurdish language. The Prime Minister responded with the argument that “Education in another tongue does not exist anywhere in the world,”<sup>75</sup> despite the example in Iraq.

#### 4.5 The Role of the EU in the Reform Process in Turkey

The European Union (EU) remains the most important international actor in fostering respect for human rights in Turkey. Turkey is highly interested in joining the EU, and In October 2006, the EU opened negotiations for the full membership of Turkey. Such a decision will be based on the country's progress on economic and human rights reforms. Turkey's desire to be awarded full EU membership has placed its human rights record under scrutiny, particularly with regards to its policy on the Kurdish language.<sup>76</sup>

In recent years, as a part of the commitment to the human right's reforms driven by Turkey's quest to join the EU, there are fewer restrictions on the Kurdish language, and state broadcasting in Kurdish has even been permitted by the Turkish Parliament. However, in contrast, in May 2006 the Turkish authorities closed a Kurdish association “for conducting its internal business in Kurdish language.”<sup>77</sup> As the EU's November 2003 report highlighted: “although some progress had been made (mainly as regards radio and television broadcasting in languages other than Turkish), the alignment of Turkish legislation with the Community *acquis* was still limited.”<sup>78</sup>

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<http://hrw.org/english/docs/2006/06/07/turkey13521htm> (accessed May 15, 2008).

<sup>75</sup> Akyol, Mustafa, “Kurds, Turks, and the Tower of Babel,” April 12, 2008, available at <http://www.turkishdailynews.com.tr/article.php?enewsid=101603> (accessed May 6, 2008).

<sup>76</sup> McDowall, David, 21, “The Kurdish Question,” in Kreyenbroek, Philip G. and Sperl, Stefan (eds.), *Kurds A Contemporary Overview*, 21, (Routledge).

<sup>77</sup> Human Rights Watch, “Turkey: Anti-Terror law used against peaceful activists.”

<sup>78</sup> EU report, “Summery of Commission Report of 2003,” available at <http://europa.eu/scadplus/leg/en/lvb/e20113.htm> (accessed July 9, 2008).

Kurds in Turkish prisons are forbidden from using Kurdish in telephone conversations. The ban is according to Article 88(p) of the Justice Ministry's guidelines outlining rules for the "management of Criminal Execution Institutions and Execution Penalties and Security Precautions." This issue caused many complaints among Kurdish prisoners, some of whose families are unable to speak in Turkish.<sup>79</sup>

According to Amnesty International, three boys from the group are facing up to five years in jail. They were accused of violating Article 7/2 of the anti-terror law, which criminalizes "making propaganda for a terrorist organisation or its aims." According to Amnesty International, "the singing of *Ay Raqip*, a Kurdish historical anthem, cannot be regarded as a threat to public order, and the prosecution threatens the right to freedom of expression."<sup>80</sup>

The Kurdish movement in Turkey is looking towards the country's membership of the EU on the basis that this may lead to further reform and greater respect for human rights in the region. There is also the expectation that the membership: "may be able to exert greater pressure on the Turkish government to solve the Kurdish issue more quickly and by more peaceful means."<sup>81</sup> The requirement of a stable democratic Turkey by the EU has posed a challenge for Turkey. It no longer has the choice to deny or postpone a political solution to the Kurdish question.

Turkey did not ratify the ICCPR, but it is a state Party to the ECHR and its protocols. Despite the wide range of civil and political rights guaranteed in the convention, there is no obligation on states with regards to the minority's rights to language. As mentioned in the first chapter, the outcome of the widely refereed to Belgium linguistic case shows that the convention does not provide for the right to education in one's mother tongue.

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<sup>79</sup> Kart, Amine, "Kurdish still a 'mountain language' in Turkey prisons," *Today's Zaman*, June 22, 2008, available at <http://www.todayszaman.com/tz-web/detaylar.do?load=detay&link=145450&bolum=100> (accessed June 22, 2008).

<sup>80</sup> Amnesty International, "Turkey: Three Children on Trial in Case over Freedom of Expression," Index No. EUR 44/011/2008, 18/06/08, Turkey. Available at <http://www.amnesty.org/en/library/info/EUR44/011/2008/en> (accessed June 25, 2008).

<sup>81</sup> Marguiles, Ronnie, (1996), "Turkey and the European Union," *Middle East Report* 199: 27.

#### **4.6 Summary and Conclusion of the Case of Turkey**

It is clear and well established that Kurds in Turkey have been denied the right to use their own language, enjoy their culture and the right to a proper education. This was the result of the Turkish state actively implementing a policy of forced assimilation of its Kurdish population into the majority Turkish population. The use of the Kurdish language, even in private, was criminalized until 1990. Peaceful individual and organizational attempts to challenge the ban have faced imprisonment, persecution and even execution, as well as other inhumane treatments in line with a wide range of laws.

Various OSCE documents include minority rights to language. Turkey is party to OSCE and these documents, which though not legally binding are politically important. Turkey's legal and constitutional systems in the context of its obligations within the framework of OSCE and the Council of Europe are not adequate. The difficulties of reform are due to the Kemalist ideology of national unity at the expense of non-Turks, which is simply incompatible with the notion of plurality.

Speaking in Kurdish has not been illegal since 1991. However, the use of the Kurdish language in political communications or in parties meeting is still forbidden according to the Law of Political Parties. Theoretically, it is possible to broadcast in the Kurdish language and there is more tolerance concerning the use of Kurdish in the media. However, the position of private broadcasting in Kurdish is precarious. NGOs report many cases in which radio and TV stations have been shut down for allegedly threatening the country's unity or national security, or for supposedly providing propaganda for the PKK.

### **5. Conclusions**

This study has examined the right to language for Kurdish minorities in both Iraq and Turkey according to the international standards of minority rights to language. The main research question of this study has centred upon each state's differing policies in relation to the use of the Kurdish language in private, education, the media, publications and state administration.

There is no collective body of rights granted to minorities in international documents which are generally focussed on individual rights. Non-discrimination is the fundamental consideration in provisions for minorities. Article 27 of the ICCPR is a widely accepted and legally binding minority provision, granting members of minority groups the right

to use their mother tongue. However, it does not impose any positive obligations on the state to offer financial support for education in the minority language.

The European system is much more developed than the universal standards aimed at addressing the issues of minority rights, including the right to language. The realization that the granting of minority rights is an important element in ensuring stability is leading to greater standards being set for the promotion of minority rights. Turkey is a member state of the Council of Europe; however, its commitment to European minority rights standards remains doubtful in light of the treatment of its Kurdish minority.

The comparison of Kurdish minority linguistic rights in Turkey (a country committed to European standards) and Iraq (with no such obligations) makes it clear that the enjoyment of such rights is both political and legal. The internal and external dynamics are different in each country. In particular, the divergent processes of state formation in Iraq and the Republic of Turkey have led to differences in the extent to which Kurdish language rights are enjoyed in each country today.

The scope of language rights in Iraq is an outcome of the long history of the Kurdish struggle. Any achievement gained by the Kurds was the result of the central government finding itself in an unfavourable power balance with the minority, and the impossibility of winning the war in Kurdish areas, rather than any genuine commitment to international obligations or the desire to grant rights to the Kurds and to promote the Kurdish language. The long history of Arabization represented the other side of the Iraqi government's policy towards its Kurdish minority. The history of brutality in Iraqi governments' treatment of the Kurds is well documented by international organizations. However, since the 2005 Iraqi Constitution the Kurdish language is recognised as an official language of Iraq.

The Turkish state's policy of building a homogenous Turkish state has been far from successful, and has not brought an end to Kurdish demands for recognition and the right to use the Kurdish language. It also contributed to the growth of the extreme national movement, the PKK, which has gained popular support among Kurds.

Although Turkey did not ratify the Framework Convention or the European Language Charter, its desire to gain full membership in the EU has played a great role in the development of its policy towards Kurdish language rights. The Kurdish language is allowed both in private and in the media. However, there are still a wide range of laws that are used to criminalize and suppress the Kurdish language. For instance, the use of

Kurdish is still forbidden in political discourse. Education in Kurdish is also not allowed and Prime Minister Erdogan's rejection of demands for education in the Kurdish language casts doubt on Turkey's commitment to achieving reform.

**Note:** The Translations in the paper from Arabic are by the author.

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CHAPTER TWENTY-FOUR

HUMAN RIGHTS EDUCATION  
IN KURDISTAN, IRAQ:  
ENABLING TEACHERS TO CONTRIBUTE  
TO PROCESSES OF GENDER EQUALITY,  
DEMOCRACY AND DEVELOPMENT

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**Abstract**

This chapter examines the potential of human rights education (HRE) to contribute to democracy, development and social justice, specifically gender equality. We draw on documentary sources and fieldwork in Kurdistan, Iraq, including classroom observations and interviews with teachers and school inspectors. We examine tensions in implementing HRE, including those for policy-makers, juggling the demands of nation-building and its application through schooling and child rights. The UN Convention on the Rights of the Child confirms the right to HRE, intercultural understanding and learning to live together, to promote gender equity, and conditions which guarantee children's cultural and linguistic rights. Rights may operate in tension and be denied in family and societal contexts where conservative and patriarchal values prevail. We report on teachers' attempts to reconcile tensions, while facing limited resources. Human rights are taught without adequate consideration of the denial of children's everyday rights. Nevertheless, HRE is fundamental to democratic development, social justice and cohesion. Gender equality underpinned by human rights has the potential to enable girls' and women's self-empowerment and contribute to socio-economic progress. We propose principles for policy-makers and teachers to support effective HRE, good governance, sustainable development and quality education.

**Keywords:** human rights education, democratic development, gender equity, education policy

## 1. Introduction

This chapter examines the potential of human rights education (HRE) in schools to contribute to democracy, development and social justice, specifically gender equality, in the autonomous region of Kurdistan, Iraq. Across the globe, both international organisations and governments recognise the potential of education to contribute to the processes of democratisation and development. In post-conflict societies, programmes of citizenship education and HRE are often introduced with the express aim of developing skills for learning to live together and the peaceful resolution of conflicts. It is important therefore to understand how teachers and other education professionals understand HRE, so as to support them in implementing such programmes.

Following the 2005 Constitution of Iraq, which established Iraqi Kurdistan as a federal entity, the current unified Kurdistan Regional Government (KRG) administration was established. From 2006, the KRG has focused on developing Kurdistan's economy and infrastructure, and in 2009 turned its attention to educational reform. This reform extends the number of years of compulsory education from six to nine; introduces new learning objectives; and places greater emphasis on human rights and on democratic citizenship, making a specific commitment to gender equity. In implementing reform, we suggest that the KRG is not merely recognising the potential of education to contribute to immediate and longer-term economic and social development, but is also acknowledging the critical role of education in creating a just and sustainable democracy in which the rights of traditionally disadvantaged and vulnerable groups and individuals, including women, children and minorities, are protected.

Our understanding of education policy is that it is a dynamic process, in which teachers, administrators and students are actors. These various actors can support, subvert, or undermine policy-makers' original goals, both unintentionally and/or deliberately. Our programme of research therefore not only focuses on policy documents and textbooks, but extends to an examination of the perspectives of teachers, school administrators and school inspectors. Here, we focus on their experiences and perspectives and their understandings of democracy, development and human rights, specifically human rights and gender equality. We argue that these perspectives are critical for a proper understanding of the impact of education reform and its impact on young people, schools, families and

communities. If the KRG is to be effective in realising democracy, development and equality through education, then professionals' experiences, needs and understandings need to be taken seriously. Their insights enable us to identify appropriate strategies and plans to strengthen democratic dispositions among the young.

## 2. Education Policy Reforms in a Post-Conflict Context

Iraqi Kurdistan experienced considerable conflict and instability in the later twentieth century and early years of the twenty-first, resulting in a severely damaged infrastructure at home and a notable Kurdish diaspora across the globe. The conflicts include: a long history of border disputes with Iran; the Iran-Iraq war 1980–1988; and the *Anfal* genocidal campaign against the Kurds 1986–89, led by the Iraqi military under Saddam Hussein. The Gulf War broke out in 1991, followed by the Kurdish uprising, resulting in mass displacement and a subsequent humanitarian crisis. The uprising was followed by a brutal crackdown on the Kurdish population, a subsequent withdrawal of the Iraqi administration and military, and an Iraqi internal economic blockade. At the same time, the region suffered the consequences of UN sanctions and international embargo against Iraq during 1990 to 2003 (McDowall 2003; Yildiz 2004).

From 1991, the region gained *ad hoc* autonomy (Stansfield 2003), and in 1992 a regional government was established, following a closely contested and inconclusive general election. However, the Kurdish leadership was responsible for further difficulties. The rivalry between the Kurdistan Democratic Party (KDP) and the Patriotic Union of Kurdistan (PUK) resulted in a *de facto* partition of the region (McDowall 2003). By 1994, power-sharing agreements between the parties had broken down, leading to civil war, referred to in Kurdish as “brother killing brother” (*brakuzhi*). Open conflict between the KDP and the PUK was brought to an end under the 1998 Washington Agreement. Nevertheless, the conflict between the two dominant parties has shaped contemporary Iraqi Kurdish politics (Stansfield 2003).

Following the 2003 invasion of Iraq and subsequent political changes, the 2005 Constitution of Iraq defines the internal political, socio-economic and judicial autonomous governance of Kurdistan. The current unified Kurdistan Regional Government (KRG) operates a power-sharing agreement, introduced in 2009. The federal region, comprising three governorates, Erbil, Sulaimaniyah and Duhok, borders Iran to the east, Turkey to the north, Syria to the west and the rest of Iraq to the south. The region continues to feel the impact of instability in neighbouring

jurisdictions as well as ongoing tensions with the Baghdad government, fuelled by concerns over disputed areas, including Kirkuk. An opposition movement *Gorran* (Change) challenges power-sharing arrangements, placing substantive democracy on the political agenda.

It is within this complex post-conflict context that education reforms are being implemented. In the immediate pre-conflict era, Iraq had a lead position in the region in terms of school enrolment and completion rates (UNESCO 2010). However, Iraqi Kurdistan's infrastructure, including educational facilities, was adversely affected by the conflicts. Some fourteen years after the civil war there remains considerable pressure on the system, with insufficient school buildings and continuing and notable disparities in basic facilities between urban and rural areas. The KRG continues to face considerable challenges in providing appropriate facilities and meeting students' needs in a fast-changing socio-economic and political context.

The challenge for education policy-makers is not only to make good on the damaged educational infrastructure and ensure that schools are staffed with effectively-trained teachers. It is also to ensure appropriate educational measures support other societal priorities, such as anti-corruption measures and guarantees for the rights of women and minorities. Education needs to not only prepare young people for successful economic integration but also to enable them to play a full and active part in shaping the future society in accordance with democratic ideals that embody equity and social justice. In other words, the education system, and schools in particular, have a key role to play in strengthening democratic development and human rights.

The conflict impacted disproportionately on women and children and on educational opportunities and facilities in Iraqi Kurdistan. Before the conflict, girls across Iraq had lower school enrolment and attendance rates than boys (UNESCO 2003). Following the conflict, the majority of internally displaced persons (IDPs) were women and children, with some 50% of the most vulnerable children unable to access schooling according to UN reports (UN-HABITAT 2001; UNDG/World Bank 2005). In this respect, Iraq, including the autonomous region of Kurdistan, reflects a wider regional and global picture of discrimination and disadvantage faced by women and girls. Security problems may place girls at greater risk of gender-based violence, for example in travelling to school (Harber 2004), further impacting on school attendance.

In 2000, the world's nations promised to free people from extreme poverty and multiple deprivations. This pledge was formulated into eight Millennium Development Goals (MDGs). Two goals aim specifically to

address gender equality in education, recognising that significant challenges remain. MDG 2 intends to promote universal primary education and MDG 3 to promote gender equality and empower women (MDG 2000). Girls from the poorest households face the highest barriers to education with a subsequent impact on their access to the labour market.

The UN Girls' Education Initiative (UNGEI) aims to operationalize MDGs 2 and 3.<sup>1</sup> Effectively, education is recognised as a prerequisite for sustainable human development (UNGEI 2000; WEF 2000). Such initiatives are concerned with enacting international human rights standards on gender equality, including the Convention on the Elimination of all Forms of Discrimination against Women (CEDAW) (article 10) (UN 1979) and the Convention on the Rights of the Child (CRC) (articles 2 and 28) (UN 1989), which confirm the equal rights of girls and women in education.

The MDGs seek to realise both gender parity in education, though formal equality (parity in access and participation rates) and substantive equality (equal opportunity in and through education) (Subrahmanian 2005). In Iraqi Kurdistan, some steps have been taken to guarantee formal equality in access and participation rates. Since 2006, the KRG has put in place arrangements to enable young women not enrolled at the standard age, or who had their education disrupted, to continue or restart schooling. For example, the education policy states that schools or classes will be opened for accelerated learning programmes. Students should not be younger than nine for boys starting at grade 1 and not older than twenty, whilst girls should not be younger than nine starting at grade 1 and not older than twenty-four (KRG 2009, 13, Article 15).

This provision recognises the traditional disadvantage that girls experience in Iraqi Kurdistan (Griffiths 2010; UNICEF 2010, UNESCO 2011) and thus creates some flexibility by extending the age range within which women can complete schooling.

What we are interested in here is exploring the contribution that HRE can play in realising substantive equality, in education and through education, by examining professionals' understandings of human rights and HRE in the context of their specific responsibilities. The right to education is insufficient in realising gender equality, since it is concerned largely with equivalence in enrolment and completion rates between girls and boys. By focusing on rights in education (guaranteeing achievement

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<sup>1</sup> Launched in Dakar in 2000, UNGEI aims to support the realisation of girls' fundamental human right to education and emphasises the role of education in realising other human rights, such as labour market access, health care and freedom from gender-based violence.

and learning outcomes) and rights through education (the ability to utilise knowledge and skills to claim rights within and beyond the school) we can focus on issues central to girls' empowerment (Wilson 2003). This means recognising and overcoming current inequalities and instances of discrimination through an examination of learning content, teaching methods, assessment modes, management of peer relationships, and learning outcomes (Chan & Cheung 2007). The realisation of substantive equality requires a re-examination of how both girls and boys are educated.

### **3. Diversity and Gender in Iraqi Kurdistan**

It is widely recognised that schools both produce and reflect broader social norms and inequalities, related, for example, to poverty, structural inequalities, historical disadvantage, institutional discrimination of women and minorities, gender-based violence and traditional practices which harm or impact unjustly on women and girls (Tomaševski 2005). We present here a brief outline of Iraqi Kurdistan's demographic features, contextualising the struggle for human rights for both women and minorities. This struggle is taking place within a multicultural setting and within communities characterised by gender inequalities and growing economic disparities.

One significant challenge is the successful accommodation of diversity. Although the majority population is Kurdish, the region is also characterized by long-standing religious, ethnic and linguistic diversity. The Kurdish majority has for many centuries lived alongside smaller numbers of Assyrians, Chaldeans, Turkmenians, Armenians and Arabs. According to the KRG, the region has a population of around five million, of which more than 50% are younger than twenty. There has been no census, but estimates suggest Iraqi Kurds may comprise as much as 25% of the total Iraqi population (Yildiz 2004). A carefully crafted set of policies is needed to ensure all groups can claim their rights within the democratic framework.

There is also considerable religious and linguistic diversity in Iraqi Kurdistan. The majority of inhabitants, including Kurds, Iraqi Turkmenians and Arabs, are from the Sunni Muslim tradition. Within this grouping there is further diversity, with some individuals being observant and others adopting more sceptical or secular positions. The region also has populations of Assyrian Christian, Shiite Muslim, Yezidi, Yarsan, Mandaean and Sahbak faiths (Begilkhani, Gill & Hague 2010). KRG

official languages are Kurdish and Arabic. The two most widely spoken Kurdish dialects are Sorani and Kurmanji.<sup>2</sup>

Diversity is a highly politicised issue since territorial disputes between the federal Baghdad and Erbil regional governments, including Kirkuk, require political solutions which guarantee the protection of minority rights and interests. This diversity demands pragmatic solutions in the public sphere, including schools, where learners' rights and societal outcomes may be weighed against each other. For example, choices made to guarantee linguistic rights through separate schooling for various language communities will impact on the ways in which young people of the next generation are prepared (or not) for living together in a multicultural society.

The region's diversity has also increased as a consequence of inward migration, with the protection of migrant rights adding to the complexity of the picture. Many are new populations drawn to the region because of instability at home, while others are former inhabitants who fled past conflicts. They include IDPs, drawn from other parts of Iraq, refugees and migrants from neighbouring countries, and returnees, including highly educated elites, from the wider diaspora. In 2012, the KRG appealed to the International Organization for Migration (IOM) for more help in dealing with the needs of refugees fleeing war in Syria.<sup>3</sup> Child refugees may lack the appropriate papers to access schooling. Iraqi Kurdistan's rapid economic development is also attracting labour migrants from around the globe and irregular migrants (including victims of trafficking) whose undocumented status leaves them particularly vulnerable (IOM 2010).

In a society characterized both by patriarchy and post-conflict dislocation, one pressing issue is gender equity (al-Ali & Pratt 2011). Three inter-related challenges to realizing gender equality and the human rights of women and girls are: violence against women, traditional inheritance laws (Sharia law and other inheritance practices across faith communities which favour men), and low female school attendance rates.

Efforts to tackle violence against women, an issue highlighted both by local women's organisations and international non-governmental organisations (NGOs), has resulted in the establishment of women's shelters to support the victims of domestic violence (Begikhani et al. 2010). Since 2003, there has been some discussion in the local media of

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<sup>2</sup> Kurmanji is spoken in Duhok, while Sorani is used in Erbil.

<sup>3</sup> While some Syrian refugees are accommodated in a camp near Duhok, others are spread across the region, supported by families and communities (IOM, 2012).

society's failure to support such women, who although protected by law, remain vulnerable.<sup>4</sup>

Traditionally, married women are expected to receive support from their husbands. For this reason, many families, particularly in rural areas, consider it shameful to allow daughters to inherit property. While courts may rule in favour of women, it is still difficult for women to claim their inheritance. Under Islamic (Sharia) law, women are entitled to receive one third, while their brothers receive two thirds. In practice, even this unbalanced division is unlikely to occur.

Female school attendance is rising with the Duhok governorate recording one of the highest levels of attendance and lowest differential between boys and girls, both in Kurdistan and across Iraq (Griffiths 2010; UNICEF 2010). Local women's rights NGO Harikar (2011) reports that parents in rural areas are more prepared to send their daughters to school where there is a female teacher. Harikar quotes an education supervisor as confirming that the number of female teachers now exceeds the number of males in the Duhok governorate.

Where deeply-rooted inequalities persist between children, it is critical that the type of human rights education (HRE) offered at school is appropriate to their needs and supports them in claiming their rights. Acknowledging and addressing the roots of inequalities both within and beyond school is essential, whether these arise from gender-based discrimination or related to ethnicity, religion or other differences. Realising equalities in education requires more than translating international instruments into national policies or implementing reforms. It implies a holistic approach that includes policies and practices inside schools to empower students. Additionally, they imply opportunities to transform knowledge into the application of rights both in and beyond the school (Stromquist 2006). Such a holistic approach requires sincere commitment from policy-makers and other civil society actors concerned with improving education quality (Wilson 2003).

We have identified some pressing human rights concerns which impact on schooling and to which schools might be expected to respond. It is not difficult to make the case for HRE. However, in this chapter we argue that there is not just a pressing need for HRE, there is also a right to HRE. We turn now to this right, focusing specifically on its meanings within a multicultural context.

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<sup>4</sup> Women may lack access to shelters, which in any case may close due to lack of support. Some claim that shelters have allowed women at risk to be returned to their families.

#### 4. The Right to Human Rights Education

While the right to education is widely known, the concept of the right to HRE (Osler & Starkey 2010) is less so, even among education professionals and policy-makers. The right to HRE is set out in the 1948 Universal Declaration of Human Rights (UDHR) which underlines “the dignity and worth of the human person” and “the equal rights of men and women.” Article 26 specifies the aims of education, which include “the strengthening of respect for human rights and fundamental freedoms”; the promotion of “understanding, tolerance and friendship among nations, racial or religious groups”; and “the maintenance of peace.” This is the first official international articulation of the right to HRE. This right is confirmed and explicated in subsequent instruments, including the 1989 Convention on the Rights of the Child (CRC) (article 29) (Osler 2012). It is strengthened by the UN Declaration on Human Rights Education and Training (UN 2011).

CRC article 29 confirms the right to an education which promotes human rights, intercultural understanding and learning to live together, an education which promotes gender equity, and conditions which guarantee certain cultural and linguistic rights of parents and children. It stresses the obligation of the nation-state, as the ratifying authority,<sup>5</sup> to promote education for peaceful co-existence in their communities, the nation and the wider world:

States Parties agree that the education of the child shall be directed to ...  
The development of respect for human rights and fundamental freedoms ...  
[and] preparation of the child for responsible life in a free society, in the  
spirit of understanding, peace, tolerance, equality of sexes, and friendship  
among all peoples, ethnic, national and religious groups and persons of  
indigenous origin.

(UN 1989)

This implies that children have some engagement with learners from different backgrounds to their own and educational structures which enable a degree of integration between children from different ethnic, religious and linguistic backgrounds. It also implies that all children have the right to an intercultural education which recognises difference at the level of the community and the nation. Yet education cannot focus

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<sup>5</sup> In the case of Iraqi Kurdistan, responsibility for guaranteeing children’s rights in education lies with the KRG, since education is a devolved responsibility within the autonomous region.

exclusively on children's immediate communities or home nations since it also addresses global identifications and international understanding. This type of learning, where young people are enabled to learn to live together with difference at different scales has been termed "education for cosmopolitan citizenship" (Osler & Vincent, 2002; Osler & Starkey, 2003, 2005).

As Article 29 also notes, each child also has the right to an education that promotes: "respect for ... his or her own cultural identity, language and values, for the national values of the country in which the child is living, the country from which he or she may originate, and for civilizations different from his or her own" (UN 1989, article 29).

Thus, all children in Iraqi Kurdistan not only have the right to be educated for tolerance and diversity, but also the right to an education that supports their own cultural heritage and that of their families', as well as Kurdish cultural heritage and values. This education must be consistent with human rights principles. This is not a culturally relativist position where anything goes, but a critical examination of cultural norms within a broad human rights framework. Therefore, for example, harmful cultural practices which impact on girls and women would be challenged as failing to conform to human rights standards, as would cultural norms which gave another cultural group the status of enemy or inferior.

Education for tolerance and social justice, in line with the provisions for the CRC, cannot be fostered where there is complete educational segregation: "educating for peace will require states to mandate some kind of educational integration of schoolchildren from diverse ethnic, religious, cultural and language groups" (Grover 2007, 60). Currently, the child's right to education is frequently interpreted, legislatively and judicially, as a parental liberty right (to have a child educated according to parental wishes). Grover (2007, 61) argues that this tends to work against children's rights and that "the notion of minority education is frequently erroneously translated into *completely segregated school systems*" (our emphasis). She suggests (2007, 61) that: "the minority and non-minority child's legal right to free association (each with the other) in the educational context is frequently disregarded both by the legislature and the courts' in nation-states across the globe."

The international community has agreed a definition of HRE in the United Nations Declaration on Human Rights Education and Training. This suggests that:

Human rights education and training comprises all educational, training, information, awareness-raising and learning activities aimed at promoting universal respect for and observance of all human rights and fundamental

freedoms and thus contributing, *inter alia*, to the prevention of human rights violations and abuses by providing persons with knowledge, skills and understanding and developing their attitudes and behaviours, to empower them to contribute to the building and promotion of a universal culture of human rights.

(UN 2011, article 2:2)

The Declaration specifies that this should include education *about* rights; education *through* rights and education *for* rights. Education about rights includes knowledge and understanding of human rights norms and principles, implying that this education is both founded on and makes reference to international standards. Education through human rights includes learning and teaching in a way that respects the rights of both educators and learners and within schools, operating within education policy frameworks which guarantee rights. It addresses educational structures and young people's experiences of schooling. It has methodological implications, related to teaching and learning processes in which young people's participation rights are respected. Finally, education for human rights includes empowering learners to enjoy and exercise their rights and to respect and uphold the rights of others. This implies a transformational education, in which learners' own contexts and struggles for justice are considered and addressed and in which learners are empowered (Osler & Zhu 2011).

Clearly, realising social justice in education, including gender equity and the rights of minorities, means more than simply translating international instruments into national policies or implementing educational reforms. It means designing a curriculum in which learners are provided with knowledge about their rights, and equipped with the skills to claim them.

## 5. Our Methods and Fieldwork

In assessing the potential of HRE to contribute to social justice, democracy and development in the multicultural context of post-conflict Iraqi Kurdistan, we draw principally on fieldwork visits to two Iraqi Kurdistan governorates—Erbil and Duhok—between 2010 and 2012. In Duhok we engaged in classroom observations in two schools and later conducted interviews with teachers whose classes we observed.<sup>6</sup> In Erbil

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<sup>6</sup> The data was collected as part of a small-scale research and development initiative funded by the British Council's DelPHE programme (British Council 2010). A paper from this project, INTERDEMOCRATE (intercultural and

we interviewed a range of education professionals, including teachers, a school principal and education inspectors. We also participated in a focus group discussion (Yahya 2012).<sup>7</sup>

In total, fifteen professionals agreed to act as research respondents, with interviews taking place in July 2011 and January and February 2012.<sup>8</sup> Interviews were conducted in either Arabic or Kurdish, transcribed and then translated into English. The Duhok teachers were working in two schools as part of a two-year study and contact was established through a mix of official channels and personal contacts (Ahmad et al. 2012). The Erbil respondents were a convenience sample, found through personal contacts and snowballing methods, with interviewees suggesting colleagues or friends willing to participate. This method proved appropriate since it was difficult to make personal contact in Kurdistan.<sup>9</sup>

All the interviews were conducted by a researcher familiar with local cultural norms and practices. In Duhok our respondents were approached by colleagues from the University of Duhok, with whom they had been working for some months and whom we characterise as having insider positions. In the Erbil district, interviewees were interviewed by one of us (Chalank) who were familiar with local cultural norms having grown up in the city, but whose secondary and higher education has been in Europe.<sup>10</sup>

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democratic learning in teacher education), has been published by Ahmad et al. (2012). The project builds on a long-standing partnership between Buskerud University College, Norway and Duhok University, Iraq. We are grateful for the support of all project members, particularly the principal investigator, Dr Lena Lybaek and project members Niroj Ahmad, Adnam Ismail and Nadia Zako for data collection.

<sup>7</sup> Chalank Yahya would like to thank the Falstad Centre, Norway, for the award of a scholarship which enabled her to complete a second round of data collection for her MSc thesis in February 2012.

<sup>8</sup> Of the fifteen respondents (seven female and eight male), five elected to answer the questions in writing, rather than through a face-to-face interview. Although we stressed we wanted professionals' own opinions, and guaranteed anonymity and confidentiality, it appeared that these five were, to a greater or lesser extent, ill-at-ease with an interview format, preferring to give considered and 'correct' answers, as they saw it.

<sup>9</sup> Most schools lack modern communication tools, such as websites and public email.

<sup>10</sup> This gave Chalank both insider and outsider status, with research participants frequently making reference to shared cultural reference points in the interviews, but also, according to her, as a young woman educated abroad, to particular respect and courtesies which cut across commonly observed standards between the generations, where generally such courtesies are shown to those older than oneself.

Our fieldwork is informed by our study of documentary sources, notably the reform of the basic and secondary schools (KRG 2009) and the human rights textbooks, for which we have had professional (non-official) translations made.

## 6. Professionals' Perspectives

Here we report on respondents' understandings of HRE and specifically their observations on diversity and gender equality. Since teaching for gender equality and diversity is taking place within a context of education reform, we also invited our respondents to reflect on this, with some focusing on broader social issues, and some on the relationship between active student-centred teaching methods and education for human rights, citizenship and democracy. Table 24.1 below lists the professionals interviewed. All names are pseudonyms, to protect the respondents' anonymity.

**Table 24.1. Research respondents: professional roles and characteristics**

No.	Participant	Professional role	Gender	Religious tradition/ ethnic background
1	Kamaran	General school inspector	M	Muslim/Kurd
2	Kawthar	School inspector—student counselling	F	Muslim/ Turkmenian
3	Foad	Principal—urban model school—and school inspector	M	Christian
4	Asem	Teacher—Arabic, grades 7–12	M	Muslim/ Kurd
5	Hassan	Principal rural school*	M	Muslim/ Kurd
6	Sarkawt	Acting principal rural school	M	Muslim/ Kurd
7	Payman	School inspector—social studies and HRE, grades 1–6	F	Muslim/ Kurd
8	Fawzi	Teacher—social studies and HRE, grades 7–10	M	Muslim/ Kurd
9	Sawsan	Teacher—social studies and HRE	F	Christian

10	Azad	School inspector— social studies and HRE	M	Muslim/ Kurd
11	Sherko	Teacher—social studies and HRE (grade 5)	M	Muslim/ Kurd
12	Ahlam	Teacher—social studies and HRE, grades 7–9	F	Muslim/ Kurd
13	Halat	Teacher—social studies and HRE, grades 7–9	F	Muslim/ Kurd
14	Tara	Teacher—English, up to grade 6	F	Muslim/ Kurd
15	Loreen	Teacher—civic education and HRE (grade 5)	F	Muslim/ Kurd

\* This is the only school in which our teacher respondents worked where boys and girls are taught separately, attending different shifts.

### **Understandings of human rights education**

Generally speaking, respondents place considerable emphasis on the place of human rights in creating a just and sustainable society. They recognise the importance of human rights but express concerns both about understandings of human rights in contemporary Kurdish society and about teachers' limited understandings and lack of training in human rights education.

When it comes to the subjects of human rights education and democracy, I do not have very close knowledge of them. Only that my daughter has taken these subjects, and from my perspective, it's important to teach these subjects to school students.

(Kamran, school inspector)

In general, not only in Kurdistan, but across the Middle East, we are not aware of our rights. We do not really understand what is meant by human rights. Therefore, a good awareness campaign is needed..

(Kawthar, school inspector)

I do not think that the subject [HRE] is given the attention and development it deserves. I have not noticed an immediate positive reaction from teachers and pupils ... It should be included in all grades, either directly or indirectly, as it is very important for our teachers and pupils to

behave according to human rights standards ... Most importantly, it's not enough to learn only about human rights on paper, there should also be possibilities to practice them in reality.

(Asem, Arabic teacher)

Although Kamaran is a general school inspector, responsible for nine schools, he admits he knows relatively little about HRE and citizenship as taught in those schools, even though he feels they are important. This viewpoint is echoed by others who criticises the minimal coverage of human rights in the curriculum and who stress the limited societal knowledge of human rights.

A number of respondents suggest that for HRE to seem relevant, both children and adults in Kurdistan need to be in a position to claim their rights. Among several respondents, there is an implied criticism of the Kurdish administration in not fully securing the rights of citizens and enabling them to practice these rights. There is a general impression that human rights are important but that both human rights and HRE are ill-understood.

Children learn about authority, but the obligations of authority figures to children (parents, government) in upholding rights are not addressed. Kawthar observes:

It is not enough only to teach our children about rights in books. As individuals we need to be able to practice these rights outside schools as well. However, in our reality, there are many rights that we know of and yet we cannot claim. Therefore, it would be better that these subjects are taken up to the political level and activated through laws.

A number of individuals link the need for HRE to the Kurdish struggle for human rights and political recognition. This concern focuses on the need for children to know Kurdish history and to understand the fragility of a society when the rights of minorities are overlooked:

Of course, human rights and HRE are very important to know about and be aware of. Especially, in our society and due to the past experiences of conflicts and violations, we need to be educated about our rights ... Each of us needs rights and also to understand our rights and know how to claim them. However, HRE as a subject in our education system does not have as much emphasis as it should. We lack expertise in this discipline and we do not have specialized teachers ... For the time being, social studies teachers are required instructed to teach this subject ... The question remains: to what extent are our current teachers able to convey the human rights message to pupils?

(Payman)

Thus, despite the new emphasis on HRE in the 2009 curriculum reform, the new subject lacks trained teachers. The respondents confirmed our impression that the textbooks (particularly for older students) are dry and uninteresting, containing long extracts from international instruments, such as the Universal Declaration of Human Rights, but with little or no guidance or explanation as to or what they mean or how they might be made accessible and relevant to students. Respondents suggest the emphasis is on knowledge not on developing human rights dispositions or values:

The content is very dry and very limited. It would have been better if HRE was not simply regarded as just another subject in the curriculum, which is examined to test the knowledge of pupils.

(Ahlam)

This subject should be designed and taught in all grades at school, but according to the pupils' age and needs. For example, as a child in grades 1–6, you have specific rights/needs that need to be provided by school and society. If they do not learn about HRE and their entitlements at a specific age, then they will not understand or be aware they have these rights ... It's important for them to be aware of their rights and to be able to demand them.

(Kawthar)

In some institutions, HRE was so low-status that schools might adopt corrupt practices to hide the fact they were neglecting the subject:

Some HRE teachers ... will make the lesson available for other subjects, such as English or mathematics ... In such cases, HRE topics will be limited to a few classes before the exams and all students will be graded as if they have mastered their rights very well!

(Fawzi)

### **Practising HRE**

In order to bring the subject to life, a number of our respondents suggested more active learning methods, including group work, the use of stories and the involvement of NGOs:

[With active methods] ... the student will understand the topic and s/he will never forget it because s/he takes part in explaining, presenting and discussing.

(Tara)

When I use role-play, the student takes over the role of the teacher and explains the topic. This will make him/her feel responsible and will improve performance

(Loreen)

Foad works as a school principal and school inspector, observed how some teachers feel HRE should not be examined because a student should not fail in something as fundamental as human rights. He strongly opposed this argument, pointing out the importance of the subject matter in learning about responsibilities and rights.

### **Teaching rights where rights are denied**

One specific challenge raised by a number of respondents was that of teaching rights in contexts in which rights are denied, both in society and in school. Efforts to reform the education system have occurred rapidly, and in many places, school building programmes and the provision of basic facilities have not kept pace with demand.

Right now, the [reform] process is being implemented with many shortages, which has caused chaos and confusion amongst educational professionals, students and their families ... You hear now of the current pupil demonstrations that are going on in various towns/regions in Kurdistan. This is because of a lack of understanding and because of [failings in] the system ... As a reaction we have been witnessing pupils demonstrating on the streets for a few years.

(Payman)

One school principal spoke of being instructed by his superiors to drop an investigation into a teacher's professional behaviour, and thus required to turn a blind eye to equality and justice:

Human rights norms should apply to professionals as well as pupils. Very often, you are forced to drop taking it to the next level, because someone on a higher level instructs you to do so. This contradicts genuine implementation of human rights rules and equality.

(Sarkawt)

Equally, professionals saw it as important that HRE was not restricted to children but extended into communities. One suggested that HRE has been introduced merely to conform to international standards, rather than with commitment and clearly articulated educational and social justice aims:

I don't think HRE fits with our reality. Our society is still based on a tribal/agricultural system, which is not ready to digest the message behind human rights norms ... including HRE in curriculum, I think it has more of a political benefit than a genuine social one. It is more to show to the West that we adhere to human rights norms and have included that in our schooling, without first focusing and addressing real societal problems and injustices.

(Sawsan)

In order to make HRE content more meaningful, we need to add more practical activities. For instance, bring pupils to universities, visit different NGOs, and show documentary films ... and stories about human rights ... It's important to make a link between HRE and the existence of [human rights] organisations to make pupils aware of the need to work on human rights issues in our region.

(Fawzi)

For a better outcome ... the subject needs to be reviewed. HRE teachers need to be continuously trained ... It would be good to have HRE professionals from local universities and even abroad to provide teacher training.

(Azad)

While the examples above relate largely to broader societal denials of human rights, another challenge facing teachers is responding to children who have direct experience of human rights abuses. A number of teachers raised this. The example below illustrates how making HRE relevant to children's everyday lives may empower teachers to raise difficult issues of child abuse. It also illustrates how giving the child rights of expression in class (participation rights) may serve to guarantee children's protection rights:

Sometimes, pupils give examples human rights violations they have ... been experiencing themselves at home, such as parents beating them or verbally undermining their personality ... I have given my students freedom to participate, including time to reflect upon the topic and discuss examples ... Sometimes, a pupil will come to say they have understood the content, but this is not practised at home. In such situations, we inform the principal and school board, investigating the home situation and inviting parents to talk to them ... HRE can contribute in building up the student's personality. Many young pupils are not taking seriously at home. Their rights may be neglected, denied or even violated. Some may grow-up in fear and not dare to speak up.

(Sherko)

### **HRE, gender and diversity**

Among our respondents, we observed a preference for talking about gender issues rather than ethnic or religious diversity in reflecting on the potential of HRE to contribute to social justice and learning to live together. Although a number of respondents made direct reference to past conflict, few elaborated on it. One teacher adopted what we have termed a “paradise narrative” (Ahmad et al. 2012) whereby she denied past conflict within Kurdistan:

In our society co-existence exists from time immemorial. There is no discrimination between nations, races and religions and history testifies to this ... We have always been brothers who love and tolerate each other, in class, in the neighbourhood, in the village and in the city.

(Tara)

Such claims form part of a wide political discourse in Iraqi Kurdistan in which the recent conflict among Kurds is denied. We would argue that this discourse, while undoubtedly part of the rhetoric of Kurdish nationalism and shared political destiny, remains deeply problematic within the context of schooling, since it denies realities to which children will be exposed, namely past conflicts and on-going inequalities.

By contrast, other teachers responded pragmatically to diversity. Halat proposed asking children questions to find out what they knew about their multicultural, multi-faith society and about different religions and cultures “because the more information a person has the stronger his/her personality and ability to express him /herself.”

Kamaran spoke at length about his understandings of schooling and gender equity and teachers’ responsibilities within this:

There is no doubt that our society is a *closed* society, strongly based on customs and traditions, where religion plays a vital role as well. Therefore, the only way, in my view, in bringing these two sexes closer to each other and in enhancing gender equality is via school. Our society is a male-dominated society. Men are having the power and women are looked down on to a certain degree ... Schools play an important role in this process through enhancing general knowledge about gender equality and its advantages in developing society ... I try to emphasize a sense of responsibility in each teacher and their role in changing the cultural mentality towards equality perspectives concerning gender relationships.

Nevertheless, like a number of other professionals, he did not underestimate the scale of the challenge and the considerable conservative forces undermining equality initiatives, meaning that education in school

needs to be complemented by a comprehensive strategy addressing society more broadly:

We need to acknowledge the reality that tribalism plays a big role in our Kurdish society, in combination with traditions and religion, which all work against the idea of gender equality. Women are viewed as second-class citizens and sometimes used as a commodity to be exchanged in marriage.

Most respondents felt that schools had a key part to play in realising gender equity, although few were able to articulate the precise contribution of HRE. However, many were aware of how the move towards mixed-sex schools had led to a loss of community confidence, and some had reservations about girls and boys being educated together:

School has a major role in establishing positive gender relationships, because, if children from a very early stage are used to study and play together, regardless of sex differences ... it will become normal for girls and boys to interact, communicate and study together.

(Kawthar)

Gender equality will have to start at home. Parents need to treat their boys and girls equally without any differences ... But parents interfere in school business ... Very often we hear parents' complain about the fact that their daughter is placed next to a boy in class.

(Sherko)

Our culture is not ready yet in mixing these two sexes at this sensitive age [teenage] period. I can bring you to mixed sex [classes] and just look at the wall in class; it is all filled up with love messages between boys and girls ... They do not understand yet to treat each other respectfully as a sister-brother or as just friends. As a result the numbers of mixed-sex schools are decreasing day after day. The staff are sometimes unable to control the situation and many parents are against the idea to send their daughters to a mixed school, even if it is close to home.

(Azad)

Mixed-sex schooling should begin in pre-school. In the secondary school or college, it is already too late ... Ours, the only mixed-sex school in this district, will be closed down next year and boys and girls separated ... There are no big differences in gender relationships between rural and urban areas. To the contrary, in some rural areas, girls and boys are more open to interact. For example, in the springtime, it is normal as a group of girls and boys to have a picnic together. The agricultural-based system has made the interaction and working together a normal habit. Although in

urban areas we find more educated people, gender relations are not as free as one would imagine.

(Hassan)

Hassan was not alone in noting anomalies in gender relations, whereby in certain contexts, boys and girls are, in fact, free to mix:

We have still many families that are against the idea of sending their children to a mixed-sex school ... this is a matter of getting used to the idea. In our Kurdish culture, it is not acceptable for a girl to look at a boy ... yet it's normal at a wedding to dance hand-in-hand with a strange boy. The latter practice is common and accepted in our culture.

(Fawzi)

Yet it appears that adult professionals were in some cases perpetuating problems by their own reluctance to engage on the basis of equality with their opposite sex peers at work, preferring the familiarity of same sex social relationships:

There are many schools, where the female and male teaching staff have two separate teachers' rooms. If this is still a dominant understanding amongst teachers, how can they address gender equality with their pupils or support interaction between the sexes?

(Payman)

### **Religion, values and gender**

During his interview, Fawzi told a shocking story of a student who committed suicide the day after her brother prevented her from joining her classmates on a school visit. He suggested that the case raised fundamental questions about whether society recognised the capability of girls, as well as questions about home-school communications in this particular instance:

Yesterday, a young female student, aged between 16–17 years, committed suicide by burning 65% of her body. She did it because her brother didn't allow her to join her class in making a particular out-of-school visit ... This is ... a classic example of lack of communication and cooperation between schools and families in grasping curricula activities ... Gender equality is closely linked to the cultural understanding on the role of girls and boys, which is not based either on our religion or on science ... It's an example of inaccurate perceptions of our girls' capacity and behaviour.

Fawzi also expressed concerns both about the power of tribalism and the influence of mullahs in preventing the realisation of gender equity in Iraqi Kurdistan:

The biggest limitation is the tribal mind-set that controls society. It's not open for the modernisation we so strongly need ... Another important issue is the lack of well-educated religious personalities ... We have many mullahs that play an important role in our society, but there are very few that are well-educated to understand the real meaning of the Qur'an. Our religion allows equal rights for women and men, but this is not understood properly. To be honest, we need a mind-set that is ready for religious reformation according to societal needs, which is allowed in Islam. I'm not talking about reducing prayer from five times to three, but we need to understand that time when our Prophet was living was very different from today's age.

Swasan, herself a Christian, agreed:

[We need to] link gender equality to our religions, which stress the need for equal treatment. Even Islam highlights the need for gender equality. I was just now teaching history and our topic was the history of Islam, where the Prophet Mohammad highlights gender equality.

Finally, we observe that few, if any, of our respondents appeared familiar with the CRC and child rights were absent from the textbooks reviewed. Although it appears that gender-related issues were more comfortable for our respondents to discuss than ethnic diversity, a number of respondents suggested discussing anything that might be construed as political, religious or gender-related was problematic:

Misunderstandings happen very easily in our community ... For example, if we would talk about political, religious or gender-related issues. Such class discussion may be counterproductive. For example, if we talked about Valentine's day in class, it may lead to misunderstanding ... even their families might interfere ... These things make you conscious to avoid opening any gender-related topics in the classroom.

(Ahlam)

## **7. Ways Forward: Principles and Strategies**

We have seen how rights operate in tension, and some may be denied in family and societal contexts where powerful conservative and patriarchal values prevail. Textbooks in Iraqi Kurdistan overly rely on the UDHR and other international instruments to teach human rights. This knowledge-

based and dry approach fails to engage with societal realities, still less children's everyday lives. Powerful conservative forces, such as religious leaders and tribal authorities, combine to undermine efforts to promote gender equity. While gender appears to be an often sensitive area for discussion, religious and ethnic diversity seems even more off limits.

In a fast-moving climate of economic development and social change, it is important that Kurdistan is able to make best use of human resources, especially the contribution women and girls can make to strengthening democracy and development. HRE can contribute by enabling all citizens, young and old, to see how they can benefit by applying principles of solidarity and equality. Gender equality is not just about women and girls. First, we would argue, HRE needs highly skilled and well-trained teachers. Teachers' professional education needs to incorporate child rights as an essential feature of the curriculum.

It is the responsibility of the government to uphold human rights, but this can best be done with the cooperation of civil society. Any programme of teacher education might therefore be best implemented in cooperation with local and international NGOs and specialist trainers. Teachers rely heavily on textbooks and so these need urgent revision.

One critique of current approaches made by professionals is that HRE in school is taking place in a vacuum, without sufficient attention to multidimensional measures beyond the school to raise awareness about the rights of girls (and minorities). Such a multidimensional approach might make fuller use of TV and other local media to influence families and invite them to play a greater part in supporting schooling. Such an approach might also indirectly counter conservative religious forces who promote fear that women's human rights are counter to religious teaching.

Our theoretical work suggests that HRE necessarily contributes to learning to live together in contexts of religious and ethnic diversity. Here, current policies to protect minorities' linguistic rights work against children's rights to learn to live together by practising living together at school. This is a complex issue but the development of model or laboratory schools, linked to universities, which address both linguistic rights and learning to live together, might go some way to finding a solution to this complex issue.

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**PART IX**

**POLITICS**

## CHAPTER TWENTY-FIVE

# THE FEASIBILITY OF AN INDEPENDENT KURDISH STATE IN IRAQ

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### **Abstract**

The literature on the case of Kurdistan Region of Iraq mainly focuses on the historical aspect of the Kurds' struggle against successive Iraqi regimes, and it lacks a solid theoretical and analytical framework for examining the feasibility of an independent Kurdish State in Iraq. The main objective of this study is to provide such a framework for the Kurdish case in Iraq. This chapter focuses on two main issues: the right of the Kurdistan Region of Iraq to become independent and the feasibility of achieving independence. To examine the right of independence, this study focuses on the KRI case in light of moral theories of secession, theories of self-determination and of recognition in international law. To examine the feasibility of such a state, this study critically analyzes the internal and external (geopolitical) dimensions surrounding the KRI. It concludes that, theoretically, the Kurdistan Region of Iraq has the right to self-determination and to declare independence, however, this right is deterred by geopolitical circumstances. The feasibility of independence therefore greatly depends on surmounting those geopolitical barriers.

**Key words:** Self-determination, Sovereignty, Kurdistan Region of Iraq

### **1. Introduction**

In an ideal world, a unified independent Kurdistan would exist, but international politics has not created an ideal world. Kurdistan, the land of approximately forty million Kurds, is the world's largest nation without a

state. The idea of independence is rooted deeply in the hearts and minds of Kurds, who have struggled throughout their history to gain independence, yet internal, regional and global factors have always ruled out the feasibility of an independent Kurdish state. The partition of Kurdish lands among Turkey, Iran, Iraq and Syria has proved to be a formidable obstacle in attempting to create a unified Kurdish state. Thus, the analysis of this chapter concentrates on only one part of the divided Kurdistan, the Kurdistan Region of Iraq (KRI).

The implementation of the no-fly zone by the United Nations Security Council in 1991 enabled the Kurds in Iraq to oust Saddam's regime from the KRI. The KRI, despite a two-year fratricidal war between the two major parties, had been able to sustain itself as a *de facto* region from 1991 to 2003. Following Operation Iraqi Freedom in 2003, the newly ratified constitution of Iraq recognized the KRI as a *de jure* federal region within the new Iraq. The Turkish parliament's refusal to join the US-led coalition of Operation Iraqi Freedom and its refusal to allow the coalition troops to use Turkish land as a base for military attacks on Iraq boosted the KRI's strategic significance in relation to the U.S. interests in the Middle East.

This growing strategic importance and the considerable and steady economic, political and security developments in the KRI have encouraged the desire for permanent secession from Iraq to a climax. The ambitions for independence were evidenced in two unofficial referendums that were conducted by the Referendum Movement in Kurdistan (RMK). In 2004, the RMK gathered 1.7 million signatures in favour of independence, and in 2005 the RMK held an unofficial referendum in the Kurdistan Region on the idea of secession from Iraq. An overwhelming 98.8% of the Iraqi Kurds voted for seceding permanently from Iraq (Rafaat 2007, 278–279). Several factors have affected the translations of these wishes into concrete actions and ultimately reality. Disregarding the Kurds' overwhelming and unwavering support for secession from Iraq, the objective of this chapter is to provide a solid theoretical and analytical framework that inquires into the possibility of an independent Kurdish state in the Kurdistan Region of Iraq.

The main question to be addressed is: "How feasible is an independent Kurdish state in Iraq?"<sup>1</sup> In other words, can the Kurdish Region of Iraq become independent? This question begets two sub-questions: First, what are the internal and external dimensions/challenges of declaring

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<sup>1</sup> Feasibility is defined as the capability of acting as an independent state in the current international system.

independence for the Kurdistan Region of Iraq? Second, what are the implications of declaring independence to the neighbouring countries?

To measure the feasibility of independence, this study examines two aspects (one theoretical and the other legal) of the KRI case. The theoretical aspect includes both theories of secession and the legal argument on self-determination. This study therefore looks into moral theories of secession and focuses on articles related to self-determination in the UN Charter, the international covenant on civil and political rights, UN General Assembly resolutions on self-determination, criteria of statehood, and theories of recognition in international law. The theoretical argument is applied to the case of the KRI.

The political aspect of the KRI focuses on the internal and external dimensions pertaining to the case. In order to explain the KRI case in a broader context, this study uses East Timor, Kosovo and South Sudan as comparative case studies.

## **2. Literature Review**

The literature focusing on the Kurdistan Region of Iraq has burgeoned since 2003. Romano (2006) and Galbraith (2006) focus on the Kurdish Nationalist Movement and the challenges of Kurdish nationalists to the Iraqi state. They also shed some light on the current political situation between the Iraqi fractions, Kurds, Arab Sunnis, Arab Shias and the United States policy regarding the three fractions. Yildiz (2004) provides an historical background of the Kurdish struggle, and examines the right of Kurds to self-determination. Gunter (2008), McDonald and O'Leary (2007) and Tahiri (2007) provide an historical overview of the developments of the Kurdish case in Turkey, Iran, Iraq and Syria, while Astarjian (2007) highlights the Kirkuk issue as the main problem regarding the KRI.

Bois (1966), O'Shea (2004), Gunter (2004) and McDowall (2005) provide historical analyses on the case of the Kurds beginning with the partition of Kurdish lands in the sixteenth century between the Ottoman and Safavid empires. The authors also inquire into the roots of conflict between the Kurdistan Region of Iraq and successive Iraqi central governments since the creation of the state of Iraq. Natali (2005) elaborates the evolvement of the Kurdish identity in Turkey, Iran, and Iraq, while Zebari (2003) examines the circumstances that led to the humanitarian intervention in Iraqi Kurdistan and the creation of a safe haven following the Kurdish exodus in March 1991. Rafaat (2007) uncovers the importance of the KRI to the neighbouring countries, and

argues in favour of the KRI's right to independence. Rafaat, however, fails to discuss the geopolitical concerns and lack of political support for independence, and underestimates the importance of the neighbouring countries to the KRI.

The main focus of the literature on the KRI is the historical struggle of the Kurds and their right to self-determination. The literature fails to address the theoretical and political arguments of the issues pertaining to the KRI case. This research, therefore, attempts to provide a necessary theoretical, legal and political framework to the case. Moreover, little has been written on how neighbouring countries might react should the Kurdistan Region of Iraq declare independence. Additionally, extant research has not addressed or investigated the United States' objectives in this region. This chapter therefore attempts to thoroughly analyze the implications of declaring independence. Lastly, political arguments on sovereignty and self-determination are rarely analyzed. Why are nations with similar causes treated differently? One of the objectives of this study is to further explore the political argument of sovereignty and self-determination.

### **3. Theoretical Framework**

#### **The Right of Self-Determination in International Law**

Under the UN charter and resolutions, the right of self-determination has evolved considerably. The former Soviet Union's proposal on the right of self-determination during the San Francisco Conference in 1945 was later articulated in Articles 1 and 55 of the UN charter. These articles emphasized the principle of equal rights and self-determination of "people."

Attempting to stop the "bloodshed and war" that had resulted from "peoples'" struggle to exercise the right to self-determination, the UNGA issued Resolution 545 (VI) of February 5, 1952. The UNGA's declaration on granting independence to colonial countries and peoples greatly furthered the right to self-determination. The UNGA Resolution 2160 (XXI) (b) of November 30, 1966 reaffirms the prohibition of the use of force against people seeking self-determination. The UNGA Resolution 2625 (XXV) of October 24, 1970 reaffirms the right of "all peoples" to self-determination. Article 1 (1) of the two International Human Rights Covenant: International Covenant on Civil and Political Rights and International Covenant on Economic, Social and Cultural Rights clearly state: "All people have the right to self-determination. By virtue of the

right they freely determine their political status and freely pursue their economic, social and cultural right” (ICCPR 1966).

In the wake of Kosovo’s unilateral declaration of independence, in response to the UNGA’s request, in October 2010 the International Court ruled that “general international law contains no applicable prohibition of declarations of independence. Accordingly, it concluded that the “declaration of independence of 17 February 2008 did not violate general international law” (ICJ 2010).

### **Moral Theories of Secession**

Allen Buchanan (1997) classifies all normative theories of secession as Remedial Right Only theories or Primary Right theories. Remedial Right theories affirm that a group of people has a general right to secede if it experiences injustice, if the physical survival of its members is endangered by the state, or if its territory is invaded unjustly by the state (Buchanan 1997). Remedial Right Only theories also assert that a group of people can have a special right to secede under three circumstances: (1) if a state grants the right to secede to a group of people; (2) if the constitution of a state recognizes the right to secede, and; (3) if the contract that led to the establishment of a new state out of formerly independent units clearly legitimizes potential secessions in the future (Buchanan 1997). Remedial Right Only Theories grant a special right to secede if one or more of the preceding factors are met.

Unlike Remedial Right Only theories, Primary Right theories affirm that “certain groups can have a (general) right to secede in the absence of any injustices” (Buchanan 1997, 35). Remedial Right Theories set substantial restrictions on the legitimacy of the right to secede, yet they do not disregard secession utterly; they legitimize the right to secede only when the nation suffers from past injustices. By doing so, Remedial Right Theories, according to Buchanan, do not generate a grave threat to the “territorial integrity” of sovereign states. Thus, they are more likely to be integrated into international law (1997). Conversely, Buchanan argues that Primary Right Theories are less likely to be incorporated into international law, because they “authorize the dismemberment of states even when those states are perfectly performing what are generally recognized as the legitimating functions of states” (1997, 45).

### **Applying Remedial Right Only Theories to the Kurdistan Region of Iraq**

Due to the shortcomings highlighted by Buchanan in the Primary Right theories of secession, this section applies the Remedial Right Only theories to the status of the Kurdistan Region of Iraq. According to Buchanan's interpretation, the essence of Remedial Right Only theories is that a "group of people" can exercise the right to secede if it has suffered "certain injustices." "People" and "certain injustices" are the two necessary conditions for secession under the Remedial Right Only theories. In order to apply the theory to the KRI status, one needs to elaborate on the meanings of a "group of people" and "certain injustices." Buchanan finds five characteristics that comprise a group, a nation or a people: "a common culture, history, language, a sense of its own distinctiveness, and perhaps a shared aspiration for constituting its own political unit" (1997, 38).

Buchanan's definition of "a nation or people" needs to be applied to the Kurds. "Some scholars believe [Kurds] are the descendants of various Indo-European tribes, which settled in the area as many as four thousand years ago. The Kurds themselves claim to be the descendants of the Medes" (Gunter 2008, 3). A reasonable estimate is that approximately twenty million Kurds reside in Turkey, 6.5 million in Iran, 4.5 million in Iraq, and 1 million in Syria (Gunter 2008, 2). The Kurds are native inhabitants of their land, and they have a rich cultural history (Yildiz, 2004). Kurdish is the only common language of the Kurds, but they have different dialects. The main dialects are Kurmanji and Sorani. The Iraqi constitution Article 4 (1) recognizes the Kurdish language along with Arabic as the two official languages in Iraq (Iraqi Constitution 2005). The majority of Kurds, due to their distinct culture, history, and language, identify themselves as Kurds, not Arabs, Persians or Turks.

The second part of Buchanan's definition of "people" is "aspiration for constituting its own political unit." The Kurdistan Region of Iraq has a long history of pursuing its own political unit. The Kurdistan Regional Government and Kurdistan National Assembly (KNA) were established in 1991 and were able to survive in the *de facto* Kurdish region. Following Iraqi Operation Freedom, according to the Iraqi Constitution Article 117 (1), the Kurdistan region was recognized as a federal region within the state of Iraq. Thus, by applying Buchanan's definition of "people" to the Kurds of Iraq, one can argue that the Kurdistan Region matches the criteria necessary to be considered a "people" by the Remedial Right Only theories of secession/self-determination.

The second condition in the Remedial Right Only theories for legitimate secession is “certain injustices.” Buchanan defines “certain injustices” as human rights violations by a state against its members (1997). The Kurds had been subjected to grave human rights violations by successive Iraqi regimes until the creation of a “safe haven” in 1991 by the UN Security Council. In order to prove the occurrence of “certain injustices” against the Kurds of Iraq, some of the Iraqi government’s crimes must be highlighted. In July 1983, Saddam Hussein’s regime conducted one of the largest genocidal massacres of all time in Iraq against the restive Barzani clan. Approximately eight thousand Barzanis, including boys as young as ten years of age, were relocated to the south of Iraq and exterminated. A few days after their disappearance, Hussein appeared on Iraqi television and announced: “We sent Barzanis to the hell.” The Iraqi Supreme Criminal Tribunal, on Tuesday, May 3, 2011, ruled that the Barzani massacre was an act of genocide (KRG 2011).

From early 1986 until late 1989, Hussein’s regime initiated the infamous *Anfal*<sup>2</sup> campaign against the Kurds. Among the most horrendous crimes during the *Anfal* campaign was the use of internationally-banned chemical weapons against the Kurdish town of Halabja in 1988, which claimed the lives of five thousand civilians. The overall *Anfal* campaign claimed the lives of more than one hundred thousand Kurds, caused the exodus of more than one million people to the borders of Turkey and Iran, and destroyed five thousand villages.<sup>3</sup> The massacre of the Barzanis and the *Anfal* campaign provide solid evidence that “certain injustices” were committed by the Iraqi central government against its own members, the Kurds. Thus, one could claim that based on the Remedial Right Only theories of secession, the Kurdistan Region is entitled to exercise its right to self-determination and secession from Iraq.

### Criteria of Statehood

The accepted criteria for statehood in international law were articulated in the Montevideo Convention on Rights and Duties of States in December 1933. The criteria for statehood are defined in Article (1): “the state as a person of international law should possess the following: (a) a permanent population; (b) a defined territory; (c) government; and (d) capacity to

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<sup>2</sup> *Anfal* is the Arabic word for spoils.

<sup>3</sup> On the *Anfal* campaign against the Kurds of Iraq see, Hiltermann, 2008. The 1988 *Anfal* campaign in Iraqi Kurdistan. *Online encyclopedia of mass violence*, [http://www.massviolence.org/IMG/article\\_PDF/The-1988-Anfal-Campaign-in-Iraqi-Kurdistan.pdf](http://www.massviolence.org/IMG/article_PDF/The-1988-Anfal-Campaign-in-Iraqi-Kurdistan.pdf).

enter into relations with the other states” (Montevideo Convention 1933).

These criteria have been considered as required conditions for the birth of new states. A permanent population does not necessarily mean a racially, religiously or linguistically homogenous population. As Aust describes, even “the presence of certain inhabitants who are traditionally nomadic” does not violate the “a permanent population” criterion (2005, 16). The size of a territory is not defined under international law. The world’s smallest states are Vatican City and Monaco, which comprise only 0.2 and 0.7 square miles, respectively. Therefore, as long as a defined territory exists, size does not matter.

The third condition, government, is a more rigid one. “There must be a central government operating as a political body within the law of the land and in effective control of the territory” (Aust 2005, 17). Finally, the ability to engage in relations with other states would require a sovereign and an independent government. This condition is the most problematic, because it requires the ability to enter into international treaties with other states. This ability, in practice, is dependent on recognition by other states. In other words, a state cannot enter into international treaties unless it is recognized internationally.

### **Theories of State Recognition**

International law is dominated by two conflicting theories of state recognition: the declaratory theory, and constitutive theory of recognition. The declarative theory is articulated in the Montevideo Convention, Article (3) as follows:

The political existence of the state is independent of recognition by the other states. Even before recognition the state has the right to defend its integrity and independence, to provide for its conservation and prosperity, and consequently to organize itself as it sees fit, to legislate upon its interests, administer its services, and to define the jurisdiction and competence of its courts.

Thus, Bronwlie contends that in accordance with the declaratory theory, the consequences of recognition are restricted because it is only an announcement of the emergence of a new state, and nothing more than an official approval of the existing facts (2003, 86). Unlike the declarative theory, the constitutive theory asserts that a state cannot be defined as an international legal person unless the state is recognized by other sovereign states.

The main difference between the two competing theories is that the declarative theory does not require recognition from other states. Constitutive theory, however, asserts that recognition by other states is a prerequisite for the international legal personality of a state.

### **Applying Statehood Criteria and Theories of Recognition to the Kurdistan Region of Iraq**

The Kurdistan Region of Iraq has a permanent population that has lived there for over four thousand years. The current population of KRI is approximately five million. The KRI has a defined territory of approximately 40,643 square kilometres, excluding disputed areas. Since 1991, the Kurdistan Regional Government (KRG) and the Kurdistan National Assembly (KNA) have controlled the region. The KRG exercises executive power in Iraqi Kurdistan according to the KNA's law, but it lacks external sovereignty, which is granted in the form of recognition from other sovereign states. According to the declaratory theory, the KRI matches the criteria for statehood and is entitled to declare independence, because unlike constitutive theory, it does not require recognition from other states.

The case of the KRI is puzzling. In accordance with articles 1 (2) and 55 of the UN charter, resolutions 545, 1514, 2160 and 2625 of the UNGA, article 1 of the ICCPR and ICESCR, moral theories of secession, the international human rights law approach, and the declarative theory of recognition, the Kurdistan Region of Iraq has a general right to exercise self-determination, secede from Iraq, and declare independence. A question that arises here is, why has independence not been achieved?

## **4. Internal Dimensions of Declaring Independence**

### **Political Developments**

In 2006, citing “the supreme interest of the people of the Kurdistan Region,” the KDP and the PUK announced a strategic power sharing agreement. According to the agreement, the posts of Parliament Speaker and Prime Minister rotate between the KDP and the PUK once every two years (KRG 2011). Many observers believe that the strategic power sharing agreement is “a way of the KDP and PUK to maintain their grip on power and control the affairs of Kurdistan at the expense of other political groups and society at large” (Khalil 2009, 23).

The monopoly of the KDP and the PUK over wealth, power and widespread corruption in some of the KRG offices led to the disintegration of the PUK and the establishment of the Change Movement<sup>4</sup> in 2009 by former disenchanted PUK members. The emergence of the Goran Party (Change Movement) has seen positive developments (Elsenstadt 2011). The Change Movement secured twenty-five seats in the 2009 parliamentary election in the Kurdistan Region, and has been a vocal critic of the KRG. In early 2011, massive waves of protests broke out in the city of Sulaimanya. The protestors cited lack of transparency, rampant corruption and cronyism, and the lack of greater political freedom as reasons behind their demonstrations. Under mysterious circumstances, a few protestors and security forces were killed and injured.

In my email interview with Falah Bakir, head of the Department of Foreign Relations (DFR) for the KRG, he stressed that the KRG has long pursued a “policy of progress and reform” even before these protests occurred. Despite the KRG’s reform efforts, the prevalence of corruption is not a secret to KRG officials. In a statement issued to demonstrators, the President of the KRI, Masoud Barzani, stated: “There must be both social and political reforms” (IISS Report 2011). Although the KRG has made an effort to implement social and political reforms, opposition groups are dissatisfied with the slow pace of reform.

### **Security Developments**

In 2007, the multinational forces formally transferred security responsibilities to the KRG. The fact that the KRI has been the most stable part of Iraq since 2003’s US-led war is hardly disputed. The region has witnessed the birth of numerous non-governmental organizations promoting human rights. The Amnesty International report of April 2009 acknowledges the KRG’s progress regarding human rights in the region.<sup>5</sup> The Press Law of 2008 issued by the KNA enhanced freedom of speech. Also, the establishment of several bodies for monitoring and preventing violence against women furthered women’s rights and protection in the region (Amnesty International 2009).

Despite these positive and promising strides in the field of security and human rights, serious concerns endure and must be tackled. Concerns or weaknesses regarding the KRG security forces can be summarized in three

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<sup>4</sup> The movement was established by Nawshirwan Mustafa, a co-founder of the PUK and former Deputy Secretary General of the PUK.

<sup>5</sup> The report is available at <http://www.amnesty.org/en/library/info/MDE14/006/2009>.

points. First, despite the fact that the ministry of *Peshmerga* was unified formally in 2009, *Peshmargas*, who comprise the bulk of Kurdish security forces, are loyal to their respective parties, not the Commander in Chief. This disunity has not yet had a crippling impact on the KRI's developments, but dire consequences could result if the disunity persists after the declaration of independence. Following the liberation of the KRI in 1991, the KDP and the PUK entered into bitter competition over power and resources, resulting in a fratricide war that lasted for over three years. The existence of loyal military forces to each party inflamed the war. If disunity in security forces continues after obtaining independence, it could carry the potential for future conflict and create an environment similar to the fratricide war of 1994 between the KDP and the PUK.

Second, the KDP and the PUK maintain their own intelligence services—the Kurdistan Region Security Protection Agency (*parastin*), and the Information Apparatus (*zanyari*), respectively. Chapman (2009) notes that the existence of two intelligence services “whose chief allegiance is to political parties not to the state as whole is inherently anti-democratic” (2009, 290). An independent KRI would face a tremendous risk should other parties operate their own intelligence services.

Third, security forces and intelligence services are often accused of restricting freedom of the press in the KRI. Following the 2003 US-led Iraq war, the KRI witnessed numerous lively independent and opposition media reports. However, KRG officials in some cases filed civil lawsuits against journalists for public defamation. According to the Amnesty International report: “journalists have been arrested and sometimes beaten, particularly when publishing articles criticizing government policies or highlighting alleged corruption and nepotism within the government” (2009, 6). The KRG and its security agencies vigorously and vehemently condemned and rejected the Amnesty International report, but the prosecution of some journalists in the KRI is difficult to dispute. As Friedman (2007) phrased it, the: “[KRI] has a vibrant free press, as long as you do not insult the leadership.” Any declaration of independence under the current circumstances of the security sector in the KRI might create undesired consequences.

### **Economic Developments**

The KRI is richly endowed with natural resources, and the oil and gas industry, agriculture, and tourism could all bolster the KRI's economy. Relative security and political stability, abundant resources and an attractive investment law have made the region the main investment

destination in Iraq and a gateway for investment to the rest of the country. In accordance with the Iraqi constitution, the Kurdistan National Assembly approved the Kurdistan Oil and Gas Law in August 2007 to regulate oil production in the KRI. During a conference about the KRI's gas and oil projects for the year 2011, the KRG minister of natural resources, Ashti Hawrami, stated that "we see our region sitting on at least 45 billion barrels of proven oil [sixth in the world in oil wealth], and as much as 100-200 trillion cubic feet of gas ... production levels are steadily increasing and that exports of crude from the region had already reached around 100,000 barrels per day" (Kurdish Globe 2011).

The KRG established a board of investment in 2006 to facilitate foreign investment in the region, and Kurdistan's investment law is regarded as one of the most attractive investment laws to foreign investors in the Middle East.<sup>6</sup> The value of the projects licensed from August 2006 to May 2011 under the investment law is 17,463,145,961 U.S. dollars (Investment Board 2011). Local and foreign investors have implemented these projects along with several joint ventures.

Iraqi Kurdistan has massive agricultural potential, however, it has not been able to become self-sufficient in its agricultural production. The factors that hinder the KRG from reaching its agricultural potential are identified clearly by the USAID economic development report on the matter, which finds an: "absence of banking, financial services, insurance industries, inadequate infrastructure, issues of land tenure, absence of food safety and health standards, inadequate agricultural education, training and extension, lack of governmental transparency and administrative consistency, and bloated bureaucracy" as the factors that establish a cumulative negative environment on the agricultural sector (2008, 7).

## **5. External Dimensions and Implications of Declaring Independence**

The argument against an independent KRI can be summarized in two broad points. First, some observers argue that the disintegration of Iraq by declaring independence would likely incite civil war between Kurds and Arabs in Iraq (Eisenstadt 2011; Gunter 2004; Khalil 2009; Ozcan 2004). The second argument against declaring independence involves two geopolitical concerns: (1) Independence could spark similar aspirations among the Kurds in Turkey, Iran and Syria; these neighbouring countries,

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<sup>6</sup> Kurdistan Investment Law is available at, [http://trade.gov/static/iraq\\_investmentlawkurd.pdf](http://trade.gov/static/iraq_investmentlawkurd.pdf)

therefore, would probably be hostile to an independent KRI (Gunter 2004; Katzman 2010; Ozcan 2004). (2) An independent KRI would be a landlocked state whose survival would depend on the cooperation of its neighbouring countries. These concerns are salient to most scholars observing the KRI case. Nevertheless, the logic underpinning each argument must be examined and matched against the practicality of the arguments.

### **Iraq's Challenge**

Some observers (Eisenstadt 2011; Gunter 2004; Khalil 2009; Ozcan 2004) argue that the disintegration of Iraq by declaring independence would probably spark violence and civil war among different ethnic groups. Although civil war is plausible, it is not a certainty. Other alternative possibilities must be analyzed. A lack of national unity has been an indelible characteristic of the state of Iraq since its inception. Force has always been used to protect the borders of Iraq that were drawn by the British in the wake of World War I.

Prior to 2003, Iraq had one ruling party and numerous other parties attempting to overthrow it: "At least 10 times in Iraq's history, the army intervened to change the government, either by actual coup, threatened coup, or political pressure" (McMillian 2003, 1). Since 2003, governance in Iraq has been based on a power sharing agreement between Kurds, Shia Arabs and Sunni Arabs. In other words, the current Iraqi political institutions are established on an ethnic and sectarian basis.

Power sharing, or collaborative democracy, is often preferred in heterogeneous societies (Lijphart 1984). A collaborative democracy cannot eliminate cleavages in heterogeneous societies and might cause disastrous outcomes. As Seave argues, "Power sharing devices have not consistently prevented intercommunion conflicts, [and] yielded peace and stable democracy" (2000, 254). Cyprus, Nigeria, Malaysia and Lebanon have experienced a failed collaborative democracy. Cyprus' collaborative democracy lasted only three years (1960–1963), Nigeria's lasted nine years (1967–1966), and Malaysia's collapsed in 1969. Most notably, Lebanon's collaborative system caused the country to experience over fifteen years of violence and civil war (Rafaat 2007).

The current Iraqi parliament highlights the failure of power sharing, or collaborative democracy, and division among Iraqi groups. The Iraqi parliament often ends in deadlock on approving fundamental issues. The national hydrocarbon law is a case in point. The law was submitted to parliament in 2007 but the government and parliament have yet to reach an

agreement. The point here is not to claim that political disagreement in parliament reflects a lack of unity among Iraqis, but to say that the structure of Iraqi society does not guarantee the formation of united political institutions, which in turn leads to the lack of unity and distrust in the government.

Secession of the KRI from Iraq, despite fears of the contrary, might be peaceful. Secession could even encourage Shias and Sunnis to establish their own state, which in turn could substantially decrease the likelihood of future conflict among the three groups. Secession and disintegration have become increasingly sensitive issues in international politics. However, secession and disintegration are ineradicable parts of the international system, even in contemporary international politics. The Velvet Revolution and subsequent divorce of Czechoslovakia into the Czech Republic and Slovakia in 1993, the secession of Kosovo in 2008 and Southern Sudan's independence in 2011 are three cases in point.

In 2008, Kosovo declared independence by seceding from Serbia. The Serbian government vehemently opposed the Kosovars' decision, accusing the Kosovo leadership of treason, and questioning the legality of secession. Furious reactions by Serbia did nothing to preclude Kosovo's independence. The most recent case of secession is South Sudan. Since the outbreak of violence in 1956 between the North and the South, Sudan had undergone continuous conflicts and the loss of millions of lives (Lin 2011). In January 2011, the vast majority of Southern Sudanese voted for independence. The President of Sudan, Omar Al-Bashir, accepted the outcomes of the referendum, and the landlocked Southern Sudan declared independence in July 2011. Observers who argue that the KRI's declaration of independence would spark violence between Kurds and Arabs should note that a substantial amount of Sudan's oil exports are derived from South Sudan. The Comprehensive Peace Agreement (CPA) was signed between the Government of Sudan and the Sudan People's Liberation Movement (SPLM) in 2005. The CPA therefore ended the longest running conflict in Africa. The agreement set a power and wealth-sharing framework between Sudan and the SPLM.

The disputed oil-rich territory of Abyei resembles that of Kirkuk to a great extent, a territory that is located between the borders of Sudan and South Sudan. A referendum guaranteed by the CPA agreement was set to decide the fate of Abyei in 2011. The referendum was delayed and has yet to be conducted. The net oil revenues from Abyei are divided between the government of Sudan and Southern Sudan, according to the CPA.

The histories of Sudan and former Yugoslavia resemble Iraq to a large extent. The respective governments all violated universal human rights,

committed crimes against humanity and implemented repressive measures against Kosovars, Kurds and South Sudanese. Yugoslavia disintegrated into several independent states and since then the Balkan region has maintained peace and stability. After witnessing decades of violence between the North and South, Sudan recognized the Southern Sudanese referendum on independence. Pursuing the same policy in Iraq could probably put an end to violence and herald a new era for the Kurds and Arabs.

To better understand the case of Iraq and the KRI, one must differentiate between Kosovo and South Sudan's path to independence. The Kosovars enjoyed substantial regional and international support, whereas South Sudan declared independence after the government of Sudan guaranteed and approved a referendum. In other words, external support played a huge role in the independence of Kosovo, while internal support of the government of Sudan led to the independence of South Sudan.

In the absence of regional and international support, the path of South Sudan seems to be more feasible for the case of the KRI. Considering the bloody history of Iraq and long years of intra-state conflicts, discrimination and destruction, the Iraqi segments could conceivably form an alliance and follow the same path as Sudan. The Iraqis might therefore finally come to believe that divorce is a much better option than a forced marriage.

### **The Neighbouring Countries' Challenge**

The first geopolitical argument against an independent KRI is the hostility of its neighbours Turkey, Iran and Syria. Some observers (Gunter 2004; Katzman 2010; Ozcan 2004) argue that an independent KRI might spark similar aspirations among the Kurds in Turkey, Iran and Syria; therefore, these countries would strongly oppose an independent KRI. Turkey even warned that it would be a "*casus belli* if the Iraqi Kurds declared their independence" (Gunter 2004, 108). However, an historical analysis of practical relationships between the KRI and neighbouring countries, and current developments following Operation Iraqi Freedom indicate that the neighbouring countries' hostility to such a state is somewhat exaggerated.

Despite the fact that neighbouring countries have always demonstrated hostility to any Kurdish entity, in practice they have all established and maintained relationships with the KRG since its establishment. The neighbouring countries, especially Turkey and Iran, have been the main contributors to the political and economic development of the KRI. Iraq

has always been a source of conflict and instability in the region. Rafaat contends that Iraq has clashed with all six of its neighbours; an independent KRI, however, could provide more “security, stability, and economic advantages” to the neighbouring countries than Iraq has done in the past (2007, 292).

### **Turkey’s Challenge**

Although Turkey, due to its sizable Kurdish population, is thought to have the most rigorous stand on the independence of the KRI, some evidence suggests different explanations. In 2006, the Iraqi parliament passed a law establishing the mechanisms for federal regions within Iraq. A Turkish academic said: “Ankara reluctantly agreed that Iraq’s state structure is a strictly domestic affair” (ICG 2008, 11). In an interview with the International Crisis Group, a senior Turkish official explained: “The fact that the Kurds guaranteed their federal region via the Iraqi constitution with U.S. backing does not mean that this is the end. They are inclined to see it merely as a step toward their independence. Many groups in Iraq are worried that federalism is paving the way for Iraq’s disintegration” (ICG 2008, 11).

Turkey’s unease regarding the KRI’s future is understandable, but the advantages of the alliance between Turkey and an independent Iraqi Kurdistan might outweigh the disadvantages. The Turkish government never labelled the KDP and the PUK, the two parties that comprise the KRG, as terrorist organizations. In the 1990s, the Turkish government provided Barzani and Talabani with diplomatic Turkish passports. They were accepted as legitimate partners, and they can remain as such (ICG 2008). An independent KRI will be more likely to endorse Turkey in finding a peaceful solution for the Kurdish case in Turkey and the conundrum between the Turkish government and the Kurdistan Workers Party (PKK).

Despite notions to the contrary, Turkey and an independent KRI have many common objectives and mutual interests. According to Chatham House, Turkey is now more willing “to accommodate Iraqi Kurdish independence than oppose it militarily,” because “Turkey will prefer an independent Kurdish state rather than Iraqi state dominated by an Islamist government” (2004, 4). An independent Iraqi Kurdistan could work as a buffer zone for Turkey. Galbraith argues that: “Being secular and pro-Western makes the Kurds natural allies for Turkey and a buffer to an Islamic Arab state to the south” (2006, 117).

In the wake of Operation Iraqi Freedom, the KRI became the major destination for foreign investment in the country. Realizing the substantial economic potential of the KRI, Turkey has made concerted efforts to actively engage in the region, both politically and economically. As of October 2009, twelve thousand Turkish companies have invested in the region, including three hundred construction companies that have completed US \$2 billion in reconstruction projects (Philips 2009). Several Turkish oil exploration companies have conducted contracts with the KRG to explore oil fields (ICG 2008). Turkish investors have been the major contributor to the reconstruction and economic development of the region.

The KRG and the Turkish government have common strategic interests, and both governments are now economically interdependent. The volume of bilateral trade between Turkey and the KRG has reached nine billion U.S. dollars, which is one of the largest in the Turkish economy (Today Iraq Magazine 2011). The KRG considers Turkey to be a vital contributor to its economic developments, because Turkey is the only possible route for the KRG to pump energy resources into the European market, and Turkey considers the KRI to be a valuable source for enhancing its economy.

Following a series of formal negotiations between the leadership of Turkey and the KRI, especially the formal meeting between President Barzani and the Turkish foreign minister in Erbil, Turkey officially commenced its diplomatic ties with the region by opening its consulate in the capital Erbil in 2010. The Turkish Consul General said that the opening of the consulate “is part of a strategic and long-term policy to establish good relations” between the KRG and the Turkish government (KRG 2010). In a historical visit on March 30, 2011, Turkish Prime Minister Recep Tayyip Erdogan became the first Turkish prime minister to visit the KRI.

### **Iran’s Challenge**

“Iran, which has historically supported Kurdish separatists in Iraq, may be the more ferocious opponent of a fully independent Kurdistan in Iraq” (Galbraith 2006, 218). In response to Iran’s historical support for Kurdish separatists in Iraq, as Rafaat notes: “the KRG has banned incursions into Iran from those armed camps of the Iranian Kurdistan opposition parties that have been based within the borders of Iraqi Kurdistan” (2007, 291). In the wake of Operation Iraqi Freedom, Iran opened its consulate in the KRI. Since then, a strong bilateral economic and diplomatic relationship has flourished between the KRG and Iran. In 2009, the Iranian foreign

minister conducted his first visit to Iraqi Kurdistan to consolidate economic cooperation between the KRG and Iran.

Although some observers argue that Iran might strongly oppose an independent KRI, Iran lacks the willingness and capability to prevent the emergence of a Kurdish state in Iraq. First, Iran is trying to establish better economic relations with the KRG, and is making a concerted effort to compete with Turkey for bilateral trade with the region. Second, considering the tense relationship with the West, especially between the US and Iran, as Galbraith (2006) notes, the US and other Western countries would not tolerate a military intervention in the KRI by the Islamic regime of Iran. Moreover, the current comprehensive economic sanctions resulting from Iran's nuclear program have had a severe impact on Iran's economy. Iran cannot overlook its economic benefits in the KRI as long as economic sanctions persist.

### **Syria's Challenge**

Syria has the least influence on the region's politics and is unlikely to influence the future of Iraqi Kurds. As Rafaat (2007) notes, Syria has kept channels open with the KDP and the PUK, the two main components of the KRG, and the PUK was even established in Damascus.

### **The Landlocked Nature of the Kurdistan Region of Iraq**

The second geopolitical argument is that an independent KRI would be a landlocked state whose survival would depend on the cooperation of neighbouring countries. Ozcan (2004) contends that if an independent KRI fails to integrate with the world economy, such a state could survive only if an outside power such as the US were to provide support and protection, or if good relationships were generated with the neighbouring countries.

Closing borders on an independent KRI could have a devastating impact, and its survival could be uncertain as a result. However, recent developments must be taken into consideration. As discussed earlier, relationships between the KRI and its neighbouring countries are built on the basis of mutual economic benefits. The KRI is among Turkey's top ten economic partners. The two share a 350 km border, which remains Turkey's only crossing point to Iraq (Kurdish Globe, 2011). Any attempt to close the KRI's border would have a severe impact on Turkey's economy as well. In compliance with international sanctions imposed on Iraq before the first Gulf War, the closing of the only border point with Iraq cost Turkey approximately US \$100 billion (Rafaat 2007). In light of

recent developments and strong economic and political ties, one could argue that the neighbouring countries would help protect an independent KRI and make a concerted effort to keep such a state stable to preserve their economic interests in the region.

During the United Nations Millennium Declaration in 2000, the heads of states and governments decided: “We recognize the special needs and problems of the landlocked developing countries, and urge both bilateral and multilateral donors to increase financial and technical assistance to this group of countries” (UNGA 2000).

The countries neighbouring the KRI offer considerable economic benefits, yet many scholars continue to view them as a threat to the region. If Iran and Turkey oppose an independent KRI, at any cost, the survival of such a state will be highly doubtful. Turkey and Iran would suffer if they should they close the independent KRI’s border, but the KRI would be devastated.

## **6. Why Has Independence Not Been Achieved?**

As Krasner notes: “Recognition has been accorded to entities that lack either formal juridical autonomy or territory, and it has been denied to states that possess these attributes” (1999, 220).

The main obstacle for the KRI in the path to statehood is a lack of regional and international support. In other words, independence is hindered by political, not legal reasons. The political impediments of the KRI’s quest to independence can better be understood and analyzed in the context of Kosovo’s path to independence.

Kosovo declared independence on February 17, 2008. As of October 11, 2011, 87 states—including the US, UK, France, and Germany—had recognized the Republic of Kosovo. The US, UK and France recognized Kosovo less than 24 hours after the declaration. Unlike the KRI, Kosovo enjoyed a great level of regional and international support, especially from the European Union (EU) and the US. President Bush unequivocally stated that: “the end result of the status process should be independence for Kosovars” (Kim & Woehrel 2008, 23).

The United Nations can also play a huge role in advocating the right to self-determination and independence. East Timor is a case in point. In January 1999, President Habibie requested that the UN conduct a referendum on the fate of East Timor, which would choose either independence or greater autonomy under Indonesia. In May 1999, a tripartite agreement between the governments of Portugal and Indonesia and the UN on the case of East Timor was signed. The referendum took

place in August 1999, and was monitored and conducted by the UN Mission in East Timor (UNAMET).

Any attempt at independence will require the KRI to overcome all of these political hurdles, in addition to geopolitical concerns. The case of Kosovo and East Timor indicates that recognition and independence are not determined merely through the theoretical and legal applicability of self-determination, as was the case in the decolonization of Africa. Political legitimacy has become a determining factor in achieving independence, recognition and membership in the UN. Recognition has therefore become a political tool.

An independent KRI would require a secular democratic government, need to provide a secure and durable source of energy for the US and the world's economy, provide the State of Israel with a trusted ally, and bolster US efforts in the war on terror in the region. Despite the growing strategic importance of the KRI to the US, the US has always "officially" opposed efforts by the Iraqi Kurds to achieve independence. By supporting and recognizing an independent Kurdish state in Iraq, the US would risk alienating Turkey.

Turkey is the only Islamic member of the North Atlantic Treaty Organization (NATO) and part of the G20. Turkey can play a critical role in containing Iran's nuclear aspirations. Philips argues that Turkey is the "strongest and most reliable" Islamic ally of the US (2009, 1). Straddling Europe and Asia, Turkey played a crucial role in containing the former Soviet Union during the Cold War, engaged in the war on terror after the 9/11 attacks, and twice led the International Security Assistance Force for Afghanistan (Philips 2009).

It is widely believed that as long as Turkey is committed to its alliance with the US, and as long as it retains its staunch opposition to an independent KRI, the US is more likely to ignore the Iraqi Kurds' desire for independence. Considering this possibility, the only feasible way to achieve independence would be to secede peacefully from Iraq. In this case, Turkey and the US might be more likely to respect the will of the Iraqi people, including Iraqi Kurds. In addition, Iraq can be utilized as an alternative route for connecting to the world's economy.

No matter what the future holds, the Kurdish issue, specifically as it related to the KRI, will continue to challenge international politics in the region. For this reason, the issue must continue to be addressed.

## 7. Conclusion

In light of the recent economic and political developments, the call for independence has gained momentum. Although the potential to achieve independence exists, however, the Kurds could jeopardize their numerous achievements, and current internal and geopolitical circumstances threaten their cause. Were the KRI to declare independence, it could face economic strangulation from Turkey and Iran. Needless to say, this would hurt Turkey and Iran's economy, but it would paralyze the KRI. For neighbouring countries, it would be a matter of losing a source of economy, but for the KRI it would be a matter of survival.

Instead of an untimely declaration of independence, the KRG must address some internal and external challenges that could increase the prospect of independence in the future. Remarkable economic and political developments since 2003 have not been flawless. Internally, the KRG must enhance governance and efficiency by diversifying its economy, enhancing transparency and accountability, eradicating corruption and cronyism, granting greater levels of political freedom and freedom of the press, pursuing a strategic plan that encourages the Iraqi Kurds to be less dependent on the government, and finding common ground for improving its relationships with the central government on the basis of mutual interests.

Externally, the KRG must actively engage its neighbouring countries in the political and economic developments of the region. As long as its neighbouring countries derive economic benefits in the region, they would be unlikely to disrupt its stability and prosperity. The KRG has been pragmatic in building ties with its neighbours. By doing so, the Kurdish leadership is maximizing the probability of future independence. The relationship of the KRG and Turkey is a case in point. Turkey has never supported an independent Kurdish state, but the KRG's policy of economic and political integration with its neighbouring countries has encouraged Turkey to be the region's main economic contributor. Contrary to expectations, Turkey acknowledged the KRI as a federal region by opening a consulate in Erbil. However, frequent Turkish bombings of the northern KRI areas, in pursuit of PKK fighters, proves that the relationship between the KRI and Turkey can be derailed whenever Turkish national security and stability is in jeopardy.

Given the absence of international support and the Kurds antipathy for achieving their independence through violent means, there are only three possible scenarios that can unpredictably expedite the independence of KRI. The first scenario is where Turkey renounces its resentment to the

emergence of a Kurdish state in Iraq. How likely is Turkey to do that?

Under four circumstances, Turkey might willingly or unwillingly renounce its resentment. First, if Turkey insists on joining the European Union, it will have to reform its internal policies towards its Kurdish population and threatening or strangling the KRI politically or economically would not be a feasible option. Second, even without joining the EU, Turkey might opt for providing greater political and cultural rights to its Kurdish population and renounce its resentment towards the independency of KRI. There are three incentives for Turkey to do that: First, Ankara would be able to preserve and amplify its massive economic revenue in the KRI. Second, it would remedy the long-lasting conflict with the Kurds, which would end decades of intra-state violence, and the Kurdish leadership can play a positive role in mending fences between the Kurdish population in Turkey and the Turkish government. Also, an independent KRI would be a secular government, and Turkey might prefer a secular Kurdish government to a Shia based Iraqi government.

Third, the dominance of Shia in the Iraqi government and the growing influence of Iran in Iraq might create a strong Shia alliance in the region. An independent secular KRI could work as a buffer to a Shia state to the South and an ally of Turkey for balancing the probable Shia dominance in the region. Fourth, if the U.S. places enough pressure on Turkey to renounce its resentment to an emerging Kurdish state in Iraq, Turkey might be willing to do that.

The second scenario involves the Iraqi government's decision of granting the Kurds the right to determine whether to remain as part of Iraq or to become independent through a referendum. This scenario is possible in two situations. First, if the tense relationships between the KRG and the central government keep deteriorating. Since 2003, the disputes between the KRG and the central government and future of the KRI have been the subject of constant debates in Iraq. These disputes have caused huge setbacks in relationships between the KRG and the central government to the point that the Iraqi prime minister and the President of KRI consistently refuse to meet and publicly criticize each other's political agenda. The KRG practically acts as an independent state. The central government accuses the KRG of undermining the integrity of the central government. In the absence of KRG, the central government would seem more powerful and effective and would gain the confidence of the Iraqi people.

Second, if the Kurds are willing to reach a compromise over the Kirkuk issue through a negotiated settlement rather than insisting on reincorporating the city. Kirkuk has always been a source of tension

between the Kurds and the central government, which are unlikely to be abated unless a radical solution is reached over this issue. Untangling the Kirkuk intricacy would highly increase the probability of a peaceful secession from Iraq.

The third scenario is the collapse or disintegration of Iraq. The actions of the Shia-dominated central government have plunged Iraq into political chaos. Instead of alleviating the already tense relationship between Shias and Sunnis, and Shias and Kurds, Prime Minister Al-Maliki's controversial and unilateral actions, such as ordering the arrest of Tariq Al-Hasimi, the Iraqi Vice President, have deepened and magnified political turmoil, as the Kurdish and Sunni leadership have accused Al-Maliki of consolidating Shia power in Iraq.

Throughout the history of Iraq, there have always been ethnic tensions among the Iraqi factions. Up to 2003, Iraq was held together by successive brutal and authoritarian regimes. Saddam Hussain's brutal dictatorship is an example of holding Iraq together by force. From 2003 to 2011, the heavy presence of U.S. troops in Iraq managed to prevent the collapse of Iraq. The history of Iraq suggests that only a dictatorship can hold the country together. With US troops withdrawing from Iraq, the country seems to be on the brink of civil war and ultimately collapse and disintegration. The current situation in Iraq to a great extent resembles that of former Yugoslavia after the death of Marshal Josip Broz Tito. The brutal dictatorship of Tito was the main force behind the republic holding together. After his death in 1980, the ethnic groups of the former republic initiated a series of conflicts and civil wars in the country, which led to the collapse and break-up of the republic at the beginning of the 1990s.

The KRI is pragmatically dictating itself to the current international system. Even without achieving independence, the KRI can still develop and flourish. The region has acted as a quasi-independent state since the removal of Hussein's regime and few nations in the world are in the same situation as the KRI. Taiwan should be a model for the Iraqi Kurds, because that nation exists essentially as an independent state. The International Monetary Fund's (IMF) world economic outlook categorizes Taiwan as an advanced economy (IMF World Economic Outlook 2008). By restraining secessionist aspirations from China, Taiwan has edged away from angering the mainland, and has established strong economic relationships with it. Taiwan has also been successful in building strong, durable security and economic relationships with the US that guarantee its security and stability as long as it does not attempt to change the status quo.

Should the KRI establish a similar relationship with the mainland, its neighbouring countries and the United States, then its numerous strengths (economic, democratic and governance) should continue to flourish and avoid any unilateral attempts to alter the situation as it stands.

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## CHAPTER TWENTY-SIX

# BENEFICIARIES DO MATTER: THE KRG'S EXPERIENCE IN IMPLEMENTING SOCIAL SECURITY PROGRAMMES

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### **Abstract**

Researching the implementation of social security programmes is critically important for understanding the outlook of the KRG towards social policy. This research broadly examines policy implementation theories within the context of politically underdeveloped regions, taking into account two social security programmes of the KRG: “Rights and Privileges to Families of Martyrs and Genocide Survivors,” and “Social Safety Net.” Two questions directed the research; why has the KRG not adopted and implemented an effective social policy with its developmental programmes since its formation in 1992, and why has the KRG implemented its two main social cash transfers differently? Exploring these cases would help to understand the extent to which the political conditions of the Kurdistan region, formed by its past national struggles, as well as the intra-Kurdish civil war during the 1990s and the following patriarchy, have influenced the status of social benefit programmes and their implementation in the KRG.

Contrary to almost all policy implementation theories and models, which lay emphasis on the role of top officials (top-down approach), or bureaucrats and implementers (bottom-up approach), I argue that the service user (beneficiary) is potentially a determinant actor in the policy implementation success. The KRG deals with social cash transfers in accordance with the profile and socio-political status of beneficiaries.

## 1. Introduction

By drawing on the hegemony of politics over the administration and social policy in the Kurdistan region, researching the implementation of social security programmes is critically important for understanding the outlook of the KRG towards social policy. This research broadly examines policy implementation theories within the context of politically underdeveloped regions, taking into account the social security programmes of the KRG as an example. A primary question that could be asked at this point is why has the KRG not adopted and implemented an effective social policy with its developmental programmes since its formation in 1992. The question posed in current research is why has the KRG implemented its two main social cash transfers ( “Rights and Privileges to Families of Martyrs and Genocide Survivors” and “Social Safety Net”) differently. Exploring these cases would help to understand the extent to which the political conditions of the Kurdistan region, formed by its national struggle in the past, as well as the intra-Kurdish civil war during the 1990s and the following participatory, have influenced the status of social benefit programmes and their implementation in the KRG.

The research has chosen policy implementation as its theoretical framework. Having employed qualitative semi-structured group discussion with the implementers of the above-mentioned programmes in the region, this research discusses the critical factors in the implementation process of social security programmes in the KRG. Contrary to almost all policy implementation theories and models, which lay emphasis on the role of the top officials (top-down approach), or bureaucrats and implementers (bottom-up approach), I argue that the service user (beneficiary) is potentially a determinant actor in the policy-implementation success. The KRG deals with social cash transfers in accordance with the profile and socio-political status of beneficiaries. In this regard, two types of clients can be distinguished: high value clients and low-value clients. The political status and profile of beneficiaries of social security schemes play a decisive role in the salience given to the social programme, and in the effectiveness of its implementation.

## 2. Politics and Social Policy Background

It is almost impossible to conduct research on social policy in the Iraqi Kurdistan region without tracing some political and socioeconomic features that have shaped the Kurdish administration in general and the implementation of social policies in particular. As has been followed in

this chapter, social policy process in the Kurdistan region cannot be well understood without taking into account the priorities of the KRG, which drives the political-administrative system in the region.

## **2.1 Political, Socioeconomic and Administrative Background**

What Kurds experienced under the command of the previous Ba'athist regime was a large-scale state repression, discrimination and deconstruction. A large amount of the literature on the political history of Kurds in Iraq has reflected on the situation of how and why Kurds have been politically victimised and become socio-economically vulnerable (McDowall 1996; Randal 1998; Gunter 1999; Rogg & Rimscha 2007; Galbriath 2005; Stansfield 2006; Natali 2010). The repression, war and genocide experienced by Kurds in Iraq resulted in extreme political instability and social vulnerability, and it is through such repression that the Kurdish national movement and its political parties have emerged. The development of Kurdish political parties consequently had a revolutionary legacy and embedded a traditional style of politburo. When the KRG was established in 1992, it was a party-controlled administration in which nationalist characters and party members were prioritised. Kurdish political parties exploited the suffering by labelling themselves as freedom fighters or martyrs as a credit for themselves. Exploring the political past ultimately explains how in the time of the “revolutionary party-controlled KRG,” instead of adopting a public welfare stance, a prerogative system for party-affiliated people and political victims (of war and genocide) was created.

In spite of been politically victimised, the Kurdish population also lived in extreme socio-economic insecurity. During the 1990s the Kurdistan region suffered from an extreme shortage in public services. Although international aid and the Oil-for-Food Programme (OFFP) secured a short-term food and goods supply (Natali 2010), the KRG was still unable to implement social protection schemes which had already been regulated in the Kurdistan National Assembly (KNA) (Protocols of KNA, Vol. VI, 1993, 256–260). In addition to the state repression from the previous Ba'athist regime before the 1990s and economic blockades after that, what ultimately paralysed the KRG was the fratricide and the intra-Kurdish civil war between the major parties the KDP and the PUK in the region, in which the social and economic life of the people was badly affected.

The Kurdish fratricide also consolidated a welfare tradition inherited from the Ba'athist regime that already existed as a character of Kurdish

political partisanship, which can be best called “party-affiliated welfare provision.” This type of party-controlled governance that I attribute to the KRG would be explained within the clientele politics in social funds. This means that the KRG and the ruling parties favour some groups over others while delivering public services. In a war-prone society like the Kurdistan region, which is still run by a revolutionary party-driven government, it aims to better consider party-affiliated people as recipients of public funds.

Apart from the political and socio-economic opportunities that the KRG embraced after the invasion in 2003, the KRG has developed a double standard. On one side it has facilitated a rapid socio-economic growth, and on the other, due to pursuing the same clientelistic practice, it has discharged the KRG into institutionalised nepotism and corruption. Ultimately, all administrative procedures in the Kurdistan region have remained linked with nepotism rather than meritocracy, and this has kept most of the public sector grounded in party-based affiliation (Natali 2010). Both ruling parties have always manipulated the public budget for their own benefit and for that of their patrons. Both of the major parties make monthly or occasional payments to active party members, particularly those who advertise for and defend the party.

However, as will be discussed, mass protests and parliamentary opposition since the 2009 general elections awakened the government to make some attempt to promote a degree of transparency in administration and public services. In this respect, the government responded by promising to improve services, initiate transparency, and increase social benefits and salaries. Moreover, a strategic socioeconomic plan has recently been put into place (Ministry of Planning-KRG 2011).

## **2.2. Social Security Programmes: Cases of the Ministry of Martyrs and *Anfal* Affairs, and Social Safety Net**

The idea of devoting a special government body to serving the descendants of martyrs and victims of genocide and chemical gas attacks can be traced back to several non-governmental foundations belonging to political parties. The KRG adopted the idea in its sixth cabinet in 2006 after combining several government and nongovernment organisations and merging them into a ministerial body, the Ministry of Martyrs and *Anfal* Affairs (MoMA).

The Rights and Privileges to Families of Martyrs and Genocide Survivors (RPFMGS), implemented by MoMA, is cash transfers to the families of war victims and genocide survivors of the Kurdistan region. The programme provides regular monthly cash transfers plus other social

services and benefits to eligible people. What appeared to be ambiguous is that the programme regulation (RPFMGS Regulation 9, 2007) is implicitly operated not as a needs-based programme, rather as an overall compensation for the loss of life. As the social security documents indicate, the compensation is financial reparation rather than a social benefit. However, the RPFMGS programme is not implemented merely as a social security policy. In other words, the monthly salary is not specified based on the financial situation of the needy but rather on the role and status of the victims and their families have had in the national liberation movement and Kurdish political parties. For instance, if the beneficiaries of RPFMGS are categorised as “war martyrs,” “civil martyrs,” and “genocide victims,” then a programme is being implemented which functions to reward the families of victims.

After the uprising and when the Kurdistan National Assembly (KNA) and KRG were established, local authorities became the heir of the remains of Iraqi government offices. In its early meetings, the KNA revised the former Iraqi social protection regulations. Initial remedies appeared in the Kurdistan National Assembly’s protocols within the law of the Ministry of Health and Social Affairs (Protocols of KNA, Vol. VI, 1993). The changes include cases like the existence of thousands of survivors of genocide and martyrs of Kurdish national freedom or the situations of other cases (i.e. widows, disabled, orphans, and married students that have responsibility as breadwinners). Although potential changes and enlargements were proposed to the Social Protection Programme (SPF) by the KNA, in practice there was no trace of its implementation. The first cabinet of the KRG did not include a specific ministry for social affairs. All directorates of social protection and social care were integrated within the Ministry of Health and Social Affairs. For the first time in the PUK-controlled administration of KRG-Sulaimaniya in 2001, a ministerial body was devoted to administer social programmes.

When the new law for the Ministry of Labour and Social Affairs (MoLSA) was issued in 2004 (Law of the Ministry of Labour and Social Affairs No. 34, 2004), it confirmed some general goals, of which none were well pursued in governmental social organisations. The Iraqi Kurdistan Parliament (IKP) revised this law (in law No. 12, 2007), which in Act (2) mentioned the below points:

- (Act 2, Section 2)—the Ministry endeavours to cover all workers in its social insurance scheme, and to provide social protection to them and their families.

- (Act 2, Section 8)—Paying attention to victims of genocide and chemical weapon attacks, and providing social and psychological care to them.
- (Act 2, Section 11)—Providing financial assistance to the poor and those incapable of working and with no sources of income.

Although the MoLSA regulations tried to cover war and genocide victims, they have been better covered in distinct government programmes. These regulations were followed by some instructions issued by the Ministry of Finance and Economy, which implied the intention to implement the Social Safety Net (SSN), an advanced programme which seemed to be developed to merge all MoLSA social cash transfer programmes and to cover new clients (MoFE/Financial Instruction, No.24, 2011). Needless to say that this change, implementing SSN, occurred after the February 2011 mass protests demanding public services and criticising parliamentary opposition parties regarding the lack of public services and corruption in government social funds. The SSN programme instructions clearly address the provision of financial assistance to widows, the divorced, married students, the families of imprisoned people, females with no breadwinner or income, the disabled, the elderly and orphans (MoFE/Financial Instruction, No.24, 2011).

Prior to merging into the SSN, the SPF was subjected to many alterations since its reactivation in 2001. During this period, it was subject to expansions and deviations. Despite being implemented mainly as a cash transfer scheme, in some phases of its development, the SPF has also been overloaded with social awareness of families. Thus, when it comes to the functionality of the SPF, a contradiction can be seen in the implementation of the programme.

The SSN is potentially defined as social assistance programmes which aim to secure an adequate standard of living for all people in the region. Taking into account the amount paid to recipients monthly, the implementation of the SPF did not make any change in the life of its recipients. They were paid an amount of cash, IQD 30.000 (approximately US \$25), which dramatically increased to IQD 150.000 (US \$125) after the protests of February 17, 2011, when it transformed to the SSN. This programme covers those who with low or no source of income and in no way in receipt of any government benefits. Here, an ambiguity appeared in implementing the eligibility criteria. A low earner is someone who has a job or a source of income, but cannot afford their life expenses without help from another source. However, the amount being paid monthly in no way covers even the very basic needs of a single person per week.

Within the framework of the SPF in the Sulaimaniya province, the “Special Salary” was delivered to individuals selected as party patrons directly by party offices, and mostly by the PUK General Secretary Office. None of the SPF and SSN eligibility criteria could be applied to recipients of the “Special Salary.”

### **3. Theory: Policy Implementation**

Implementation is considered to be one of the most important elements of the policy process. It begins once policy targets a social problem or issue, starting somewhere in the later stage of the policy process. The start point in the policy process is a problem which compels politicians and high officials to come up with their agendas to deal with it. Thus, officials formulate policy (the policy-making stage) to overcome the issues. In that sense, implementation can be considered as part of the post-policy-making stage.

Models of policy implementation can be characterised as theories that identify how various actors in the policy process translate policy into action. Implementation models have been diverged according to whether assessments are developed from the perspective of the initial policy-makers (centre), field-level implementing officials (periphery), or private individuals to whom the policy is directed (target group) (Mazmanian & Sabatier 1989).

The top-down theory/model places emphasis on policy formulation and the ability of decision makers to produce explicit policy objectives. This model starts from the assumption that policy implementation begins with a decision made by central government. Top-downers assume a direct causal link between policies and observed outcomes and tend to disregard the impact of implementers on policy delivery. They essentially follow a prescriptive path that interprets policy as input and implementation as output factors (Pressman & Wildavsky 1973; van Meter & van Horn, 1975; Sabatier & Mazmanian 1979, 1980 and 1981). Due to their emphasis on decisions of central policy makers, deLeon (2001) describes top-down approaches as a “governing elite phenomenon.”

Pressman & Wildavsky’s original work, *Implementation* (1973), starts from the assumption that policy objectives are set out by central policy makers. In this view, implementation research is left with the task of analysing challenges to the manner of achieving these objectives. Hence, they see implementation as an “interaction between the setting of goals and actions geared to achieve them” (Pressman & Wildavsky 1973). The American scholars van Meter and van Horn (1975) offer a more elaborate

theoretical model, being concerned with the study of whether implementation outcomes correspond to the objectives set out in initial policy decisions.

Sabatier & Mazmanian (1979) suppose a clear separation of policy formation from policy implementation. Their model also lists several criteria for effective implementation (Sabatier & Mazmanian 1979, 489–92, 503–4). They argue that policy objectives need to be clear and consistent and the programme should be based on a valid causal theory. Although Sabatier & Mazmanian acknowledge that perfect hierarchical control over the implementation process was hard to achieve in practice, and that unfavourable conditions could cause implementation failure, they argue that policy makers could ensure effective implementation through adequate programme design and a clever structuration of the implementation process. They also assert that for implementation to be successful, the interest groups (executive and legislative) and sovereigns should be supportive, and there should be a condition with no detrimental changes in the socioeconomic framework.

Having tested the top-down model, this chapter explores the extent to which leaders of dominant political parties and government officials control and influence the direction of policy performance in the Kurdistan region. It also explores the implementation of social security programmes in terms of their consistency with or deviation from policy regulations. Additionally, I argue that regulations and specific standards are not only elements to direct policy performance, but that a number of elements are also involved in this process, for instance, the implementer's discretion, politician's intentions and the dominant party agent's interests. The role of non-statutory factors is inevitable in policy implementation process.

In contrary to the top-down theories, bottom-up theories emerged in the late 1970s and early 1980s as a critical response to the top-down approach. Their focus is on the role that middle actors play in policy implementation. It looks at local bureaucrats as the main actors in policy delivery and conceives of implementation as negotiation processes within networks of implementers. Several studies show that policy outcomes do not always sufficiently relate to original policy objectives and that the assumed causal link is thus questionable. Studies belonging to this part of research typically start from the “bottom” by identifying the networks of actors involved in policy formulation and delivery. Bottom-up researches reject the idea that policies are defined at the central level and that implementers need to obligate themselves to these objectives as neatly as possible. Instead, the availability of discretion at the stage of policy deliverance appears as a beneficial factor as local bureaucrats are seen to

be much closer to the real problems than central policy makers (Lipsky 1971 and 1980; Elmore 1980; Hjern 1982). Lipsky's street level approach includes several points which this research intends to examine within the given research framework. Policy implementers, as non-elective officials, work in and maintain jobs that enable them to accumulate experiences and skills, whereas top-level officials are devoid of such experiences and skills. All they have is the "power" to compel implementers and lower level workers to perform in their respected directions.

To overcome the one-sided approach of top-down and bottom-up models, the hybrid theories of policy implementation recognise that policies are made within a dialectical relationship between top-level and lower-level actors. Policy implementation does not occur in separation from policy making; they are both related. Consequently, policy implementation cannot be analysed without looking at the policy formation process. I suppose that the mixed approach can, to a large extent, be developed to include two themes: the dynamic network of top officials, implementers and recipients on one hand, and the politico-administrative context which explicitly makes an impact on the implementation process on the other. Almost all approaches and generation models of policy implementation emphasise the role of actors or groups of actors during the implementation process (Schofield 2001, 255). As demonstrated in the policy implementation literature so far, the role of service user is understood to be a recipient or person affected by the programme outcome, as opposed to being a significant factor in the process of implementation. Policy implementation research considers actual actors rather than potential actors. The potential role of a service user in the implementation process is often ignored because the focus tends to be on the implementers rather than beneficiaries. I argue that beneficiaries of social programmes should also be considered in policy implementation research.

Exploring policy the implementation process is mostly about the role of implementers as significant actors (e.g. implementation officials, managers, professionals and frontline workers). Equally, it concerns the organisational and political contexts of implementation. In other words, the concept of policy implementation refers to both the performances and the politico-administrative and institutional context. Therefore, in this research, both spheres are taken into account. What has been neglected by mainstream implementation theories in developed and developing countries is the assessment of the implementation process within its party politics and administrative context.

Attempts have been made in the developing world to apply, test and articulate these same models of implementation (Grindle 1980; Temple & Temple 1980; Lazin 1994 and 1999; Lane 1999; Makinde 2005). For the purpose of my research, special emphasis has been placed on the political and administrative grounds of policy implementation. This is because policy implementation cannot be studied in a context-free manner. Thus, politico-administration conditions need to be considered to develop implementation theories in a developing-world context.

Grindle (1980), in his edited book *Politics and Policy Implementation in the Third World*, addresses two broad questions about implementation. The first is concerned with the effects of the content, and the extent to which the content of social policy has an impact on its implementation process. The second is about context. By this, he discusses how the political context of administrative actions affects policy implementation processes (1980, 5). The contributors of his volume, which consist of several case studies, all share in this perspective the content and context of policy implementation.

Lazin (1999) points out how political and administrative institutions of particular countries affect their domestic policy implementation process. The three major questions addressed in his book *The Policy Implementation Process in Developing Nations* are: Firstly, to what extent can the developmental status of particular country be taken into account for understanding its policy implementation process? Secondly, do the studies of policy implementation in developing countries, in their methodological aspects, favour a top-down, bottom-up or synthesis model? He also asked whether the dichotomy of policy formulation and implementation is helpful or whether it is preferable to consider it as one on-going process?

#### **4. Methodology**

For the purposes of the current research, a qualitative method based on group discussion has been employed. Six group discussions (focus groups) were conducted. Research participants were chosen from various levels and positions in directorates of both relevant ministries, MoMA and MoLSA, in all three governorates of the Kurdistan region—Erbil, Sulaimania and Dohuk.

The implementation of social security programmes involves different levels of implementers. Their knowledge, perspectives and concerns relating to programme performance and relevant issues are an important part of understanding implementation in the given context. The

exploratory nature of this research and its questions led me to follow qualitative research, concentrating on the comparative analysis. Besides this, in exploring the implementation of social security policy, contextual aspects are taken into account as determinant factors to understand how social security programmes work in particular political, administrative and organisational conditions.

## **5. Social Security Programmes in the Politically Underdeveloped Kurdistan Region**

This section will analyse the KRG's experience in implementing two main social security programmes, SSN and RPFMGS. The discussion first will focus on the political-administrative context of the programmes, and explores the role and status of programme recipients in their implementation process. Finally, based on the discussion on these critical factors, it provides an analysis on how a rewarding system of distributing prerogatives has been adopted by the KRG instead of an effective welfare system.

### **5.1 The Politico-Administrative Context of Social Policy**

In order to understand how politics influence and direct the implementation of social cash transfers, it is necessary to consider the political and administrative conditions and social policies of the Kurdistan region. The findings of the current research indicate that party politics determines the performance of social policy. Taking into account the historical background of the Kurdistan region, Kurds inherited depressed social and economic conditions caused by the deliberate ignorance of socio-economic life and programmed repression of the Kurdish population by the Ba'athist regime in Iraq. Furthermore, the Kurdish civil war during the mid-1990s doubled the burden of Kurdish society and government. It seemed the claim that the social service provision in general and social security in particular during the intra-Kurdish war was entirely useless. Despite the limited financial sources of the KRG, the budget of the government was controlled almost entirely by two warring factions, the KDP and PUK, that wasted public finances on a war against each other.

The civil war also weakened government institutions in favour of party institutions. Party leaders had ultimate control over resources generated from border imports and exports and limited tax revenues. These finances were spent without any accountability. Often, public administration and expenditure were the last to be catered for and party affiliation was also

the basis on which social cash transfers were made. Even ordinary war victims who did not belong to either of the warring factions were excluded. In other words, the region's income was owned and controlled by the ruling, later fighting parties, who spent the income on themselves and mostly on others affiliated to their parties.

Although the Kurdistan Region saw relative economic growth in the 1990s as a result of the implementation of UNSCR no. 986; the Oil-For-Food programme, and started to reconstruct its social programmes, the KRG still continued in the direction of double standards in the implementation of social programmes. The party-run cash transfer programmes like the Foundation of Martyrs embodied the government, but instead of integrating into the rest of the government's social programmes, they were directly attached to the Council of Ministries in both KRG administrations of Erbil and Sulaimaniya. The unified government announced in 2006 all foundations of martyrs, genocide victims and veterans were to be merged in the MoMA. Only after the MoMA was set up were non-party victims covered by the programme.

As for the other programme, SPF, which at the beginning of its re-activation in 2001 was called Family Protection Fund (FPF), the offices of two major parties were placed in charge of making records of the list of eligible people. For instance, the first, essential list of FPF benefit recipients was mostly made by the KDP in its party offices in Erbil. This list formed the basis for the later development of the programme. In other words, party leaders and senior government officials continued to misuse the cash transfer programme, turning it into a reward system for loyal party members and supporters. As confirmed by interviewees with former staff members of FPF, the payments handed out to beneficiaries were always accompanied by a verbal message from senior officials indicating that such a payment was a gift from the Prime Minister and the ruling party.

Allocating a special government body to serve inheritors of martyrs, genocide and chemical gas attack survivors on the one hand, and ignoring existing government social programmes on the other indicates unbalanced interests in the implementation of social security programmes. Instead of integrating the RPFMGS programme into other social security programmes within the Ministry of Labour and Social Affairs (MoLSA), the KRG devoted a different ministerial body to do so. This placed a huge burden on the KRG's general budget and it was also a lost opportunity to put together both the Foundation of Martyrs and other government social transfer programmes. I believe there are two reasons why the RPFMGS did not merge with MoLSA. A simple reason was because of the high

number of ministers who agreed on in the coalition government between the KDP and the PUK. Increasing the number of ministries allowed the allocation of posts to more party candidates in high-ranking positions in the government, an action that was widely criticised. In the sixth cabinet of the KRG, the number of ministries decreased, but the MoMA remained as a ministry. The second reason could be found in the importance of the RPFMGS programme and other duties of the MoMA. The KRG sees MoMA as a high nationalistic institution (Law No.8, Ministry of Martyrs and Anfal Affairs, 2006), and does not intend to mix its programmes with other social services.

It is worth noting here that incompetency is one of the administrative characters of the KRG. Until the sixth cabinet of the KRG formed in 2009, those who had been recruited to work in government offices were not recruited based on job description or qualification. In fact, other external factors have always played a role in recruitment in the public services. Since loyalty to the political party, as opposed to experience or qualification, formed the basis of recruitment, it is unsurprising that the capability of administrators and employees is very poor (Heshmati 2010). Once in office, these employees are compelled to obey the party rather than commit to administrative guidelines.

## **5.2 Rewording System or Welfare System: Nationalistic Versus Public**

Since both parties and the KRG feel they owe the national liberation and civil war victims a great deal to value their loss and sacrifice, they prioritise the implementation of the RPFMGS programme to reward them. In my view, the KRG's failure in launching sufficient welfare is not due to an absence of financial and administrative capacity. Rather, by and large, the KRG has not been taking the issue of public welfare provisioning seriously. As mentioned earlier, administrative incompetency is one of the obstacles that made the implementation process non-systematic, but cannot be considered as a determinant factor for successful policy implementation. Competency can be built or adopted. Nonetheless, the government and politicians have not been determined to truly put social welfare on their agenda. Evaluating the government's agenda, stated in the inaugural speeches of the last three KRG cabinets, proves that social welfare in general and social cash transfers in particular have less space within the government's priorities. For instance, the fifth cabinet's agenda in May 2006, known as administrative unification and reconstruction (speech by KRG Prime Minister N. Barzani, 2006), focused largely on

providing security, reconstruction and development via investment. The government successfully provided security and took massive steps towards domestic and foreign investments. The safety continued to develop the foreign investment affectedly (Board of Investment, 2009; 2010; 2011). In the sixth cabinet of the KRG, known as renewal and reconstruction, despite the promise to continue on the former cabinet's path one of the main programmes initiated was renewing the higher education system and implementing the scholarship programme, the Human Capacity Development Programme, that aims to develop human capacities in the Kurdistan region in the field of higher education, and later transferred to all government offices and ministries for building and developing government civil servants' capacities (Ministry of Higher Education HCDP 2009; Ministry of Planning RECDP 2010; The Draft of Kurdistan Regional Development Strategy 2012). Therefore, among all these, what is missing and ignored is social welfare in the Kurdistan region.

Despite the case of MoMA, which has been increasingly supported by political leaders, other social programmes, such as disabled benefits (deaf, blind and physically handicapped), pension benefits, and unemployment insurance for graduates, have recently gained attention from the authorities. Some of these groups have unions to protect their rights, such as the Deaf Society and Blind Society. Others recipients have received attention after the pressure of the recent mass protests.

In the party political system of the Kurdistan region the concept of "public" has not been well formulated, to the extent that the government finds itself responsible for people's needs, as can be seen in the case of social policy in developed nations. In developed democratic countries, from right to left, social welfare (either welfare state or private sector) focuses on public. Social policy is a government's response to public needs. In the Kurdistan region, social programmes are not targeted at all people to cover their minimum livelihood. The KRG's social programmes reflect party politics rather than public welfare. Both researched programmes, SPF and MoMA, have been developed and implemented in the interests of dominant political parties and their clients' benefit.

As current research findings revealed, the KRG is dealing with social security programmes discriminatively, resulting from the differentiation that the government makes between social security beneficiaries. The duality of the KRG's interest in social programmes is evident in this differentiation between the clients based on their socio-political status. As has been repeatedly emphasised, the nationalistic character (as will be demonstrated below) of the beneficiaries of MoMA has resulted in a great interest for ruling party leaders and government. When compared with the

SPF beneficiaries we realise that they lack any political privilege. We can use these two statuses and interests in the dichotomy of nationalistic versus public. In this dichotomy, the implementation of social security programmes in the KRG has always been off balance.

### **5.3. Clients Do Matter: High and Low-Value Clients**

In tracing the effective implementation of social security programmes in the KRG, I was introduced to the concept of preference of target groups in the eyes of politicians and top officials. Almost all approaches and generation models of policy implementation emphasise the role of actors or groups of actors during the implementation process (Schofield 2001, 255). In the policy implementation research, the role of service user has been understood as merely the recipient of a programme, but has not been charted as a significant actor in the process of implementation. Policy research is considered as actual actors rather than potential actors. The potential role of service user in the implementation process is often ignored because the focus tends to be on implementers rather than beneficiaries.

The current research identified potential actors that directly or indirectly, positively or negatively, influence the implementation performance—they are benefit recipients. This does not mean that beneficiaries of social programmes in the Kurdistan region are actual policy implementers. As this research has highlighted, due to the absence of sufficient social security policy in the Kurdistan region, as well as due to its political considerations, the social security recipients are seen as separated. Some, as in the case of families surviving martyrs and genocides, have been well served, and some, as in the case of SPF, have been given little attention. The first group and their programme have been given a great deal of attention while the second group and their programme have been mostly ignored.

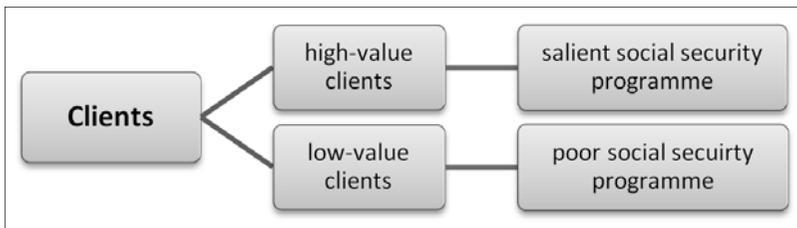
We have to be aware of the differences in the nature of both the SPF and MoMA programmes. However, the findings on the performance of MoMA and SPF programmes show that possessing administrative experiences and competency does not necessarily imply that a programme will bring about adequate outcomes. Taking into account the constant implementation of the SPF since 2001 shows that it has not made its implementation more successful than the MoMA, which potentially started as government social transfers from 2006.

Another advantage of MoMA is that in its staff recruitment policy it gives priority to, and to a high extent depends on, relatives and family

members of martyrs and genocide survivors. As research participants declared, the vast majority, if not all employees of MoMA have been recruited from programme beneficiaries. As emphasised by high officials of the MoMA, recruiting MoMA civil servants from the victims' family members has two advantages. First, it gives a job opportunity to the victims and their family members, as is already one of the ministry policies. Second, as claimed by different participants of my research, these are the best people to comprehend what martyrs and genocide families need and consequently they can treat them better while delivering services or dealing with their paperwork.

Beneficiaries' influence in the implementation process appeared when the implementers are programme beneficiaries at the same time. Hence, they can benefit from their relationship with party leaders and provide the best services for themselves as client-oriented implementers. From this perspective, the beneficiaries of the KRG's social security programmes can be divided into two groups based on their profile (see Fig. 26.1 below):

Fig. 26.1. Different Social Security Programme Based in different Profiles of Clients



First, this can be called high-value beneficiaries, those who are covered by MoMA programmes and are characterised as high profile clients of social cash transfers. MoMA beneficiaries are not just ordinary citizens, but acquire a political character. Most of them might live in a low financial condition, as the families of martyrs and genocide have in most cases lost their breadwinners, but they are not classified and served based on their needs. Even the categorisation of MoMA beneficiaries is made based on the way the victim has lost their life, or the victim's status in the hierarchy of positions on the Kurdish forces *peshmarga* and party. Being a high- or middle-ranked member of the party, especially the major ones, brings a privilege to the family in the case of loss of life, even in natural death. What can be inferred from the research findings is that not all MoMA beneficiaries are provided with decent services. Although the MoMA

recently tried to equalise the salaries of beneficiaries based on their category, the differences mostly appeared in non-cash services such as the provision of housing and health services. Beneficiaries in some areas are prioritised over others. This refers to the contest which still exists between the KDP and PUK, and what each of them does for the people in their area of influence. In this way, the KDP has done better.

What I found was that not only MoMA beneficiaries were saliently treated. In the SPF there are also numerous beneficiaries who have been entitled to a “Special Salary,” implemented in an ultimate lack of transparency. Although the employees of this project are officially related to the SPF and the directorate of Social Protection and Development in Sulaimania, there is also a difference between payments of Special Salary employees and other SPF employees. The salience of the beneficiaries is transferred to the programme and its implementers.

The second group of beneficiaries are low-value beneficiaries. Simply being poor, disabled or older does not offer the same privileges as those related to martyrs, war victims or genocide survivors. Politicians and policymakers are less concerned about the implementation of the SPF programme. As with the importance attached to MoMA beneficiaries transformed to the high profile programmes and implementers, neglect of the SPF resulted in the marginalisation of the programme and its implementers. It was only after civil protests started in February 17, 2011 that the KRG announced that it was going to look back at the poor and ignored population. Under pressure from the demonstrators, the government promised to increase the benefits of SPF fivefold, from IQD 30,000 to IQD 150,000.

In view of the two different profiles of beneficiaries and interference that have been identified, I have introduced and will try to substantiate a preference model of implementation in this chapter. This model would be examined based on the degree of salience the government attaches to beneficiaries of social cash transfers. Having distinguished two types of beneficiaries, high value and low value beneficiaries, a contradiction in perception and implementation of social security programmes in the KRG has been highlighted. Bringing evidence from my research findings, two types of treatment by the KRG towards implementation of social security programmes have been compared in Table 26.1. The first is characterised as political/nationalistic, and thus important, versus the second as public and consequently neglected. All these discussions have been justified through understanding the degree of importance attached to the beneficiaries of MoMA and SPF programmes. From this point, a clientelistic benefit from social cash transfers can be explored.

**Table 26.1. Comparisons between Social Protection Fund (and Social Safety Net) and Rights and Privileges to Families of Martyrs and Genocide Survivors**

Comparison	SPF/SSN	RPFMGS
<b>Conditions and Criteria of eligibility</b>	No-income or very low income, disabled	Victims of war, genocide operation, former veterans
<b>Target groups</b>	Very low-earners or non-earner Disabled Widows Orphans Married students on very low income	Martyr's family members Genocide survivors and their family members Political prisoners from previous regime Chemical attack victims
<b>Resources</b>	Non-contributory, regional budget	Non-contributory, regional budget
<b>Services</b>	Limited monthly cash	Decent monthly Cash Help with health costs Exemption from tax Housing unit University fees support for their children
<b>Types of benefit</b>	Means-tested benefit	Non-means tested benefit
<b>Level of benefit</b>	Income support	Additional salary
<b>Coverage</b>	Limited: fixed number of beneficiaries, if maximum number is reached	Open-ended, accept new clients
<b>Feature</b>	Public, Neglected	Nationalistic, Preferred
<b>Administration</b>	MoLSA	MoMA
<b>Models of Implementation</b>	Top-Down	Bottom-Up
<b>Achievement</b>	Failed	Effective, Successful

## 6. Concluding Remarks

Having looked at the importance in implementing MoMA, it is evident how beneficiaries of the programme can become focal actors in the implementation process. It is understandable that every social security scheme targets certain recipients. Therefore, I can assert that within the KRG's social policy context the benefits of social security schemes are distributed based on the socio-political status of recipients, not on their socio-economic conditions and needs. The government and ruling parties

assess and divide the population based on their political character and value.

In the Kurdistan region, the oil-based revenue generation on one side and foreign investment and trade-based economy on the other promoted livelihood, but consequently increased inequalities in the society. I argue that after 2003 there has not been a shortage in the budget that caused the lack of public funds for social welfare services, but rather an issue of transparency and favouritism. Most of the administrative procedures in the Kurdistan region remained linked with nepotism and not meritocracy, which kept most of the public sector grounded in party-based affiliation. Both ruling parties have always stood outside and over the government and play with the public budget to benefit themselves and their patrons. In other words, political parties make economic interests, and in turn the financial incentives stimulate party affiliation, loyalty and intensive political engagement.

The KRG has created a kind of welfare system which targets the disadvantaged population less in favour of people with party-nationalistic characters. This double standard appears when one compares the benefits delivered to beneficiaries of RPFMGV with beneficiaries of SPF or SSN. In terms of law and regulations, social protection programmes enjoy the same relative status. However, the legal framework does not necessarily result in equal treatment. Having looked at both the above programmes, one could argue that despite supportive regulations and instructions, in their implementation they could come out with different outcomes. It is also revealed that there is no balance in the services delivered between MoLSA and MoMA. The SPF declined in service until the February 2011 protests, while in the case of MoMA, services have continuously increased for the target groups. The attention given to both government programmes are also incomparable.

I can conclude that what has been prioritised in the government's agenda is not a social welfare provision, but a social cash transfer with a political/nationalistic character in support of major parties' clientelistic practices. An adequate system of welfare needs to be adopted in order to expect an equivalent interest in all government social programmes.

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CHAPTER TWENTY-SEVEN

KURDISTAN REGIONAL GOVERNMENT  
FROM NATION-BUILDING  
TO NATION-STATE BUILDING

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“... Separated by impassable mountain barriers, divided by linguistic and sectarian differences, rent by narrow tribal loyalties, and split up by international frontiers, they yearn to be what other more fortunate peoples are—a nation-state.”<sup>1</sup>

## 1. Introduction

This chapter is an analysis of the nation building to nation-state building process in Southern Kurdistan, Iraq from 1991 to 2012. Southern Kurdistan has witnessed some very short periods of being free from external rule, but none of them have lasted long with internal and international support. Iraq’s invasion of Kuwait and its catastrophic failure in 1991 caused uprisings in Southern Kurdistan, and afterwards an exodus of millions of people from the fear of chemical and biological warfare of the Iraqi state, which caught the attention of international NGOs (Non-Governmental Organisations) as well as the international society (the states) and international community (the people). As a result of the brutal treatment of civilians by the state of Iraq, international society intervened and humanitarian intervention took place in the creation of the Safe Haven and a No-fly Zone above the 36th parallel for civilians of Southern

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<sup>1</sup> Jwaideh, Wadie, (2006), *Kurdish National Movement: Its Origins and Development*, Syracuse University Press, USA, xv.

Kurdistan. The political leadership of different organisations in Southern Kurdistan in a united front took the opportunity of creating institutions such as the national assembly, executive, Judiciary, education, economy, military and diplomacy. Those institutions were the first fundamental elements of the emergent nation-building, evolving into a nation state in Southern Kurdistan. I argue in this chapter that although Kurdish nationalism has failed in the past, it is unlikely to fail this time because the process of nation building has evolved to the institutionalised stage of an “undeclared independent state.” It is therefore a combination of nation building and nation state building; it is no longer at a stage of failure, but seeking independence in a democratic Middle East in which every nation could have an equal opportunity.

In this chapter I will focus on three points:

- (1) The historical legacy of the Kurdistan National Liberation Movement’s political struggle as the dynamics of nation building
- (2) The opportunities and challenges of the KRG in the nation building process
- (3) Building institutions as the fundamental elements of transition from democratic nation building to democratic nation state building.

## **2. Historical Legacy of the Kurdistan National Liberation Movement’s Political Struggle as the Dynamics of Nation Building**

Kurdistan is a bridge among different powerful rulers from the East to the West and the North to the South, and has been an important geographical passage between continents. From ancient to the modern times it has even become a dynamic for challenges and great changes. The communities who were and are its residents have suffered over time as a result of clashes between Shahs, Emirs, Kings, Tsars, Sultans, Empires, Presidents and Prime ministers for control of this region. Those clashes have become the source of conflicts between the communities in the forms of religious or ethnic differences. In Kurdistan, two empires of Iran and Ottoman played the most destructive role up to the World War I in the name of Sunni Islam versus Shia Islam. The former implemented its policies of

Pan-Iranism with the shield of Shia Islam, whereas the Ottomans were Pan-Turkism with the shield of Sunni Islam.<sup>2</sup>

The collapse of the both empires after the war resulted in the much smaller nation-states of Iran (Persian), Turkey (Turkish), Iraq (Arab) and Syria (Arab). Those four states ideologically and politically followed a project of homogeneous nation-building and nation-state building. The so-called national frontiers of the nation-states were not based on the regional people's lingual, cultural and social interests but on the created nation-states' and the great powers' interests. Kurdistan's ethnic communities<sup>3</sup> not only lost their independence to be recognised as a sovereign nation, but even their existence domestically, regionally and internationally on the so-called official political world map.

From 1806 to 1919 the Kurdish communities<sup>4</sup> fought, resisted and rebelled in different forms and asked for protection and alliance with British and Russian rulers; however, those attempts failed and even the 1920 Sevres treaty's recognition of an independent Kurdistan became only a dream. After Sevres, the Lausanne treaty in 1923 sealed all the national ambitions of Kurdistan's communities, and the four states assumed that the Kurdish question was now buried.

A series of uprisings from Eastern, Southern and Northern Kurdistan then took place, such as the Simko, Mahmoud Barzanji, Qazi Mohammed, Mustafa Barzani, Sheikh Saied, Agiri and Dersim rebellions, all of which were. After the collapse of the Kurdistan Republic in Mahabad in 1946, a total silence continued until 1958 when Mustafa Barzani was invited to return from the Soviet Union to Baghdad. In the history of Kurdistan, for the first time a national liberation movement consisted of participants from all stratum of communities of the region and continued an active national-political struggle in Southern Kurdistan. The collapse of the movement in 1975 gave birth to a pluralist political environment. The 1979 revolution in

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<sup>2</sup> Van Bruinessen, Martin. "Kurdish Path to Nation," in Jabar A. Faleh and Dawood, Hosham, eds. *The Kurds: Nationalism and Politics*, (SAQI, London, San Francisco, Beirut, 2006), 21–43.

<sup>3</sup> Up to the 1880s the communities living in Kurdistan—Assyrians, Chaldeans, Armenians and Jews—were doing so in peace and harmony with the Kurds. After the establishment of the Committee of Union and Progress (CUP), the idea of the Turkish nation building project, based on the elimination of non-Muslim communities, took place and created conflicts between the communities. Nonetheless, the Kurds saved many lives from brutal and systematic genocide by the CUP.

<sup>4</sup> The Kurds are also not a homogeneous social group, as Kurmanjs, Zazas, Yezidis, Sorans, Bahdinans, Hewramans, Gorans and Lors identify themselves as communities of Kurdistan.

Iran created another opportunity, and the Iran-Iraq war, Iraq's occupation of Kuwait and the defeat of the Iraqi state by the US-led international coalition opened a Pandora's Box in the Middle East. Southern Kurdistan gained recognition as a de facto state by the international community in April 1991, and following the deposition of the Ba'ath regime it became a legitimate and internationally recognised entity.

Historical resistance became a tradition and a legacy for self-government from 1806 to 1991, and has left a tradition of desiring independence and connection to the past history of the inhabitants of Kurdistan. That tradition and memories of the past is interlinked and has been transmitted from generation to generation, forming their identity. This identity has been shaped on a territory with a strong feeling of having a history and where their ancestors used the same language. In modern times this identity has been called the *nation*, which in Latin means birth or place of origin, but also it means a community that shares the same opinion and a common purpose. Historically belonging to the same territory, sharing the past memories of resistance and following that tradition has shaped them, and communicating and understanding a more or less common language, and identifying themselves as the members of a common purpose are the essential elements and dynamics for the nation-building process in wider Kurdistan, and in Southern Kurdistan in particular.

This legacy has also been empowered with the political culture of the communities of Kurdistan. For example, the tragedy of the civil war has shown that because of the heterogeneity of the reality on the ground, the communities do not except the rule of only one actor but respect collectiveness and sharing. The historical resistance of Kurdistan's communities have the purpose of seeking freedom and equality rather than superiority, excepting and tolerating the differences in a pluralist civil democratic society rather following only one path, similar to the Turkish nation building process which aimed to homogenise different ethnic groups and assimilate the other languages on the base of one language, one nation and one country.

### **3. Opportunities and Challenges: The KRG in the Nation Building Process**

The defeat of the Iraqi army in Kuwait, uprisings in Southern Kurdistan and the exodus of millions of civilians put huge pressure on the international society and community to save the lives of civilians. International humanitarian intervention for the first time since the Cold

War took place in the centre of the Middle East, and it was assumed as a precursor to fundamental changes in the region. The golden opportunity for a long-lasting national liberation in Kurdistan to operate and achieve to its aims was created by the international humanitarian intervention. The Kurdish political leadership in the form of a broad coalition chose to negotiate with the central government in Baghdad. When the Kurdish leadership was convinced that the negotiation would go nowhere according to their past experiences the negotiations ceased with the central government and a collective decision was made for elections in Kurdistan, and finally the first free Kurdistan National Assembly was elected and declared its existence in May 1992.

The Kurdistan National Assembly consisted of elected members of different political parties as well as Assyrians, Chaldeans, Armenians and Turkmen, who had lived for a long time in exile and with a long history of conflict with the state, as well as each other. Although it was a great opportunity to run the affairs through an elected institution, it was a difficult task to bring together different ideological and political factions in a broad national coalition, of which there was no historical or traditional experience. This was one of the hardest challenges to overcome.

The two predominant parties of the KDP and the PUK, along with other smaller parties, set up a national coalition for the Kurdistan Regional Government. With the Kurdistan National Assembly, the Kurdistan Regional Government and the judiciary as the three pillars of the emergent democracy, despite the de facto opportunity from the international society, the challenges were huge, and were both internal and external. The internal challenges were and still are that the communities of Kurdistan in Southern Kurdistan being divided into Sorani, Kurmanji/Bahdinani, Gorani and Hawramani in lingual terms, Sunni Shafii, Sunni Qadiri, Sunni Naqshbandi, Shia twelve Imamate (Fayli), Ahli Haq, Yaresan, Kakayi, Yezidi and Shabak in religious terms, and on top of all these divisions tribalism and political parties' conflict with the minorities are serious challenges and build the common purpose for the emergent nation building project.<sup>5</sup>

The KRG as the legal governing authority of running and controlling the daily affairs of the Kurdistan region had an agenda to establish the necessary institutions, of which security, education, the economy and the judiciary were the most important. For instance, in dealing with which education dialects were needed, if Sorani were chosen then the Bahdinani

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<sup>5</sup> Natali, Denise, *The Kurds and the State: Evolving National Identity in Iraq, Turkey and Iran*, Syracuse, New York, Syracuse University Press, 2005, xvii–xxx.

would have been unhappy, and vice versa. Therefore, from its establishment the policies chosen for education are pluralistic and democratic. In Sorani-speaking areas the primary education is in Sorani, and in Bahdinani-speaking areas it is in Bahdinani. Because Yezidis and Shabaks speak the dominant dialect of the area, for them the education is in Bahdinani. Among the Kakayi, Hawramani and Fayli, because they speak Sorani the education is in Sorani. For the Assyrians, Chaldeans, Armenians and Turkmens, education is in their native languages.

This policy of the KRG shows that the whole concept of nation building is not similar to the Arabic, Persian or Turkish examples that are based on the elimination and assimilation of other ethnic and religious communities, but that it rather supports differences as part of the mosaic of social and cultural richness. It is a policy based on democratic pluralism and respects the individual, rather than taking social engineering and a political project to imagine the community they are assumed to be.

The society as a whole in Southern Kurdistan, politically and nationally, shares the common purpose and is in favour of separation from Baghdad, and if they are given a referendum they will vote for independence overwhelmingly. Cultural, dialectical and sectarian differences are less important than the political and national identity of the territory they live in. Although Southern Kurdistan is still not an independent state, as in the case of its four neighbouring states, and there has not been an official ideology basing the superiority of one ethnic group over another to create one homogenous nation, the common purpose is a shared history of belonging to the geography and living equally. Therefore, the historical belonging has accumulated a culture and a common tradition and economic relations between the people, and despite of the deep artificial differences and divisions created by the ruling states, they share the common purpose proved according to the referendum in January 2005 wherein the overwhelming majority of the communities of Kurdistan voted for independence.<sup>6</sup>

In terms of internal opportunities the resources are huge, despite the dialectical, cultural and sectarian differences between the communities of Kurdistan in both the KRG area and the disputed Kurdistan territory from Shingar to Mosul, Kirkuk and Khaniqin. Socially, they do not see distances from one other, rather understanding themselves as a unit. For instance, when the civil war was at its summit in 1994–96 there was no

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<sup>6</sup> Stansfield, Gareth “Finding a Dangerous Equilibrium: Internal Politics in Iraqi Kurdistan-Parties, Tribes, Religion and Ethnicity considered,” in Faleh A Jabar and Hosham Dawod, *The Kurds: Nationalism and Politics*, (London, San Francisco, Beirut: Saqi, 2006), 270.

serious social tension between the communities. Culturally, they celebrate the same festivals and norms and values, and marriage between Hewler, Suliamania, Kirkuk and Duhok has become a common occurrence, and they trade goods and services with each other. If we account for these dynamics as the fundamental characteristics for nation building in southern Kurdistan, the process of developing and evolving as an engine totally depends on the policies of the government.

Moreover, the Kurdistan National Liberation Movement's rational choice of acting as united front with the international community and legitimising the federal legal status internally, along with the readiness of the communities of the KRG area as well as the disputed areas of Southern Kurdistan for the nation building process, put a great responsibility on the KRG for transparent, accountable, democratic and pluralistic policies. These are interlinked with external and internal opportunities, however, and the two predominant actors united for nation building that was paused during 1994 to 1996, but restarted following the intervention of external actors.

The challenges are both internal and external. Internal challenges, as mentioned, are the Kurdistan communities many dialectical, sectarian and tribal differences. They have rarely had a long-established national institution in their history and have mostly been ruled by others, despite of the short period of running their affairs locally. Taking this into consideration, the KRG needs to act democratically to encourage and stimulate the moderate, civic political and cultural institutions to flourish, and this is the first challenge.<sup>7</sup>

The second challenge is to unify the Kurdistan territory from Shingar to Mosul, and Kirkuk to Khaniqin, because almost half of the Southern Kurdistan region is not under the rule of the KRG. Those are disputed territories as well as the most fertile land. Thirdly, the KRG needs to take into account the influence of the ruling state's official ideology and how it has played a destructive role, something which needs to be healed democratically as well as taking minority rights to be equal to the majority rights. Fourthly, modern technology has made communication and the transition of ideas very easy. In Southern Kurdistan there are many TV channels, radio stations and social media networks. These are dynamics for nation building process in Southern Kurdistan.

The security of the geography of the emergent nation needs to be protected by the armed forces—the Peshmerga. Not only do the Peshmerga control the KRG territory, but the federal Iraqi army also

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<sup>7</sup> Natali, 181–189

protects the disputed Kurdistan territory. The KRG still challenges the federal government's policies to protect the quasi-independence of the Peshmerga from Iraqi army.

The economy of the region is mostly based on hydrocarbon revenues, which has become a source of great tension between the KRG and the federal government. The contracts of the KRG with international oil-excavating companies are still causing tension and have not been proved to be legal contracts by the federal government. The KRG needs to have policies on fundamental infrastructural developments in terms of economy and industrialisation. The economy of Kurdistan in terms of agriculture can be developed very quickly and the revenues from the hydrocarbon can be invested into modern developed industry.<sup>8</sup>

Any political and diplomatic move by the KRG is under scrutiny by the federal government and have been called separatist acts, despite the distinction of the Kurdistan region in the permanent federal constitution. Even the central government never mentions the constitution as federal, and they are in favour of changes and alterations.

The external challenges are centre on the four states of Turkey, Iran, Iraq and Syria's influence at the international level, because the official ideology of these nation-states have persuaded the international society that Kurds and Kurdistan do not exist. This unjust regional and international system acts against the will of the people of Kurdistan and needs to be challenged. A struggle for the implementation and declaration of the right to self-determination needs to be put on the agenda of the regional as well as international organisations.

Another important challenge for the KRG is to take the resources of the surrounding Northern, Eastern and south-western parts of Kurdistan into consideration, and how the reciprocal actions and interactions impact and influence each other. The struggle for universal national and human rights in these parts are ongoing, and are influenced by progression and developments and have an impact on the policies of the KRG. Although the KRG is not yet an independent state, expectations are high. For instance, the KRG played a role as mediator in creating a ceasefire between the PJAK (Partiya Jiyana Azad a Kurdistan—the Kurdistan Free Life Party) and Iran in 2011, and regarding the conflict between Turkey and the PKK (Partiya Karkeren Kurdistan—the Kurdistan Worker's Party) there is still an assumption that the Oslo negotiations and the exchange of peace protocols between Turkey and the PKK would not have taken place

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<sup>8</sup> Stansfield, Gareth "From Civil War to Calculated Compromise: The Unification of the Kurdistan regional government," in Robert Lowe and Gareth Stansfield ed. *The Kurdish Policy Imperative* (London, Chatham House, 2010), 131–143

without the acknowledgment of the KRG officials. Finally, in the modern political history of Kurdistan the ground-breaking Hewler agreement between the ENKS (Encumena Netewiya Kurden Suriya—the Syrian Kurds' National Council) and the EGRK (Encumena Gel e Rojavaye Kurdistan—the Western Kurdistan People's Council) in south-western Kurdistan shows how the nation building process is connected with all parts of Kurdistan. In this self-explanatory trans-state nature of the nation building process, Southern Kurdistan cannot be considered on its own, but as having impacts, influences and interactions on all four parts of Kurdistan.

#### **4. Building Institutions as the Fundamental Elements of Nation Building to Nation State Building**

In a country like Kurdistan, as quoted from Jwaideh, constructing institutions for governing the territory has not been an easy and simple task, because on the one hand the internal barriers such as political fragmentation, sectarian divisions, lingual differentiations plus the central government's unwillingness to address the depopulated, disputed Arabised Kurdistan territories, and on the other hand its being surrounded by the regional nation states that do not accept its existence and the huge impact of their lobbying on the international society. Given these aspects of Southern Kurdistan, it is obvious that internal and external interventions have not allowed the KRG to construct the necessary institutions. A destructive civil war between political parties, and internal and external sanctions, have created burdens and the division of the KRG into two separate administrations did not allow for the creation of the institutions.

The KRG, according to the Washington agreement of September 1998, were supposed to be immediately recognised under a unified administration; however, it was only implemented after the collapse of the Ba'ath regime in 2003. From 2003 to 2005, most of the time was spend on writing the constitution, conducting elections and addressing the reunification issues of the two separate KRGs. In fact, from 2006 to today the KRG has functioned in Kurdistan as a quasi-state, building institutions of education, economy, local governance and constructing roads, schools, colleges, universities and two major international airports, with the third to come in Duhok.

The political alliance of the two dominant parties the KDP (Democratic Party of Kurdistan) and the PUK (Patriotic Union of Kurdistan) has become a major reason for the development and construction of Southern Kurdistan. This has allowed for the construction of roads and bridges, the

rebuilding of villages and towns, and the functioning of agriculture and farming, despite the shortcomings.

Education has become a priority of the KRG. Thousands of schools have been built for primary and secondary education, and colleges and universities are all functioning at an international standard. While the number of the universities at the time of the collapse of Ba'ath regime was only two, today in three provinces plus Kirkuk there are more than seventeen, funded by the KRG. Today the ministry of higher education of the KRG each year gives nearly two thousand scholarships to graduates for Master's and PhD studies around the world in different fields. This programme will in the near future boost the number of skilful educated technocrats in the region and improve self-sufficiency in all needed disciplines and fields.<sup>9</sup>

Economy and trade occupies a great importance in the developing programmes of the KRG. Because of the richness of natural resources such as hydrocarbon and water, worldwide companies such as Chevron, Shell, Exxon Mobil and Total have invested in Kurdistan. The KRG is now functioning as a trade partner with the US, UK, EU, Japan, South Korea, China, Turkey, Iran and the Gulf countries. These global economic relations have inevitably made the KRG a regional and global actor with trade and diplomatic missions in Washington DC, London, Paris, Moscow and Beijing. Ironically, Turkey is the number one trade partner of the KRG.

The KRG have managed to bring the world's powerful actors to the capital city of Hewler, and the number of diplomatic missions are increasing day to day.

In terms of security, Kurdistan has become the most secure region of federal Iraq. It has its own military, the Peshmerga, with security and intelligence forces functioning not only in the KRG territory but also effectively in the disputed cities and territories of Kirkuk, Mosul, Shingar and Khaniqin.

In terms of the judiciary, the KRG has its own magistrates and criminal, civil and high courts according to the regional constitution, in association with the federal judiciary.

Furthermore, there is also a democratic environment which provides opportunities to vigilant civil society organisations which is still evolving, representing a huge pluralistic democratic development in comparison to

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<sup>9</sup> Interview with the President of the Kurdistan Regional Government, Massoud Barzani, by l'essentiel French Magazine. <http://www.krp.org/english/articledisplay.aspx?id=HCm1GdUZni=> (accessed September 29, 2012).

its neighbours. Although the KRG is still a nascent democratic entity in comparison to its neighbouring countries, in terms of rights and freedoms the progression towards active civil society including different NGOs it provides a unique example, demonstrated in such things as freedom of expression, freedom to criticise the government's policies, freedom to print opposition ideas, and so on.

The KRG not only has its own national assembly of the Kurdistan region, but also has power sharing in the federal government with a mission at the highest levels of the federal government, such as the president, the foreign ministry, the deputy prime minister and many other ministries and duties in the federal parliament.

All these developments have become major reasons for the authority of the KRG to promote these institutions in a unified apparatus to function independently from the federal government.

New institutions in Southern Kurdistan and the political structure and cultures in the process of evolution have totally changed the old institutions, which represented the colonial era. The communities of Kurdistan have a long history of resistance against national, political and social inequalities and brutal treatment in the past, and expect an egalitarian system based on social justice and equal treatment from politics to education and economy; in other words a fair distribution of justice, because of the very heavy price over the years and many generations. Inevitably the KRG will not be able to overcome and meet all the expectations of its inhabitants in a short time. These are huge internal and external challenges and shortcomings. However, these are barriers which occur in all societies, even evident in the last parliament of the UK.

Therefore, despite all the mentioned challenges and difficulties, the KRG is moving towards a multifunctional institution, to be transparent, accountable and democratic, to listen to the people's needs and to provide them with a prosperous future, rather than be an example of coercive brutality, exploiting the natural resources of its country. Therefore, a pluralistic democratic vision needs to make the institutions of the state work for a strong and powerful civil society.

In terms of advancing the nation state institutions to the independent state level, while it has not solved all the outstanding issues with the federal government, it could be possible to take such an action. When the KRG makes a statement that the right to self-determination is their universal right to exercise, they desire their independent state to function independently from the federal state in Baghdad. But they also mention that when the time arrives the decision will be taken, which means an independent nation state.

This approach can be analysed from different angles. Firstly, the KRG might have been convinced by the international society and the most powerful actors in the international political arena that their decision would be recognised, as it has many contracts with global cartels. Secondly, the KRG might have reached the decision, after exactly half a century since the September Revolution in 1961, that they cannot coexist under the same roof as the federal government in Baghdad, and have lost the hope of finding a solution for the implementation of article 140 and all the disputed territories. Thirdly, the KRG could have thought that the only method of successful nation building is to listen to the people, as when they voted 98.8 % in favour of independence in 2005.

Over 1991 to 2012, Southern Kurdistan has become the centre of attention of all parts of Kurdistan, and its sustainability has become the source of hope for the future of an independent and united Kurdistan, at least in the hearts and mind of all citizens of Kurdistan. The new changes and challenges in the Middle East are foretelling a new era. The events of south-western Kurdistan and the declaration of the Kurdish Supreme Committee create an umbrella for unification of the political actors of that part with the mediation of the President of the KRG. Kurdistan is almost free from Mandalli and Khaniqin to the Mediterranean Sea. It could also even encourage the KRG officials to put the hydrocarbon of Kurdistan on the global market directly via south-western Kurdistan.

The institutions are the mechanisms for organising and implementing the plans, programmes and projects of a state to achieve its aims. Although the state is a coercive force and uses violent methods to enforce rules, it could also be a democratic, pluralistic and be based on the fundamental principles of an egalitarian society, distributing justice and equality. Taking the Swiss example, which accommodates the French, German and Italian languages as official languages of the state, then Kurdistan should look to achieve something similar. It could do this, but not with the situation in which it currently exists. An early move of declaring an independent state in Southern Kurdistan needs to be well researched and thought through broadly .

## **5. Conclusion**

The process of nation building and nation state building in Southern Kurdistan are intertwined and interlinked, as mentioned above. The historical legacy of resistance has managed to overcome the challenges of 1990s and use these opportunities to create state institutions as the foundation of their future independent state. The nation building and

nation state building in Kurdistan is a different process to that of the Sunni Islam, Persian on Shia Islam, and the ethnic Turkish. From the beginning, the Kurds have based it on an egalitarian, democratic, pluralistic and equal opportunities foundation. This is a pluralistic culture that has been shaped over thousands of years in Kurdistan, and until recently the Kurds, Assyrians, Chaldeans and Armenians have lived peacefully, side by side. The nation building in Southern Kurdistan also takes into consideration the other three parts' sensitivities, as well as their similarities and differences. The nation building since 1991 has shown to the communities of Kurdistan that it is a democratic, pluralistic, civic and modern example to the rest of the Middle East.

Despite the shortcomings, the fiscal and budgetary dependency on Baghdad, nepotism, mismanagement and corruption in the Kurdistan region, the three entities of the Kurdistan Presidency, the Kurdistan assembly and the Kurdistan Regional Government have been able to leave internal disagreements behind and move forward as a legitimate international actor, not only managing to run the region but also make impacts beyond its borders.

The words of Wadie Jwaideh offer a fitting conclusion:

Today the Kurds occupy an extremely important region in the heart of the Middle East. They constitute the most important single national minority in that area, forming a substantial proportion of the populations of Turkey, Iran, Iraq, and Syria. Despite the failure of numerous Kurdish rebellions in Turkey, Iran, and Iraq, Kurdish nationalism continues to be a source of deep concern to the government of these countries. Aroused by the success surrounding nationalisms—Turkish, Persian, and Arab—and goaded into desperation by its own failures, Kurdish nationalism has become increasingly radical and uncompromising. For these reasons, the Kurds have come to play an increasingly significant role in Middle Eastern affairs. Their behaviour is one of the important factors in the future stability and security not only of the Kurdish inhabited countries, but also of the entire Middle East. Thus, it is important to know the Kurds and to understand their aims, their political orientation, and the course they are likely to pursue.<sup>10</sup>

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<sup>10</sup> Jwaideh 2006, xv.

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# **PART X**

## **SUMMARY REPORT OF THE CONGRESS**

# CHAPTER TWENTY-EIGHT

## BUILDING A NATION WITH DIASPORA SUPPORT: REPORT AND REFLECTIONS FROM WORLD KURDISH CONGRESS 2012

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The goals of the World Kurdish Congress, since it was created in 2011, have been to:

- mobilize the diaspora in support of its people and inspire the new diaspora generation
- build a bridge between scholars within and outside of Kurdistan
- support government institutions and universities in Kurdistan through science and culture
- implement the research ideas and practical knowledge generated by Kurdish and non-Kurdish scientists worldwide to support the KRG.

Through the World Kurdish Congress 2012, the Kurdish leadership was offered scientifically-based guidelines and long-term strategies for dealing with vital issues for all Kurds and the region of Kurdistan.

### **1. Introduction**

The WKC has sought to organize and mobilize the diaspora to meet the current and future challenges to support the Kurdish people and inspire the

new diaspora generation to ensure their involvement in nation building and also that they participate in creating freedom for Kurdistan with their intellectual capacity. The WKC's hope was to build a bridge between scholars both in and outside of Kurdistan, and through science and culture support government institutions and universities.

The following is an evaluation of the World Kurdish Congress 2012 compiled by Alan Dilani and Carol Prunhuber, with significant input from the WKC Scientific and Organizing WKC Committee Members. The contributors analyzed and summarized the successes of the congress as well as its challenges, taking into account the feedback received from many of the six hundred delegates who attended.

The goal of this report is to examine the event as a whole—its many successes and its weak areas. It is a reflection of what the congress achieved, what can be improved and what the next steps for the future WKC events are.

This analysis will cover many aspects of the congress, from inception, to production and completion. It also lays out a general organizational and content analysis of the congress with an eye to future events.

The final section of the report outlines the “Next Steps” for improving the upcoming WKC 2013. It discusses future directions, ways to reorganize the WKC with new directives and an organizational structure that involves and inspires as many intellectuals as possible.

This report also describes actual projects that were generated by WKC 2012.

## **2. Overview of WKC 2012**

The second World Kurdish Congress was held in Erbil from October 11–14, 2012. It was a highly successful event. Accolades have streamed in from countless international participants, and many of these remarks are included in this report.

The participation of Kurds from all parts of Kurdistan sent a strong message to neighbouring countries that the Kurds are united. The presence of many TV channels—local Kurdish, Turkish and Arabic—also sent a clear message that the Kurds are focusing on science.

Our aim is to further strengthen the impacts of future World Kurdish Congress events to bring real and lasting innovation. An event of this scale requires seamless building blocks to create an optimal effect. This is evidenced in the overall evaluation and objective review provided by many delegates who in their reviews were asked to honestly and

proactively keep in the forefront of their critiques the need to improve future activities.

The WKC 2012 presented a tremendous opportunity for the KRG and for those in attendance. More than six hundred scholars came together from the diaspora and Kurdistan and created an environment of informative scientific dialogue and international networking. Much enthusiasm was generated, and connections were made over the shared goal to set forth projects and bring professional knowledge in support of the Kurdistan Regional Government, institutions and universities.

The generosity of the KRG in funding the congress cannot be over emphasized. The extensive scope of the WKC 2012 would not have taken place without the government's participation. Economic support provided by the government enabled the WKC to expand in countless ways. The delegate base grew; competent presenters who would have otherwise been unable to attend gratefully travelled to Erbil. It became an international event. Seeds were cast that are now germinating within thirty-two countries. The Kurdish cause rose to the forefront. Solutions were presented for possibilities to become manifest realities.

In his opening speech on the first day of the congress, President Massoud Barzani said that it was important to work together for the improvement of the region: "We hope with your knowledge and expertise and in partnership with the requisite authorities that you can apply your experiences to eliminate the shortcomings in Kurdistan."

Falah Bakir also referred to President Barzani's opening speech: "As our President said, we should not be focused only in constructing buildings, but also upon building human values, democracy, justice and social welfare."

Starting with the call for papers, we received more than one hundred entries. Once registration was opened for delegates, the international response was enormous. There were fifty-three presenters and fifty-two posters displayed.

Among the delegates we had several MPs from Canada, Sweden, two American Generals, diplomats and a delegation from Israel.

### **Successes of the WKC 2012 include**

- A brighter future was for Kurdistan, disseminated globally through all congress participants
- Awareness expanded regarding areas needing improvement
- High level participants attended from the UK, Canada, Australia, and the Scandinavian countries

- The political involvement of the KRG was a plus, including the session with KRG ministers and universities
- Diasporans left the WKC eager to offer more to Kurdistan. Some want to return; others are offering their knowledge in projects that will continue to benefit the region
- Vast expansion of Kurdish networking
- Dissemination of knowledge to enhance life in Kurdistan—practical, informational, current, relevant.

### **Emails of appreciation**

“Like many others at the conference who were inspired, I am also currently thinking of going back to Kurdistan to complete my PhD. The reason why I am sharing this with you is because no way in a million years would I have considered going back to the Middle East to do any work. But thanks to you we now see a different side of Kurdistan and many reasons why we should consider helping to rebuild a nation that struggled for many years.”

Afsaneh Jolan from Australia

“I am writing to thank you for your vision, hard work, generosity and hospitality. The meeting was great. I met many people and learned many things from the conference attendees and also as a result of being in Kurdistan. I congratulate you all for succeeding in bringing together scholars from Kurdistan and Diaspora.”

Diako Ebrahimi from Australia

“Thanks very much for your efforts to organize such a valuable conference. I enjoyed the days I attended and took very valuable notes from the lectures and presentations of the participants. I hope that this congress is going to continue and progress, and hopefully by the conference next year, I will be able to participate with a scientific research.”

Jihan R. Sindi from Kurdistan

Advisor at the Presidency of Council of KRG Ministers

“First of all I would like to thank you all for your courage in arranging this event, bringing the Kurdish people together in the capital of Kurdistan from the entire world. Without the KRG’s economic support, that large number of participants from abroad would not have been possible. I have to mention that personally this is the first time that I have participated in such a huge, scientific congress where Kurds and non-Kurds from all over the world were gathered.”

Mariwan Baker from Sweden

### **Areas to improve**

- Logistics of the congress program
- Increased attention to organizational and congress timelines
- Poster displays
- Need for increased professionalism in WKC event.

The WKC 2012 had two organizers: (1) the WKC team abroad, and (2) the Department of Foreign Relations in Erbil. Responsibilities were divided between these two main organizers.

The WKC team abroad was responsible for creating the content for the congress including the website. It communicated with the participants and set up the scientific content/program of WKC.

The KRG was responsible for the congress logistics which included monetary assistance to countless participants, congress welcome, entertainment, hall set-up including technical areas of audio and visual, budget, accommodations & flights, and reimbursements of tickets.

## **3. Organization of WKC Prior To Conference**

### **International Promotion**

The conference promotion was very successful due to:

- Website announcement and call for papers as sent to the WKC mailing list and media, which generated interest
- Timely response to emails sent to the WKC account by the organizing committee.

### **Organizing Committee**

The OC made an enormous effort and was successful in getting the conference rolling. A team travelled to Kurdistan to work with the Department of Foreign Relations (DFR) to gain clarity about the needs and direction of the KRG for the event.

### **Abstract Submission Process**

The variety of presentation subjects amongst hundreds of speakers was the successful contribution to the congress from Kurdish scientists worldwide. The majority of papers presented were of a high quality. They held

relevance to the congress and were beneficial to the growth of Kurdistan as a nation.

- More than one hundred abstracts were submitted and subsequently evaluated by the scientific committee
- The majority of abstracts submitted for the congress were evaluated anonymously and selected by the scientific committee.

### **Local Participation**

The major challenge of the congress was to involve as many delegates as possible from Kurdistan. A wide variety of people from different universities and government institutions attended the WKC. Additionally, many more academicians within Kurdistan later expressed their desire to attend this important conference.

In the future, the Department of Foreign Relations can create a list for future conferences of specific departments within universities and institutions that should be included in the WKC.

### **Quality of Actual WKC Presentations**

The topics presented during the WKC included the latest research in the fields of health and medical science, agriculture, higher education, economics, politics, human rights, sustainable and healthy development and the necessary infrastructure to support the Kurdistan Regional Government in its growth building mission.

There were different opinions regarding the quality of the presentations. Overall, delegates expressed recognition of the erudite subject matter and high quality of material.

“Interesting and high standard presentations, even though there were a few presentations which were not of such a high standard. Most of the topics were scientifically informative.”

Mariwan Baker, Sweden

### **Session with Ministers and Universities**

Several KRG ministers attended the WKC to discuss current issues in their respective fields and to present strategies regarding the challenges ahead. Among them were Minister Falah Bakir, Head of the Department of Foreign Relations, Prof. Serwan Baban, Minister of Agriculture and Water Resources, Dr. Ashti Hawrami, Minister of Natural Resources, Dr. Rekawt

Hama Rasheed, Minister of Health, Dr. Asmat Muhamad Khalid, Minister of Education, Dr. Ali Saeed, Minister of Higher Education and Scientific Research, and Ali Sindi, Minister of Planning. In the afternoon session, representatives of the universities of Dohuk, Salahadeen and University of Kurdistan Hawler discussed the vision and missions of their universities.

“The participation of the ministers and directors of the universities, along with the opportunity to direct questions to them, was highly appreciated.”

#### **4. WKC Organization During the Conference**

Both infrastructure and organization are key to the production of a conference of this size and complexity, and these elements can make or break a gathering. Rather than carrying away the main message of the program, if participants leave the conference remembering logistical details that were lacking, this is most unfortunate. Future WKC programs will pay greater attention to these critical areas.

Some logistical areas need improvement to facilitate the inclusion of an ever-growing international participation. This will enable the WKC to continue drawing a global participant list in the future. Basic structural elements need to be sound and effortless. When there is such professional content, learned speakers and impeccable organization, the result is an outstanding and successful conference. All these aspects run in parallel.

#### **Discussion Periods**

Delegates participated very actively during discussion time. Networking took place—one of the primary goals of the WKC—and much positive feedback came in regarding this program component. Delegates were highly interested in these sessions. They were able to interact, share ideas, come up with creative solutions and make contacts.

The following are other recommendations from delegates:

- The presentations could be converted to PDFs at the end of each day and instantly uploaded to the WKC website. On the last day, all presentations could be burned onto one disc and distributed to the delegates, with copies being sent to all the universities in Kurdistan.
- A fast video camera could be placed in the hall to record all the presentations and copies distributed to the universities in Kurdistan.

This process would disseminate the WKC program content much more widely.

- Create parallel sessions on different subjects.
- Most participants and speakers were from the diaspora. Adding more local participants would enhance the conference.
- There was a small percentage of women participants, as both speakers and delegates. their participation needs to be expanded in future CONGRESSES.

### **Poster Display**

The fifty individuals who submitted papers and were not accepted as speakers were invited to bring a poster to present their research paper. These participants put much time and energy into creating their beautiful and thorough poster displays. They felt honoured and grateful to be able to participate in this way.

The delegates were genuinely interested in these posters. During coffee breaks, much dialogue took place with the authors. This is another program element that is highly successful and needs to be professionally handled in the future to further enhance its value.

### **Recommendations**

- Ensure that the poster display is aesthetically presented and given its due import.
- Someone with design skill could be appointed so the display is both pleasing and impressive.
- In the future, ensure that there is a space in the congress that is suitable not only for poster displays, but also for the authors to make short showcase presentations of their work.

#### **The following are recommendations for future poster display from delegates**

“After the presentations, posters are the next most important aspect in such a conference. The posters could be arranged to attract the attendants’ attention. Zigzag placing, with parallel, has shown to be elegant and attracts participants. Choose the best posters and award them prizes. A prize for each field, such as health, politic, economy, culture etc. could be awarded. This would give some meaning to the posters. It would also be a good idea to arrange five minute poster-presentations, which could take place during the coffee/tea break.”

Delegate from Sweden

“The organization of the poster-setting shows considerable shortcomings. For instance, it was not clear enough who was responsible for the technical issues related to this part of the conference.”

Mariwan Baker, Sweden

### **Communication and language recommendations**

By October 2014, the WKC would aim to:

- Assemble a team of experts to propose a strategic plan for unifying Kurdish language varieties such that a single standard Kurdish language can be used in the education system inside and outside Kurdistan. The aim would be to present the strategic plan and the initial outcome at the WKC 2013, and the final work at WKC 2014. This program also provides a comprehensive report and documentation that can be used to officially register Kurdish language as a community language outside Kurdistan.
- Invite a distinguished leader (e.g. the Dalai Lama) or a Kurdish advocate writer (e.g. Quil Lawrence) to speak at the WKC 2014

“In order to achieve those goals, there could be a team of language experts. The WKC could initiate it by creating an online forum by which language experts communicate. As funding would be needed, the WKC could attract funding and donations using dedicated accounts.

Also given that one of the aims of the WKC 2012 was to create a bridge between Kurdistan and the diaspora, an online forum to enable communication between attendees would be a necessary tool. The WKC could create a free email group (yahoo/google) for this purpose.”

Diako Ebrahimi Mohammadi, Delegate from Australia

### **WKC positive outcomes**

As previously stated, one of the main outcomes of the congress was the extensive networking that took place among the delegates. Communication also took place between delegates and governmental departments and universities within Kurdistan.

Two months after the WKC 2012, several projects resulting from network dialogue and inspiration have been submitted for consideration to the KRG that will enhance various aspects of life in Kurdistan.

### **Kurdish studies network**

Many members of the Kurdish Studies Network met for the first time during the WKC. The congress provided a platform for them to meet one another and network with other Kurdish scholars, enabling them to bring forth new ideas and projects.

“The Second World Kurdish Congress in Erbil was the first time some of us actually got to meet face to face,” Zeydanlıoğlu told *Rudaw*. He added that it was at the conference that the decision to establish a journal for Kurdish studies was made. “At the moment, no journal of Kurdish studies exists, that meets international academic requirements and standards, while other fields can have several journals,” Zeydanlıoğlu said

(Rudaw.net <http://www.rudaw.net/english/kurds/5367.html>).

For Welat Zeydanlıoğlu, the KSN is a tool and platform that:

... will benefit the scholars who study the Kurds and in turn Kurdistan and the wider region. This is especially so for the scholars in Kurdistan who do not have the same privileges as us in the West. Through the Kurdish Studies Network, which now has evolved into a scholarly network with 700 members comprised mostly of scholars active in the field, it has become easier for scholars from Kurdistan and elsewhere to access their colleagues in the West without the usual hurdles and hierarchies. We want this ease to increase and intensify so there will be more collaboration to assist the progressive development of Kurdistan.

### **World wide directory of kurdish businesses**

“The first ever World Wide Directory of Kurdish Businesses, Professionals and individuals is due to be released in early 2013. After 2 years of hard work and dedication, finally Kurdish communities around the world can enjoy their own network of networks. This is the first of its kind in the world, a *Kurdish Directory / Kurdish Ancestry* is dedicated to serve the Kurdish nation in Kurdistan and Diaspora, with first-class inherently secure networks of individuals, businesses and professionals all in one place.”

Farzad Sanati, Delegate from Australia  
<http://farzadsanati.blogspot.com.au/>

### **The following proposals were submitted to different ministries of the KRG**

Mostafa Khezry from Washington, D.C. met in Erbil with Dr. Ali Saeed Mohammad and proposed the transfer of Columbia University’s semester-

long course on Conflict Resolution and Social Harmony to universities in the Kurdistan region and Kirkuk. To initiate activities, Columbia's program on Peace-building and Rights at the Institute for the Study of Human Rights will work with the KRG's Ministry of Higher Education and Scientific Research in Erbil to organize training and transfer of the curriculum to educators from public and private universities in the Kurdistan Region, as well as Kirkuk. Columbia University stands ready to assist the Ministry of Higher Education and Scientific Research to implement the project once the ministry moves ahead on the project. Adoption of this program will further facilitate collaborations between Kurdish universities and the colleges of Columbia University.

### **Background**

Supported by the U.S. Department of State, Columbia University prepared a curriculum on Conflict Resolution and Social Harmony with Sri Lanka's Ministry for Higher Education for use during the orientation of incoming university freshmen across the country and as a semester-long course. Discussions are underway to transfer the curriculum to educators in Myanmar, South Sudan and Macedonia. The curriculum provides a comprehensive experiential course incorporating theoretical and practical lessons on communication, empathic relations, non-violent conflict resolution and consensus building. Participation in the course provides an opportunity for students to:

- Develop self-awareness and awareness of others.
- Understand how conflicts and problems arise, and how they can be constructively solved.
- Improve effective communication skills to prevent and resolve conflict.
- Learn and practice the basic skills of collaborative problem solving.
- Identify ways each individual can contribute to social harmony in their communities.

### **Activities**

The proposed project will establish the curriculum at universities in the Kurdistan Region and Kirkuk University. The curriculum is also offered in a three day seminar format, which can be made available to politicians, trade union members, business persons, and tribal and religious leaders in the Kirkuk area.

The following activities are envisioned:

- **Assessment Trip.** Columbia faculty/personnel will visit the Kurdistan Region of Iraq and Kirkuk to conduct a site assessment and finalize project implementation.
- **Curriculum Review.** Participants will review Columbia's curriculum with Columbia educators in Erbil to offer adaptations to conditions in the KRG and the Federal Republic of Iraq.
- **Trainer Selection.** Two to three qualified educators from each university will be selected to participate in the training of trainers to be conducted in Erbil.
- **Training of Trainers Preparation.** The KRG Ministry of Higher Education and Scientific Research needs to arrange all in-country logistics, including local participant travel, venue, catering, and materials for the training workshop (cost-sharing arrangements are being explored).
- **Training of Trainers.** Columbia University trainers will lead a three-day Training of Trainers on the adapted curriculum in Erbil.
- **Curriculum Adaptation and Implementation.** Columbia personnel will work with participants to adapt and implement the curriculum as either a three-day workshop or as a semester-long course at their respective universities.
- **Engaging Kirkukis.** Through its outreach program/activities and in close collaboration with the Governor Office in Kirkuk, Kirkuk University will organize workshops for politicians, members of trade unions, tribal and religious leaders, journalists, and civil servants working in ethnically mixed communities in the Governorate of Kirkuk.

## **Institutions**

Columbia University is one of the top academic and research institutions in the world, conducting ground breaking research in medicine, science, the arts and the humanities. It includes three undergraduate schools, thirteen graduate and professional schools, and a school of continuing education. Founded in 1754, it is the oldest institution of higher learning in the state of New York and the fifth oldest in the United States.

Institute for the Study of Human Rights (ISHR) was the first academic centre in the world to be founded on an interdisciplinary commitment to the study of human rights. ISHR is also renowned for bridging the study and practice of human rights on both a national and international level.

ISHR seeks to promote dialogue between scholars and practitioners through human rights research, education, lectures, conferences and capacity-building activities.

Program on Peace-building and Human Rights is an applied research endeavour taking a comprehensive approach to peace building through humanitarian assistance, human rights, economic development and political participation. In addition to Sudan, the program operates in Iraq, Turkey, Sri Lanka, the Balkans and the Caucasus. Activities involve dialogue initiatives, educational exchanges and curriculum reforms that reduce hostile perceptions, as well as cooperative projects with practical social and economic benefits.

Further, Mr. Khezry has proposed to Minister Falah Bakir the following:

- (a) That the KRG Department of Foreign Relations annually sponsors a group of promising students to pursue their graduate studies in international relations at Columbia University.
- (b) That efforts regarding the international recognition of *Anfal* as genocide is coordinated through the KRG Department of Foreign Relations by a group of well-qualified international lawyers.
- (c) That a formal invitation is sent to Professor Wheeler Thackston of Harvard University to visit KRG to review his work on Kurdish grammars with native speakers before it is published.<sup>1</sup> No response from the Ministry has been forthcoming despite numerous follow-up from Mr. Khezry.

An Offer of engineering and expert review services was made by Jamil Mardukhi, N.C.K. Engineering Ltd., Toronto, Canada, an award winning international consulting engineer. Jamil Mardukhi's presentation at the WKC 2012 was on "Advanced Structural Materials and Systems," where he discussed creative structural systems used in two of his firm's projects, The Pyramids of the Louvre in Paris and the CN Tower in Toronto. He also, very briefly, made several recommendations and suggestions to the KRG on development projects, arising from his forty years of involvement in major international development projects.

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<sup>1</sup> The following books are among the works of this world-renowned linguist:  
[http://www.fas.harvard.edu/~iranian/Sorani/sorani\\_1\\_grammar.pdf](http://www.fas.harvard.edu/~iranian/Sorani/sorani_1_grammar.pdf)  
[http://www.fas.harvard.edu/~iranian/Kurmanji/kurmanji\\_1\\_grammar.pdf](http://www.fas.harvard.edu/~iranian/Kurmanji/kurmanji_1_grammar.pdf)

His firm, with professional involvement in numerous Canadian and international projects, can contribute to the development of the KRG in this very crucial phase of development in several ways: by providing expert review for planning and architectural feasibility studies, making a technical review of major engineering and building projects, and by construction code and standard development for KRG.

In this endeavour, his firm will use its in-house facilities for the structural engineering aspects of the work and involve top Canadian and European consultants and experts from other disciplines.

He proposes other areas that his firm, with expert engineers and consultants, can provide as services to the KRG:

- (1) Development of Building Code and Standards for the KRG.
- (2) Feasibility study and preparation of terms of reference for major development projects in the KRG.
- (3) Expert review services for building and infrastructure projects designed by others.
- (4) Drafting of construction review procedures and standards for municipalities within KRG.
- (5) Training of municipal engineers and technicians for design and construction review
- (6) Generate policies for technology transfer for international consultants and contractors contracts.

Most delegates mentioned the warm hospitality and active participations of all the KRG ministers and directors, as well as the university rectors.

“I will be in touch with my new friends whom I met during the Congress and it would be my intention to be present in Kurdistan in order to establish new business ventures there. I would like to thank the KRG for their warm hospitality. Their kindness and generosity was second to none and frankly speaking was beyond my expectation. Thank you very much.”

Nader Gariban, Australia

“I would like to express my gratitude and appreciation on inviting me to the second World Kurdish Congress in Erbil, Kurdistan. I was impressed and overwhelmed by the Kurdish regional Government’s warm hospitality. I also would like to thank you and your dedicated committee for organizing and running this wonderful scientific event in our beloved Kurdistan.”

Kambez Akrami , delegate from Australia

## **5. The Future Of WKC**

The World Kurdish Congress intends to restructure its organization with new leadership to take the mission forward. The WKC mission, based on science and culture, would be to develop networking among the diaspora. The diaspora needs to be organized whether or not it can receive economical support from the KRG. It is a duty to engage in a pragmatic way that supports the process of nation building. There is a need for the diaspora to critically review this process and play an active role with its knowledge and expertise of science and culture. The activities should only be based upon scientific knowledge and research which creates a new culture inspiring progress and change within our society towards a progressive and prospective future.

One of the challenges today is that the diaspora understands the way the KRG operates, and how it can support with scientific evidence, the KRG's nation-building work. So far, one of the main problems for the inclusion of the diaspora has been the lack of an institutional authority in Kurdistan that understands the value of science, and has engagement with the diaspora as its goal. The diaspora's intellectual capital has not yet been considered as a key contribution to the process of nation building. Our mission is to reach this goal and inspire the next generation for our national duty.

# APPENDIX A

## WORLD KURDISH CONGRESS 2012 PROGRAM

**Improving the Quality of Life in Kurdistan  
Science and Culture for Progress in Kurdistan  
2nd Scientific World Kurdish Congress  
Shaheed Saad Conference Center  
Erbil, Kurdistan, October 11-15, 2012**

### **Day 1: Thursday October 11th, 2012**

14:00 - 18:00 Registration at Saad Palace Convention Center, Erbil

19:00-22:00 Welcome Dinner, Welcome Speeches

H.E. Falah M. Bakir, Minister of Foreign Relations (Diaspora),

Dr. Carol Prunhuber and Dr. Alan Dilani, WKC Founding Members

19.00 - 00.00 Cultural Performance

### **Day 2: Friday October 12th, 2012**

08:00-08:30 Late Registration

#### **08:45 - 10:00 Opening Ceremony**

Opening remarks by His Excellency President, Masoud Barzani

*Introduction of the 2th World Kurdish Scientific Congress Science and*

*Culture for Progress of a Healthy Society in Kurdistan*

Alan Dilani, International Academy for Design and Health (Sweden)

10:00 - 10:30 Coffee/ Tea Break and Posters Display

#### **10:30 - 12:30 Session 1:**

##### **The Science of Healthcare Treatment**

Chair: Rang Shawis (Kurdistan / UK), *The Need for a Health Council for Kurdistan*

Nawzad Saleh (Sweden), *Focus on Diabetes and Cardiovascular Disease in Kurdistan*

Seddigh Zarza (Austria), *Health Promotion and Prevention in Kurdistan*

Kadir Hasan (UK), *Tele Radiology in Breast Cancer Care in Kurdistan*  
 Alan Fotoohi (Sweden), *Clinical Pharmacology: A Medical Specialty for Efficient and Safe Use of Medicines: How This Can Be Developed in Kurdistan*

Adiba Isa (Denmark), *The Crucial Role of a Center for Control of Infectious Disease in Kurdistan*

Discussion

12:30 - 13:30 Lunch, and Posters Display

### **13:30 - 15:00 Session 2:**

#### **The Science of Preventive Health and its Promotion**

Chair: Mariwan Baker (Denmark)

Deiary Fraidoon Kader (UK), *Orthopaedic Surgery Development and Rehabilitation in Kurdistan*

Jamal Maroof (Kurdistan / UK), *Sentinel Node Biopsy for Early Breast Cancer: Kurdistan's Experience*

Rizgar Barzani (UK), *The Relationship of Oral Health to Overall Health and Longevity*

Koestan Gadan (Norway), *The Impact of Stress on Immune System and Virus Replication*

Nabi Fatahi (Sweden), *The Migration Process and the Mental Well-Being of Immigrants in the Resettlement Country: A Study of Kurdish Refugees*

Discussion

13:00-14:00 Lunch

### **15:30 - 18:00 Session 3:**

#### **Challenges of the Kurdish Diaspora and Migration**

Chair: Falah M. Bakir (Kurdistan), Minister of Foreign Relations

Khalid Khayati (Sweden), *Kurdish Diaspora from Victim to Long Distance Nationalism*

Hossein Aghapouri (New Zealand), *Kurdish Online: Construction of National Identity in Cyberspace*

Barzoo Eliassi (Sweden), *We Kurds Did Not Come to Sweden to Become Swedish But to Continue Being Kurdish*

Fatima Anamaghi (Denmark), *Immigration and Identity Crisis among Kurdish Youth in Denmark*

Ahmet Hamdi Akkaya (Belgium), *Kurdish Diaspora: A New Subject Formation in Transnational Space*

Discussion

**Dinner 19:00 – 21:00**

**Day 3: Saturday October 13th, 2012**

**08:45 - 10:00**

Keynote Speaker: Serwan Baban, Minister of Agriculture and Water Resources, *Agriculture and the Road Map to Self-Sufficiency in Kurdistan*

**10:30 - 12:30 Session 4:**

**Restoration of Farming and Agriculture in Kurdistan**

Chair: Serwan Baban (Kurdistan / UK)

Mahdy Barzinjy (Denmark), *Medicinal Plants of Iraqi Kurdistan: A Scientific and Economic Evaluation*

Soleyman Sahebi (Australia), *Water Resources in 21st Century Kurdistan: Threats and Opportunities*

Ali Barhoon (Sweden), *School of Milk Production: Experiences from China and Bangladesh*

Manuel Martorell/ Igor Urizar (Spain), *The White Week: An Original Project for Rural Development*

Discussion

12:30 - 13:30 Lunch, and Posters Display

**13:30 - 15:30 Session 5:**

**Higher Education and E-Government in Kurdistan**

Chair: Jakob Krarup (Denmark)

Farzad Sanati (Australia), *Knowledge Society and Sustainable Quality Higher Education in Kurdistan*

Diako Ebrahimi (Australia), *Multidisciplinary Education in Kurdistan*

Shereen Hakky (USA), *Fostering Kurdish Innovation to Fuel Regional Development and Economic Growth*

Zaigham Mahmood (UK), *E-Government in the Kurdistan Region of Iraq: Some Thoughts on Implementation*

Shareef M. Shareef / Johnnes Arreymbi (Kurdistan / UK), *Mobile-Government for Enhanced Public Service Delivery in Advancing Economies: The Case of the Kurdistan Region of Iraq (KRI)*

Wafa Khorsheed and Asad Khailany (USA), *An Overview Of E-Government And Best Strategies For Adoption In Developing Countries*

Discussion

15:30 - 16:00 Coffee/ Tea Break and Posters Display

**16:00 - 18:00 Session 6:****The Kurdish Genocide, Our Mind and Reshaping Our City, Environment and Design for Public Spaces**

Chair: Alan Dilani (Sweden)

Osman Ahmed (UK), *Documenting the Anfal: The Kurdish Genocide (1988) Through Drawing*Jamal Hamid Zangana (UK), *The Environmental Destruction of Iraqi Kurdistan*Ahmad Sohrabi (USA), *New Mind and Brain Sciences: Implications of Functional Magnetic Resonance Imaging (fMRI)*Jamil Mardukhi (Canada), *Advanced Design Methods and Materials in Civil and Structural Engineering*Parwez Zabihi (UK), *Does Erbil Have the Potential to Become a Megacity by 2020?*Jangir Maddadi (Sweden), *Design for Public Space to Enhance Social Interaction and Well-Being*

Discussion

**Dinner 19:00 – 21:00****Day 4: Saturday October 13th, 2012****08:45 - 10:00**Keynote Speaker: Almas Heshmati (Korea University, South Korea), *A Review of the Regional Development Strategy for the Kurdistan Region 2012-2016*

10:00 - 10:30 Coffee/ Tea Break and Posters Display

**10:30 - 12:30 Session 7:****Economic Challenges and Opportunities in Kurdistan**

Chair: Almas Heshmati (South Korea)

Nazar Rasul (Germany), *Strategic Foresight for Economic Growth and Sustainable Infrastructure in Kurdistan (Iraq): A Vision for 2030*Nabaz T. Khayyat (South Korea), *Socio-Economic Impact of Landmines in Southern Kurdistan*Hogir Fatih Rasul (Sweden), *The Role of Automation and Mechatronics in the Creation of a Modern Industrialized Nation*Mohammad Sharif Sharifi (Australia), *Use of our Indigenous Kurdish Plants to Produce Antibiotics*

Discussion

15:30 - 16:00 Coffee/ Tea Break and Posters Display

**13:30 - 15:30 Session 8:**

**Politics, Democracy, Power Sharing and Nation Building**

Chair: Joost Jongerden, (Netherlands)

Niyaz Barzani (USA), *The Feasibility of an Independent Kurdish State in Iraq*

Sait Keskin (UK), *Kurdistan Regional Government: From Nation-Building to Nation-State Building*

Michael Gunter (USA), *Hierarchy and Interaction: An Analysis of Kurdish Political Groups in Turkey*

Marianna Charountaki (UK), *Turkish Foreign Policy towards the KRG*

Mahir A. Aziz (Kurdistan), *Power-Sharing and Consociational Democracy in the Kurdistan Region of Iraq: 1998-2012*

Discussion

15:30 - 16:00 Coffee/ Tea Break and Posters Display

**16:00 - 18:00 Session 9:**

**History, Culture, Language, Human Rights Education, and Social Policy in Kurdistan**

Chair: Mazhar Khaleghi (Kurdistan / UK)

Jaffer Sheyholislami (Canada), *Language Selection as a Double-Edged Sword: Language Planning and Policy in Iraqi Kurdistan*

Kristiina Koivunen (Finland), *The History of Genocides in North and South Kurdistan, 1920-2010*

Zeynep Arslan (Austria), *To Be a Child of Non-Turkish Origin in Turkey: The Case of Kurdish Children*

Muslih Irwani (UK / Kurdistan), *The Politics of Social Policy: KRG's Experience in the Implementation of Social Security Programmes*

Boyan Hadjiev (Bulgaria), *Women's Role in the Development and Stability of Society*

Audrey Osler / Chalank Yahya (UK / Norway), *Human Rights Education in Kurdistan-Iraq: Enabling Teachers to Contribute to Processes of Gender Equity, Democracy and Development*

Discussion

**Dinner 19:00 – 21:00**

**Day 5: Saturday October 13th, 2012****08:30 – 12:30 Session 10:****08:30 - 10:30****Panel Discussion with KRG Ministers: *Vision and Expectations***

Rekawt H. Rashid Karim, Minister of Health

Asmat M. Khalid, Minister of Education

Ali Saeed Mohammad, Minister of Higher Education and Scientific Research

Ashti Hawrami, Minister of Natural Resources

10:30 - 11:00 Coffee/ Tea Break and Posters Display

**11:00 - 12:30****Panel Discussion with KRG Ministers: *Vision and Expectations***

Chair: Alan Dilani (Sweden)

Serwan Baban, Minister of Agriculture

Ali Sindi, Minister of Planning

Falah M. Bakir, Minister of Foreign Relations (Diaspora)

12:30 - 14:00 Lunch

**14:00 - 15:00 Session 11:****Panel Discussion with University Rectors: *Vision and Expectation***

Chair: Almas Heshmati (South Korea)

14.00-15.00 University of Sallahaddin, Rector Ahmed Anwar Dezaye

University of Sulaymania, Rector

University of Dahouk, Rector

University of Kurdistan, former Rector

**15:00 - 16:00 Closing and Discussion with Audience**

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