

Republic of Iraq
Ministry of Planning

National Development Plan for the Years 2010-2014

Baghdad
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Forward by the Minister of Planning

Strategic long-term planning is a feature of modern nations. Short-term planning provides only topical solutions and approaches to emergency situations. This reactionary planning does not address actual and complex problems. We cannot use a short-term approach to build a comprehensive national economy that includes the ambitions of the nation and society.

The loss of the strategic compass in the arena of the Iraqi economy has cost us dearly and has led us to waste time and money. The country has not prospered and has left the Iraqi people to suffer despite the affluence they could have due to Iraq's wealth and illustrious history.

Over the past few years, Iraq has demonstrated the inability to manage the annual budget, allocate investments, and has struggled to create an economy that allows for progress and development. This is due to budgets being approved late in the year and the release of the money thereafter. A critical portion of the year elapses and the minister, or other government officials, is unable to make a decision about completing projects. This ineffective cycle is repeated year after year. For this reason, the Ministry of Planning took the initiative to propose adopting a plan that encompassed more than one year. We proposed a five-year plan that covers the period of 2010 – 2014. The Council of Ministers adopted the initiative and the plan became a governmental decision. The Ministry of Planning, including all of its agencies and experts, worked diligently until this was achieved. Within this document you will find a plan that is a comprehensive guide for the nation and society to build Iraq's economy. This is a gift from the Ministry of Planning to the Iraqi government and to the Iraqi people. This plan is a major achievement of the ministry and represents the heart of the ministry's experience as well as the dedication and hard work of its experts.

The new plan cannot be compared to previous development plans in Iraq because it is different from other plans developed in the past. This is an advanced and unique plan that includes modern methods and approaches to technical planning and related practices. Previous planning was based on listing projects and distributing them among the various economic sectors. In contrast, this plan is based on a scientific methodology and analysis of data.

The plan forecasts future developments during 2010 – 2014 and proposes a new economic philosophy that is based on a market economy. For the first time, Iraq has adopted this concept and will provide private sector investment opportunities and will also provide the opportunity for foreign investment. Some may see the establishment of a comprehensive five-year development plan for Iraq as a risk in light of its current conditions in regards to political and economic instability. In actuality, this plan encompasses the reality of Iraq today and uses modern tools and methodologies to address the contemporary situation.

Implementation of this plan will take a lot of hard work and dedication. There are critical challenges that must be faced to enable the plan to bear fruit. We need to focus on building political stability. We should overcome governmental bureaucracy, particularly at the decision-making level. It is also critical to control corruption and reduce its impact so building the economy progresses at a proper and decent pace. A new governmental approach to implement this development plan will help to overcome challenges and allow this plan to succeed.



Ali Ghalib Baban
Minister of Planning



Acknowledgments

The development of this plan would not have been possible without the belief in the vital importance of a national mission that determines the course of the country's development. We must begin by thanking, appreciating, and acknowledging the Minister of Planning, Mr. Ali Ghalib Baban, who was the first to propose the idea of moving from preparation of an annual investment plan to a five-year program and for his constant follow-up and insightful instructions to the work team throughout the plan preparation period. This had a profound impact on accomplishing the plan.

We also want to thank and appreciate all ministerial and non-ministerial agencies, the Ministry of Planning in the Kurdistan region, as well as all governorates and their representatives on plan preparation committees for their cooperation and effective participation during the plan's development. We also extend sincere thanks and gratitude to USAID/*Tatweer*'s team. In particular we would like to thank the experts Mr. Nael Shabaro and Mr. Behnam Elias Putrus. We would also like to thank USAID/*Tatweer*'s invaluable assistants for their extensive technical and logistical support during the development of the plan.

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We also express our appreciation and gratitude for the expert efforts exerted by the Deputy Minister and Head of the Central Statistical Organization (CSO), Dr. Mahdi Al-Allak, for his continual support of the plan and his work in directly coordinating between the Poverty Reduction Strategy (PRS) and this plan. We would further like to thank the heads of all the committees, their members, and ministry affiliates who effectively participated in the various phases of the plan preparation and transformed the Ministry of Planning into a work cell through 2009 in order to complete this strategic document.

In addition, we would like to use this opportunity to express our deep appreciation for the efforts exerted by the national experts Dr. Basil Al-Husseini, Dr. Adnan Yasin Mustafa, Dr. Wafaa Al-Mahdawi, and Dr. Amer Hermis for their distinguished technical contributions and for their role in drafting and issuing the final version of the plan.

We hope this national effort forms a comprehensive program that moves Iraq to an advanced developmental phase and lays the foundation for future strategic planning based on principles that combine justice, efficiency, and sustainability.

Dr. Sami Matti Pollus

Deputy Minister of Planning for Technical Affairs

Head of the Technical Committee for Plan Preparation

Introduction

The idea for preparation of a mid-term National Development Plan (NDP) was born out of the failures and problems faced in preparing annual investment programs, in particular the difficulties of instituting a comprehensive mid- and long-term vision that defined project priorities and their elements based on an annual development approach. For that reason, MoP proposed to the honorable Council of Ministers (CoM) the idea of preparing a mid-term (five-year) development program. The council approved the idea in 2008 with decision no. (20Z/10/1/15/8013), dated 4/15/2008. Immediately after that, the MoP began preparation of a five-year NDP and oversaw the actual intensive work for the plan preparation that actually started at the beginning of 2009.

Approach

Our approach was to build the NDP based on reliable data, sound scientific analysis and realistic assumptions. Specifically, a comprehensive analysis of the reality of Iraq's economy was performed at the aggregate, sectoral, and spatial levels over the past 40 years with emphasis on the 2004-2008 period. Furthermore, an in-depth analysis was performed to assess the situation of public services, infrastructure, and environmental and social conditions, including poverty and unemployment, with a focus on vulnerable groups such as women, children, and persons with disabilities.

For every activity and service addressed, the plan was careful to present previous policies along with their positive and negative effects. It then identified the problems and challenges facing that activity or service. The vision for the next five years was established thereupon and transformed into more detailed quantitative and qualitative objectives based on the nature of each activity, service, and capability. Then means for achieving these objectives were proposed so as to conclude the plan with a comprehensive investment program by sector, activity, and province.

Advantages of the Plan

The 2010-2014 NDP is characterized by a number of issues that distinguish it from previous plans and that can be summed up as follows:

1. It adopted a participatory approach during preparation that commenced with establishment of a general framework to diagnose the reality and capabilities, and continued by defining problems and specifications, designing the visions and translating them into objectives and means of achieving the objectives, as well as defining the plan's investment objectives and priorities. The participatory approach to plan preparation took various forms and employed various techniques to ensure participation by all involved parties.

During the phase in which the approach to plan preparation and the timeframe were defined, workshops were held to which a number of experts from the United Nations organizations and MoP managers and officials were invited.

During the plan preparation phase, 11 specialized technical committees were formed under the leadership of the Deputy Minister for Technical Affairs.

Two of these committees were led by the Deputy Minister and Chairman of the Central Statistical Organization (CSO), namely, the Millennium Development Goals (MDGs) Committee and the Committee for Poverty Alleviation. The other nine committees each focused on a particular technical aspect of the plan, which included:

1. Economic Policy Committee;
2. Revenue Estimation Committee;
3. Agriculture and Water Resource Committee;
4. Industry and Energy Committee;
5. Transportation and Communications Committee;
6. Construction, Housing and Services Committee;
7. Human Development Committee;
8. Spatial Development Committee;
9. Private Sector Committee.

These committees were led by general managers at MoP and members consisted of representatives of the Kurdistan region, relevant line ministries, academics, representatives of the unions concerned, and experts from the USAID/Tatweer and the United Nations Assistance Program for Iraq. Each committee, within its purview, presented background documents detailing current sectoral policies, the current reality, capabilities, challenges, proposed vision, objectives, and means of achieving the objectives. In April 2009, at the Al-Rasheed Hotel in Baghdad and with a support from USAID/Tatweer, the first conference was held to discuss the plan's general framework, as well as its overall, sectoral, and spatial orientations. The conference was attended by the Deputy Prime Minister, Dr. Rafi Al-Isawi and more than 350 participants attended. Among the participants were a number of ministers, deputy ministers, ministry advisors, members of the Council of Representatives (CoR), representatives from Kurdistan Regional Government (KRG); governors; Provincial Council (PC) members; unions, academicians, civil society organizations (CSOs), and donor organizations including USAID and the UN.

The discussion revolved around the plan's general framework, its overall and partial orientations, and the sectoral background documents prepared by the committees. The conference produced a number of important remarks and opinions that were beneficial in later phases of the plan. In addition, the subsequent roles of ministries, nonministerial agencies, KRG, and the provinces were defined by means of representations on their strategic visions for their sectors, spatial specializations, and their proposed five-year plan projects in accordance with a template prepared by MoP. A significant number of remarks and opinions about the papers presented at the first conference were received from USAID and the UN agencies. They were beneficial during the second phase when preparing background documents.

The second conference was held also with the support of USAID/Tatweer in early November 2009 to discuss the final sectoral and technical documents pertaining to the plan once it was developed. More than 400 people attended from all of the aforementioned agencies. More than 37 experts from the UN, USAID, the EU and many other international organizations attended. Over the course of five days, discussions were held concerning all sectoral aspects, the vision, objectives, and means of achieving the objectives. The conference was an excellent opportunity to initiate the drafting of the plan document.

In order to strengthen the provinces' participation in the plan preparation and as a capacity building exercise for the provincial officials, committees were formed to propose projects to be implemented in the next five years. This was conducted in coordination with the Provincial Planning Units (PPUs) that are part of MoP and located in 15 provinces. It was also conducted through work teams from MoP's headquarters who visited all provinces on more than one occasion, which was a great help in facilitating the process of proposing projects of a local nature. The MoP also held three more conferences in Dhi Qar, Basra and Diyala to discuss representing the local needs in the NDP. The MoP had a plan to hold these conferences in all provinces, but due to time limitations, only three local conferences were held.

Direct coordination took place with all ministries, KRG, and the provinces with regards to the quantitative and qualitative objectives for their sectors and/or spatial specializations as well as in determining the priorities of the projects selected for the plan document.

2. In addressing developmental issues, the plan is not limited to public investment; rather, it considers private investment a fundamental partner in the development process and expects it to contribute to about 46% of the investments required to achieve the vision and objectives of the plan. The sectors, activities, and areas in which the domestic and foreign private sector can invest were identified.
3. The plan calls for strengthening decentralized administration in order to improve the effectiveness of provinces' roles in developing and managing their resources and the development process.
4. The plan focused on areas not emphasized in previous plans in Iraq. Some examples include:

- Adding the spatial (regional) dimension to development,
- Using the Unsatisfied Basic Needs formula based on the level of deprivation as a criterion to distribute development benefits among Iraqis,
- Establishing a balance between the needs of the population of different public services and infrastructure and the capabilities of the production sectors,
- Including a wide range of sectors such as the tourism and artifacts sectors,
- Balancing developmental decision-making based on the three dimensions of sustainable development: economic, social, and environmental.
- Using environmentally friendly technologies and proper handling of the negative environmental effects accrued over the past decades.
- The plan also focuses on social and humanitarian aspects that have never been addressed in previous plans. These included concern for vulnerable groups, poverty and the need to alleviate it, and the extent to which Millennium Development Goals (MDGs) can be achieved,
- The plans addresses the issue of institutional reform and good governance,
- It also emphasizes the promotion of a number of activities, particularly ensuring availability of housing.

Data and Information Sources

Construction of the plan relied on qualitative and specialized studies performed by subcommittees and experts, as well as work papers provided by ministries, the KRG, and a number of provinces. The MoP's studies prepared by its technical departments were also used, along with some academic studies, and the Central Statistical Organization's periodic releases and surveys over the past years. In addition, the Poverty Reduction Strategy (PRS), adopted by the honorable Council of Ministers in January 2009, was a main source of plan data and information.

Obstacles to Plan Preparation

Normally, development plans are prepared amid stable economic, political, and security conditions. Preparing a plan for Iraq in the midst of unstable conditions created several obstacles, particularly in regard to domestic and foreign private sector participation. Furthermore, Iraq's reliance on a single main resource, namely oil, and lack of stable oil prices was another fundamental challenge. During plan preparation, oil resource calculations were changed three times due to price fluctuation in the international market. A price ranging between US\$60 and US\$68 per barrel was adopted for the plan years. This price has become low in light of current prices, which exceed US\$80 per barrel. There were also problems in the areas of accuracy, unavailability of complete data, and lack of a clear general direction in terms of the indicators that a planner can rely on to formulate a plan of alternatives. Indeed, all economic, service, and social indicators have fluctuated greatly because of the turmoil in Iraq over the past 40 years. This has also resulted in difficulty in defining a specific base year for all activities and performances, an exercise usually fundamental to building any mid- or long-term plan.

The obstacles faced during the plan preparation do not in any way diminish the plan's importance and effectiveness in drawing a developmental picture for the country over the next five years. The working team exerted tremendous effort to find alternatives and means to curtail the obstacles. With regards to the anticipated financial resources, the plan proposed a flexible investment program that can accommodate new developments or events during the execution phase. It also proposed clear and specific mechanisms to follow up on and evaluate the results and consequently reconsider the plan in 2012, if needed.

Cross-sectional comparison of data was performed using various sources so as to arrive at realistic figures. In addition, the most recent surveys performed by the CSO during 2004-2008, which are consistent with international standards, reduced the effects of this problem. With regard to the stability in the security situation, the plan is based on the ambition that security conditions will continue to improve, as has been the case over the past two years.

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Acronym List

BIS	Bank for International Settlements	MoCH	Ministry of Construction and Housing
BOO	Build-Own-Operate	MoE	Ministry of Electricity
BOOT	Build-Own-Operate-Transfer		
BOT	Build-Operate-Transfer	MoED	Ministry of Education
CBI	Central Bank of Iraq	MoF	Ministry of Finance
COM	Council of Ministers	MoH	Ministry of Health
COR	Council of Representatives	MoHE	Ministry of Higher Education
COSQC	Central Organization for Standardization and Quality Control	MoHR	Ministry of Human Rights
CSO	Central Statistics Organization	MoIMR	Ministry of Industry and Mineral Resources
CSOs	Civil Society Organizations	MoLSA	Ministry of Labor and Social Affairs
CSR	Civil Service Reform	MoMPW	Ministry of Municipalities and Public Works
DG	Director General	MoO	Ministry of Oil
DOH	Directorate of Health	MoP	Ministry of Planning
DPMO-EA	Deputy Prime Minister's Office – Econ. Affairs	MoT	Ministry of Trade
DPMO-S	Deputy Prime Minister's Office – Services	MoTRAN	Ministry of Transportation
EU	European Union	MoWR	Ministry of Water Resources
FAO	Food and Agricultural Organization	NDP	National Development Plan
GDP	Gross Domestic Product	NDS	National Development Strategy
GIS	Geographic Information System	NIC	National Investment Commission
Gol	Government of Iraq	PC	Provincial Council
HDI	Human Development Index	PMO	Prime Minister's Office
HSE	Health Safety and Environment	PPP	Public-Private Partnership
IA	Iraqi Airways	PPU	Provincial Planning Units
IMF	International Monetary Fund	PRS	Poverty Reduction Strategy
IT	Information Technology	TBI	Trade Bank of Iraq
ITMP	Iraq Transport Master Plan	UBN	Unsatisfied Basic Needs Formula
KRG	Kurdistan Regional Government	UN	United Nations
LLR	Lender of Last Resort	USAID	US Agency for International Development
MDG	Millennium Development Goals	VPO	Vice President's Office
MoA	Ministry of Agriculture	WB	World Bank
MoC	Ministry of Communications		



Executive Summary

When compared to Iraq's annual investment programs, the mid-term (five-year) National Development Plan (NDP) sets out serious approaches to meeting development challenges and defines the country's capabilities on general, sectoral, regional, and spatial levels. It promulgates visions and sets quantitative and qualitative objectives in developing the country's economy and society over the life of the plan.

The plan begins with the challenges facing the Iraqi economy and society, as well as its financial and human resource endowments, which are summarized below.

1. Iraq relies almost totally on oil to fund the state's federal budget. Oil resources form approximately one-half of the nation's gross domestic product (GDP). The effect is to limit Iraq's economic exposure to the external world because of the paltry contribution by non-oil commodity. It also indicates the private sector's limited role in the development process.

Pertaining to social issues, Iraq faces serious challenges in the areas of education and health, as measured by qualitative and quantitative indicators. There has been an increase in the percentage of vulnerable groups and an increase in the rate of unemployment to 15 percent, particularly among youth and women. In addition, 23 percent of the population lives below the poverty line and there is a significant shortfall in housing, which according to some estimates is equal to 3.5 million housing units.

In the area of infrastructure, Iraq suffers from a decline in the rate of quantitative and qualitative facilities for drinking water; coverage is no more than 90 percent in urban areas and 65 percent in rural areas. There is an even bigger problem with respect to sanitation. In Baghdad, coverage by sanitation projects is approximately 75 percent and no more than 3 percent in other urban areas. There is a complete lack of these services in rural areas.

Spatial development does not fare any better. There is a large disparity in economic and social development as well as in services among provinces and between rural and urban areas. There is also a decline in human development indicators as evidenced by a rise in the level of deprivation and poverty in most southern provinces, with the exception of Basra, and a relative increase thereof in middle provinces and the Kurdistan region.

In the area of rural development, there is clear indication that the countryside lags behind in terms of economic, social, and structural indicators, including a low level of agricultural productivity; high illiteracy rates; low rates of enrollment in and high dropout rates from schools, particularly for girls; poverty rates that exceed the national average; inferior health services and care; high rates of deprivation from services and housing; and a generally weak link between rural and urban areas.

In the environmental arena, there is an indication of lack of concern for the environmental dimension of development

and, consequently, a high level of pollution of environmental elements (water, air, and soil). There is also a weakness in identifying, monitoring, and tracking pollutants. Moreover, both society and organizations have little environmental awareness. In addition, there is no comprehensive identification of the effects of consecutive wars in which environmentally destructive weapons and those with long-term effects were used.

The consecutive wars and crises suffered by Iraq, as well as the rapid changes since 2003, have led to a social situation that cannot accommodate new changes and transformations. This has generated cases of corruption that have had a negative effect on the course of development.

2. In light of the challenges indicated above, and in light of the federal democracy environment, the plan aims to have Iraq become an effective country through the workings of market mechanisms; becoming a participant in the world economy; and an embodiment of the principle of international partnership. Based thereupon, the plan seeks to have Iraq effectively employ its economic resources, both human and natural, to achieve a diverse and competitive economy in which the private sector plays a leadership role in creating wealth and jobs, and the public sector plays an organizational and enabling role to address market failures, guarantee fair distribution of the national income, and see that at-risk social groups can effectively fulfill their role in achieving economic and social progress.
3. Objectives: The development plan translates the strategic vision through the following general objectives:
 - Increase in the gross domestic product (GDP) at a rate of 9.38% per year during the plan period.
 - Generate 3 to 4.5 million new jobs based on the proportion between capital concentration and work that will be used in activities and projects adopted by the Plan.
 - Diversify the Iraqi economy through achievement of gradual increases in the rate of participation by other sectors in GDP, particularly the production, agriculture, and industrial sectors, along with tourism, which is a sector with some accomplishments and promise. It is also one of the sectors in which private sector activity plays a historically strong role. This role can be strengthened in the future both through generation of GDP and through the jobs it can generate.
 - Strengthen the role of the domestic and foreign private sectors, either in terms of the magnitude of investment anticipated within the country, estimated at about 46 percent, or in terms of job opportunities. The plan seeks to expand and diversify the activities that the private sector invests in, particularly comprehensive animal and vegetable production projects; fisheries; tourism of all kinds; conversion industries, particularly those in which Iraq has a comparative advantage; passenger transportation,

merchandise, communications, as well as port and airport management; and education, health, and housing. The plan urges the government to play a strong enabling role in the area of housing to encourage both individual and private (national and foreign) sectors to invest in housing, yet recognizing that the state will retain responsibility for secure housing for vulnerable groups.

- Improve and increase productivity and promote the concept of competition, particularly in activities enjoying a comparative advantage such as oil and gas, petrochemical industries, chemical fertilizers, cement, pharmaceutical industries, production of dates and fruits, rearing of livestock, and tourism of all kinds (recreational, religious, and historical) across all of Iraq's provinces.
- Reduce poverty rates by 30 percent from 2007 levels by focusing on comprehensive rural development and the creation of job opportunities, particularly for vulnerable groups such as youth and women, and focus on ensuring basic services, particularly educational and healthcare services, for rural areas and vulnerable groups.
- Establish a spatial development trend characterized by fair distribution of infrastructure services and public services (water and sanitation, health, education, etc.) among all of Iraq's provinces in a manner consistent with their population size and the extent of their deprivation and need. Further, distribute production and tourism activities across the provinces in a manner consistent with their capabilities at the state, regional, and international levels, with focus on rural areas and those urban areas that are the most deprived.
- Establish sustainable development that balances economic, social, and environmental considerations so as to optimize use of available natural resources without undermining the right of future generations to benefit from those resources. Further to this, focus on keeping up with international developments in the areas of climate change and the use of environmentally friendly technologies.
- Strengthen the role of local governments in developing their provinces and building capacity for coordination and complementarities, using their comparative advantages.

4. To achieve these objectives, the plan:

Estimated the investment that must be secured at around 218 trillion Iraqi dinars, i.e., US\$186 billion during the five years of the plan; US\$100 billion would be funded by the federal budget at a rate of 30 percent per year of the overall budget. The remaining US\$86 billion would be funded by the domestic and foreign private sectors; the public and private sectors would contribute 53.7 percent and 46.3 percent, respectively.

Category	percent
Agricultural Sector	9.5
Industrial Sector	30
Oil	15
Electricity	10
Conversion Industries	5
Transportation and Communications Sector	9
Construction and Services Sector	17
Education Sector	5
Regional Development	12.5
Kurdistan Region	17*
Total	100

* Or any percentage confirmed by the General Population Census.

Investment priorities were distributed by giving the oil and electricity sectors a higher priority because they are the primary source of financial resources for sustainable development, at least over the midterm, and electricity is the primary infrastructure for development in the production and service sectors. Higher priority was also given to the agricultural, transportation, and communications sectors. Agriculture is an important resource that has promise with regard to contributing to economic diversity and ensuring the country's food security. It also has an important role in generating employment opportunities that will contribute to reducing poverty, stabilizing productive labor in rural areas, and reducing migration to urban areas, which has crowded already stressed city services. The transportation and communications sectors were also given priority they have highly functional interconnections with other sectors. The Plan sought to reserve 12.5 percent of its investments for the regional development program and 17 percent for the Kurdistan region. Table (1) indicates the relative magnitude of the investments directed to the plan's sectors.

But securing investment alone is not sufficient to achieve the plan's objectives. The plan must be supported in the areas of financial and monetary policy, institutional development, as well as administrative and legal reform. It must also be supported through plan tracking and monitoring systems. Accordingly, the plan proposed a number of financial and monetary policies that are compatible with the investment policy, as well as strategic, sectoral, spatial, and social objectives.

The plan proposes a host of institutional reforms at the sectoral level. It emphasizes the need for building human and technical capabilities, using modern technology, and

verifying the cost-effectiveness of projects. In addition, it emphasizes the need for good governance based on the principles of rule of law, accountability, transparency, justice, inclusivity, efficacy, and effectiveness. The plan additionally emphasizes the importance of modernizing the public sector in accordance with these principles.

The plan also calls for using modern technologies and acquired knowledge, benefiting from the most notable regional and international experiments and expanding the economy's knowledge base.

Chapter One

The Plan's Economic and Social Framework



The Plan's Economic and Social Framework

1.1 Historical Overview

Over the past 40 years, the Iraqi economy has witnessed tangible developments in general economic indicators such as GDP, national income, and fixed capital formation, though with ups and downs. This is natural in light of circumstances over the years, most notably nationalization of the oil industry in 1972, the first Gulf War in 1980-1988, the second Gulf War in 1991, international economic sanctions in 1991-2003, and the fall of the regime established in 1968.

These events directly affected development in Iraq. Nationalization of the oil industry and correction of its prices provided Iraq with sustainable financial strength, leading it to adopt an expansionary spending policy that energized economic activity, stimulated the production cycle, and raised consumption levels. The economy thus experienced high rates of growth, which were tangibly reflected in the Iraqi people's standard of living and allowed them to enjoy economic and social prosperity. At the same time, however, the spending policy of the 1970s caused a host of issues, including increases in the consumer price index and higher import rates. Overall, the final outcome of the 1970s appears to have been positive when evaluated using locally and internationally recognized economic and social development measures.

Between 1980 and 2003, Iraq suffered from long wars and severe economic sanctions. Development regressed as a result; economic policies were adopted, to support war efforts and resist sanctions, with no regard for progress in development, thus effectively ending the positive achievements of the 1970s. The Iraqi economy was trapped in a vicious cycle that could only be broken by a shock. That shock occurred with the fall of the regime in 2003. However, the ensuing instability in economic, political, social, and security conditions threatened, and continues to threaten, development efforts, and the road ahead is still long and difficult.

1.2 Developmental Features

Iraq's developmental reality over the past 40 years embodies the issues described below.

1. Oil revenues are the main source of financing for the developmental process in Iraq. This has undermined the role and importance of other financing sources, particularly taxes. Sectoral financing policies are unable to generate an economic surplus that can effectively contribute to the financing process.
2. Centrality is the approach used to manage the Iraqi economy. This has made the public sector critical to the development process, all the while marginalizing the private sector's role, and distancing it from the economic arena. To the extent it exists, the private sector has no impact on developmental effectiveness and civilian social organizations play no role.
3. In Iraq, capital accumulation has been achieved by transferring oil revenues to economic sectors in the form of fixed assets. There is no contribution to capital accumulation from technological advancement and higher productivity

rates. This has voided the growth rates achieved in the gross domestic product and capital accumulation of their true content and rendered them incapable of expressing real and sustainable growth. Accordingly, they are liable to collapse as a result of any crisis.

4. There is no intellectual base and no process for sustainable human development when distributing income between investments and consumption. This has rendered the process of development in Iraq far removed from the standards of sustainable development to improve the quality of life.
5. Divisiveness and the lack of coordination and cooperation have characterized the various branches of the economic policy. This has particularly been the case with respect to finance and monetary policies, and it has exacerbated the severity of unemployment, inflation, and the spread of administrative corruption.

1.3 The Plan's Assumptions

The development plan for 2010-2014 is based on four basic assumptions that are considered methodological starting points for preparing and executing the plan:

1. The ability of the Iraqi economy to move forward and execute a sustainable and comprehensive development plan.
2. Sustainable and comprehensive economic development as a goal for growth and a basis for achieving prosperity for all members of society, improving the quality of their lives, and protecting the environment.
3. Movement from centralized management of the economy to decentralized management measured by the status of the market economy, competition, and a gradual increase in the role of local governments pursuant to a creative approach aimed at selecting and establishing market-based mechanisms to define priorities and make decision.
4. Assignment of a greater role to the domestic and foreign private sectors with respect to financing the development process.

1.4 Challenges

1.4.1. Economic Challenges

1. The quartile nature of the Iraqi economy, whereby the crude oil extraction and exportation sector accounts for 44 percent of the domestic product generated and 93 percent of total exports
2. The Iraqi economy's significant exposure to the external world as a natural outcome of the low contribution by commodity sectors (excluding oil) in GDP generation, (28.6 percent for commodity activities, 38 percent for distributional activities, and 33.4 percent for service activities for the period 2004-2008). These rates explain Iraq's need to increase imports from the outside world to cover increasing local demand, as the increase in operating expenses in the public budget ultimately translated into increased demand in the domestic market.

The most telling evidence of this fact is the increase in the imported portion, as compared to the domestic portion, of commodity supply in the Iraqi market.

3. The private sector's limited role in the development process as evidenced by the decline of its participatory share in economic activity, job creation, coverage of increased domestic demand, and investment generation. This has rendered the sector inflexible and unable to respond quickly to the changes targeted in the current plan unless a suitable and attractive work environment is created.

1.4.2 Social Challenges

Iraq suffers from a host of social challenges that are no less severe or critical than its economic challenges in terms of their impact on the society and its relationships, the economy and its capabilities, and on the people and the means of enabling them. They limit the course of sustainable human development and hinder the process of achieving the Millennium Development Goals (MDGs) established internationally and nationally. The most prominent social challenges are described below.

1. **Schooling and Higher Education:** Despite the importance afforded this sector by the Iraqi constitution, development plans, and economic policies, there are indications of a lack of responsiveness. Data shows a significant deficit in school preparation, an increase in schools with double or triple daily sessions, mud-constructed schools not fit for use, and a decline in the rate of school enrollment, which stands at 85 percent for boys and 82 percent for girls. The situation does not differ for higher education, which has tended toward vertical expansion in universities and has strengthened quantitative progress at the expense of qualitative progress. There is also a clear disconnection between graduates of the educational system and market needs. There is a focus on the humanities specialties, because of the ability to secure the financial and human requirements associated therewith, at the expense of scientific and technical specialties.
2. **Health:** The magnitude of the challenges facing Iraq's health sector may greatly hinder its ability to progress along the health axes set forth in the MDGs. There is still a large gap between what has been achieved and what must be achieved by the year 2015. The most serious of those challenges include the scarcity of drinking water supplies and the lack of treatment for wastewater and garbage. There are also significant problems in the health system itself, including a decline in the number of beds and doctors per 1,000 people as compared to international indicators. Furthermore, there is not optimal use of available health facilities; the bed occupancy rate in public hospitals does not exceed 65 percent, reflecting the population's lack of trust in the services provided by public health institutions.
3. **Housing:** Iraq suffers from a housing crisis. Estimates on the need for suitable housing units range from 1 million to 3.5 million, depending on the assumptions used in housing studies, but in any this constitutes a significant housing shortfall. The development plan must address that shortfall, as well as present policies and procedures that

can effectively alleviate its severity. Perhaps the leadership role that must be granted to the private sector and foreign investment in this plan's timeframes will contribute to addressing this challenge.

4. **Poverty:** Data from the poverty alleviation strategy in Iraq have confirmed that 23 percent of the population lives below the poverty line. The current development plan needs to craft its investment programs and objectives in a manner that reduces this rate to the strategy's target rate of 16 percent. However, the disparity in income distribution, i.e. the state of inequality has reached 40 percent, which is considered evidence that can, in and of itself, hinder translation of the goal into reality. Therefore, the plan must seek to formulate comprehensive policies that raise per capita income, achieve equity in distribution, and firmly address the phenomenon of poverty.
5. **Unemployment:** Unemployment may be the social challenge with the most negative effect on the economy and society as a whole. Pursuant to the most recent statistical survey conducted for unemployment in 2008, the unemployment rate has persisted at the rate of about 15 percent overall, with a disproportionately high rate among youth at 30 percent and among women at 32.5 percent. The challenge is to establish solutions and constructive processes to alleviate unemployment through policies that affirm the private sector's role in creating job opportunities, as well as an effective and job creating operating policy.
6. **Youth:** The diversity among youth from an educational, cultural, and skill level perspective is considered another one of the main challenges facing the Iraqi economy. Twenty-four percent of participants in the labor force are uneducated; of that group 41.2 percent can read and write and 43.1 percent have a primary school certificate. These rates confirm the necessity for the plan to adopt a bundle of effective policies to promote youth, as well as educate and employ them.

1.4.3 Duality of Spatial Development

The duality of spatial development is considered one of the most prominent features of the spatial development pattern in Iraq, a nation characterized by the presence of provinces and regions that are comparatively more advanced alongside others that are less developed or different from an economic, social, and cultural perspective. Poor geographic distribution of investments may best explain this duality, which has also expanded to include clear disparity between urban and rural areas. The spatial development pattern has led to the concentration of population, economic activity, and services in a handful of cities. This has, in turn, attracted more of the population and labor force from small towns and rural areas to urban areas and economically and socially developed provinces.

Population movements have negative impacts from an economic, social, and environmental perspective. The current plan must address them by correcting the spatial distribution of its investments consistent with standards that balance social equity and economic efficiency as well as focus on decentralized management of development by granting local administrations

1 The Plan's Economic and Social Framework

a role in defining their growth, development, and needs. Local administrations must also have an effective role in defining the strategic activities that take place within their administrative purview and serve the national interest.

1.4.4 Environmental Challenge (Unsustainable Environment)

The environmental dimension of development has not received the requisite attention in Iraq over the past decades, neither on the national strategy level nor on the project level. Iraq also lacks comprehensive systems to track and address environmental issues. This has led to clear and tangible pollution of all environmental elements, namely, air, water, and soil. This has been compounded by use of banned weapons in wars, particularly radioactive uranium, as well as bombing and destruction of military installations. Addressing environmental problems and spreading societal environmental awareness is considered a major challenge.

1.4.5 Incomprehensive Rural Development

Economic, social, cultural, and structural retardation are among the most prominent features of the Iraqi countryside. They can be observed in the low level of productivity, the clear spread of seasonal unemployment and underemployment, the decline in the countryside's contribution to domestic product generation, and the lack of services adapted to a rural setting. This has contributed to the spread of poverty, population migration, and illiteracy. The current plan faces a dynamic challenge that requires adoption of investment programs specializing in development of the Iraqi countryside, as well as the revival of rural resettlement plans and policies that aim to combine small villages (into a mother village) to ensure a minimum number of residents and provide them with basic services such as education, primary healthcare, and rural roads.

1.5 Vision

Iraq is seeking to be a peaceful and stable nation under the auspices of a federal democracy. It is also seeking to be an effective nation that functions in accordance with market mechanisms and a regional economic power that complements and is part of the international economy in a manner that embodies the principle of international partnership. Based thereupon, Iraq will use its economic resources, both human and natural, effectively and efficiently to attain a competitive and diversified economy in which the private sector has a leadership role in generating wealth and jobs, while the government performs an organizational and enabling role to address market failures and ensure equitable distribution of national income so as to enable the most vulnerable social groups to fulfill their role effectively in achieving economic and social progress. All of this is to be achieved with guidance from the principles of democracy, the rule of law, good governance, sustainable development, competitiveness, social justice, freedom, and human rights.

1.6 Strategic Objectives

1. Work to increase the GDP at a rate of 9.37 percent per year for the duration of the plan.

2. Work to diversify the economy and transform it into one that is characterized by a gradual increase in the rate of participation by sectors other than oil in the GDP, particularly the production (agriculture, industry) and tourism sectors, as well as one that is characterized by growing participation from the private sector over the course of transformation into a market economy.
3. Work to improve and increase productivity and promote competition in all economic sectors, particularly as regards activities that have a comparative advantage, such as oil, gas, petrochemicals, cement, plastics, pharmaceuticals, and electricity across all of Iraq's regions and provinces so as to guarantee and ensure a continuously robust economy for Iraq.
4. Work to increase the employment rate, particularly among youth and women, by activating the private sector's role in employment. This should reduce the high unemployment rate of 15 percent, consisting of both seasonal unemployment and underemployment, and the social problems associated therewith.
5. Increase as well as quantitatively and qualitatively improve the water provided for human consumption over both the mid and long term, as well as double the coverage areas of sanitation projects and expand their spatial coverage to include all provinces.
6. Work seriously to alleviate the poverty that is currently widespread in Iraq by creating job opportunities and areas (new sustainable jobs) as well as sustainable income. Further, ensure basic social services to the poor by ensuring qualification and training in new job areas, particularly for high-risk groups like orphans, widows, and individuals with special needs.
7. Work to achieve comprehensive and relevant growth that guarantees activation or productive investment of human and natural resources in all of Iraq's provinces. This would be supported by means of geographically balanced investment allocations and an attempt to decrease disparities, barriers, and dualities at the regional (district) level. Further, this would be achieved by working to establish a coherent series of economic activities, industrial complexes, and economic free zones across the nation. The plan also aims to achieve balanced distribution of infrastructure, social services, and suitable housing based on population size, needs, and the extent of regional deprivation over the past periods.
8. Address rural development issues, particularly the poor performance by the agricultural sector in terms of productivity and job creation, as well as unsuitable housing and weak infrastructure in the countryside. That is why the plan seeks to reduce disparity and barriers between rural and urban areas in terms of the availability of infrastructure, social services, and areas of new job creation. These would, in turn, contain the phenomenon of rural-to-urban migration that applies negative pressure on existing services and infrastructure, particularly in large cities.
9. Increase awareness about and acceptance of the principles of sustainable development and quality of life, and the need to achieve them across all of the economy's

sectors. Further, have these principles considered in both rural and urban planning so as to minimize the negative impacts of the years during which these principles were ignored or neglected. Moreover, improve the economic, social, and environmental aspects of the population's life.

The plan aims to establish and reinforce suitable and proper mechanisms so as to achieve its strategic objectives, policies, and overall vision for the future. It also aims to work on providing a suitable organizational structure and legal framework that contributes to guaranteeing and ensuring high rates of achievement and proper implementation of the plan.

1.7 Means of Achieving the Vision

One of the main assumptions upon which the plan is built is reliance on a comprehensive and sustainable model of development so as to achieve economic prosperity and the quality of life, and effectiveness of the Iraqi people. To translate this model into reality, the resources that will be used for funding purposes were defined based on a number of alternatives for different developmental levels. They are as follows:

Alternative One

This alternative assumes that old relationships and interconnections among economic activities continue during plan years 2010-2014. This alternative consists of two levels:

1. Assuming that the Iraqi economy grows at a compound annual rate of 9.45 percent as of 2009 requires investment in the amount of 154,040 billion dinars, i.e., US\$131 billion.
2. Assuming an annual growth rate of 11.0 percent requires investment in the amount of 180,854 billion dinars, i.e., US\$154 billion.

Alternative Two

This alternative assumes that existing historical technical relationships among economic activities continue, with the exception of the assumption pertaining to the rate of growth in crude oil extraction and that activity's output, both set at 13.1 percent annually, in the hopes of increasing foreign and private sector investment in this activity. Accordingly, the overall growth rate under this alternative is 9.11 percent.

Alternative Three

In this alternative, five activities were selected and their growth rate was doubled as compared to historical levels. This was done as follows:

1. Crude Oil:
 - In 2010 and 2011, export quantities and prices remain as is in Alternative Two.
 - From 2012 to 2014, the exported quantity is assumed to grow by 20 percent annually as compared to the 2011 level; in other words, daily production will exceed 5 million barrels per day at an assumed price of about US\$70 per barrel. Based thereupon, oil output will grow at a rate of 22 percent per year.

2. Agriculture: It will grow at a rate of 7.0 percent.
3. Electricity and water: They will grow at a rate of 20 percent.
4. Transportation: It will grow at a rate of 6.0 percent.
5. Social services: They will grow at a rate of 20 percent.

Accordingly, and pursuant to this alternative, the GDP will grow at a rate of 17 percent.

Chosen Alternative

Based on discussions held about the three alternatives, and in consideration of Iraq's conditions and production capabilities, another alternative was prepared. It is considered a combination of these alternatives and it was adopted when preparing the plan's estimates. It is as follows:

1. Historical growth rates for the periods 1970-1980, 1980-1990, 1990-2000, 2000-2007, and 1970-2007 were calculated. Based thereupon, rates were calculated for the GDP and labeled as historical rates.
2. Six activities were given special priority. They are:
 - Crude oil extraction, as it guarantees sustainable financial resources at this stage
 - Electricity as one of the central activities relied upon by all production and life activities and areas
 - Agriculture, as it guarantees food security, reduces food imports, and creates a vast number of job opportunities that can reduce unemployment in rural areas and alleviate poverty
 - Social development services, as it is the sector focused on building up the citizenry and providing a social umbrella. It includes the basic infrastructure-supporting services (water and sanitation, education, health, culture, youth and sports, as well as enablement in the area of housing), other services related to the MDGs, and achievement of strategic poverty alleviation objectives.
 - Transportation, as it is an important sector that supports the flow of economic activity and increases its efficiency. It also has a profound impact on the population's quality of life.
 - Conversion industries, as Iraq possesses capabilities, in terms of natural and human resources, that guarantee it a comparative advantage in many industrial activities such as petrochemical, chemical, fertilizer, cement, and food industries. They also constitute a crucial starting point for diversifying the national economy, invigorating participation by the private sector, and ensuring job opportunities.

As for the remaining activities, they were assumed to remain at their historical growth levels. Based thereupon, the growth rate of the GDP will be 9.38 percent annually. Tables (2-5) provide output estimates by activity as well as the magnitude of investments and financial resources needed. They also provide data about what can be funded by the state's public budget and what can be proposed for contribution by the private or foreign sector.

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1.8 The Plan's Anticipated Revenues

1.8.1. Estimates for Oil Revenues

It is well known that more than 90 percent of current operating and investment spending is funded by oil revenues. For that reason, estimates mainly depend on estimating oil output and revenues.

On the other hand, it is also assumed that non-oil revenues will improve in terms of their share of overall revenues.

A committee was formed to estimate revenues for purposes of plan preparation. It consisted of members from the Ministry of Oil, the Ministry of Finance, the Iraqi Central Bank, as well as the MoP. The committee estimated that export quantities will be as set forth in Table 2.

Year	Exported Quantity Million Barrels/Day	Price Dollar/Barrel	Export Value in Billions of Iraqi Dinars
2010	2.150	60	55,089.5
2011	2.300	63	61,880.1
2012	2.500	68	72,598.5
2013	2.800	68	81,310.3
2014	3.100	68	90,022.1

* Dollar = 1,170 dinars for each period.

On the other hand, directors at the Ministry of Oil expect the picture will improve after 2012 based on contracts currently being signed with foreign companies to increase the quantity of oil production and exportation. Accordingly, alternative estimates were prepared based on the expectations set forth in Alternative Three.

1.8.2 Estimate for Non-Oil Revenues

1. Tax revenues will increase at a rate of 15 percent per year over prior levels.
2. The treasury's share of non-oil company revenues will increase at a rate of 15 percent per year for the years 2010-2014.
3. Non-tax revenues of 1,800 billion dinars per year.

Accordingly, the oil and non-oil revenues set forth in Table (3) indicate an anticipation that oil revenues will increase from 55,089 billion dinars in 2010 to 90,022 billion dinars in 2014, while non-oil revenues will increase from 3,263 billion dinars in 2010 to 7,404 billion dinars in 2014. Accordingly, the plan anticipates achievement of total revenues in the amount of 390,397 billion dinars based on the estimates of the plan's Financial Resources Committee and 446,787 billion dinars based on the alternative estimates for oil production and exportation.

Year	Committee Estimates for Oil Revenues	Non-Oil Revenues	Total (-1)	Alternative Oil Estimates	Total (-2)
2010	55,089.45	3,263.6	58,353.1	55,089.4	58,353.1
2011	61,880.13	5,628.2	67,507.7	61,880.1	67,507.7
2012	72,598.5	6,354	78,952.5	82,506.1	88,860.1
2013	81,310.32	6,846.9	88,157.2	99,006.6	105,853.5
2014	90,022.14	7404.4	97,426.5	118,808.8	126,213.2
Total			390,397		446,787.6

Alternatives	30 percent of budget revenues targeted to investment spending		Portion funded by the domestic and foreign private sector	
	Billions of dinars	Billions of dollars	Billions of dinars	Billions of dollars
Alternative One	117,119.1	100	152,345.9	130.2
Alternative Two to be adopted after 2010	134,036.3	114.6	83,600.7	71.5

1.9 Magnitude of Investment

1.9.1 Magnitude of Government Investment

In light of these estimates, and as indicated in Table (2), the anticipated revenues that will be adopted at this time for purposes of preparing the magnitude of government investment are 390,397.0 billion dinars.

Through a historical look, and in light of government obligations toward inflated operating expenses, particularly in terms of the magnitude of salaries, pension payments, and expenses pertaining to security and price subsidies, the public budget can allocate what corresponds to 30 percent of these revenues to investment spending, i.e., 117,119 billion dinars or US\$100 billion, with the hope that the plan and its specifications are revised at the beginning of 2012. The matter may require reconsideration of investment orientations based on what will be achieved by then and what will occur in terms of oil and non-oil revenue changes.

1.9.2 Magnitude of Nongovernment Investment

The magnitude of investment needed to achieve the plan's target growth rate of 9.38 percent annually is 217,637 trillion dinars, or US\$186 billion. It is anticipated that development partners (the domestic and foreign private sector) will fund US \$86 billion, which will be spent in the various fields specified by the plan, as well as other activities not set forth in the plan such as insurance, banks, and other personal services.

1.10 Policies Necessary to Execute the Vision

There is a need for a comprehensive framework of procedures and regulations to ensure good governance that balances among a number of political, social, and economic issues addressed in chapter 12 of the plan document. There is also a need for a number of specialized policies that are directly related to execution of the alternative chosen to grow the GDP and focus on the aggregate aspect of the plan. Sectoral policies will be discussed in the portions dedicated to sectoral development.

1.10.1 Financial Policies

1. Increased funding of the state's public budget from non-oil sources by invigorating economic activity so as to ensure expansion of the tax base.
2. Reconsideration of the spending structure so as to reduce spending on operating areas, redirect funds to investment to fill the gap in investment needs, and use operations spending to support investment spending.
3. Correlation of sums designated for province development to population size, degree of need and deprivation, and the capabilities available in the provinces so as to support the plan's orientations.

4. Management of the government's public debt so as to ensure availability of funding for the state's public budget and issuance of government bonds to avoid inflationary pressure.
5. Reliance on external funding through facilitated loans in the event there is a need to expand funding of strategic projects within the plan.
6. Restructuring and reform of the banking sector to ensure performance of the internal and external banking services needed by the development process.
7. Restructuring of the state's administrative and organizational structure so as to execute, monitor, and oversee public spending.
8. Restructuring at the aggregate economic level as agreed to with the International Monetary Fund (IMF) and in a manner consistent with economic and social development needs.
9. Improvement of the quality and timeliness of the financial and economic data issued by governmental administrations to support decision making as regards overarching economic policies.

1.10.2 Monetary Policies

Monetary policy must support both stability and development. It must also accommodate and complement the financial policy.

The nation needs significant funding for development. Thus, the monetary policy must be more relaxed in terms of lending, reducing cost, managing the public deficit, and promoting investment.

1.10.3 Investment Policy

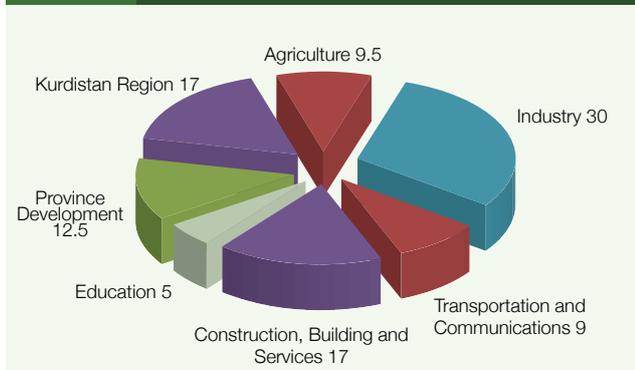
1. The investment policy will support the objective of achieving comprehensive and sustainable development of the economy. As indicated, the magnitude of requisite investment is about 217.6 trillion dinars.
2. Government investment as well as domestic and foreign private sector investment will contribute to executing the plan's aggregate and sectoral objectives. Specifically, the government will contribute 53.7 percent of investment, with the foreign and private sector contributing 46.2 percent of investment during the years of the plan.
3. The plan's investment orientations are based on the principle of sectoral priorities that will promote unbalanced growth during plan years so as to achieve a future goal of balanced sectoral growth. Accordingly, the oil, electricity, and agricultural sectors were accorded investment priority and allocated 15 percent, 10 percent, and 5.9 percent, respectively of total government investment allocations over the five years of the plan. In contrast, 5 percent of total government investment allocations were directed to the conversion industries sector.

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This area was mostly left to private (domestic and foreign) investment. High priority was also given to the transportation and communication sectors for their close connection to economic activity and human prosperity; they were allocated 9 percent of total government investments under the plan.

- The investment policy seeks to reinforce the plan's spatial objective by allocating 14,625 billion dinars, or US\$12.5 billion and 12.5 percent of total government investment allocations under the plan, to the regional development program so as to reinforce the primary principle of promoting decentralization and according a larger role to local governments as regards development.
- The investment policy seeks to build up the Iraqi people, as they are the cornerstone of economic and social progress. For that reason, it has allocated 22 percent of the government investment program to service sectors (water and sanitation, learning, health, education, as well as sports, tourism, and cultural activities).
- Seventeen percent of total government investment, or any percentage to be confirmed by the next population census, was allocated to the Kurdistan region in a phased manner. This is equivalent to 19,890 billion dinars or US\$17 billion (Figure 1).

Figure 1 Distribution of Government Investment (Billion Iraqi Dinars)



1.10.4 Decentralized and Federal Policies

- The plan is careful to involve the provinces' local authorities in the process of preparing and defining their developmental priorities, particularly in the area of availability of social services to citizens, provided the issue of planning and executing strategic projects that serve the Iraqi public and multiple provinces is left to the federal government in consultation with the local authorities concerned.
- Distribution of investments based on a balancing between the principles of social justice (in terms of services and infrastructure) and economic efficiency (in terms of production activities) so as to create a correlation and complementary relationship among regions and provinces and based upon the foundations of comparative advantages, capabilities, and developmental specifications for the region and province.

1.10.5 Policies for Support of the Private Sector

- Building of a partnership between the public and private sectors using all partnership forms and methods as well as concession contracts.
- Improvement and diversification of fundamental infrastructure and services such as electricity and all forms of transportation that help the private sector transport its products and production needs seamlessly and at appropriate cost.
- Opening of the way for direct and indirect foreign investment with continued development of laws and regulations that govern it.
- Streamlining and simplification of governmental procedures and development of laws that promote investment and give Iraq a competitive edge in dealing with businesspeople and investors.
- Reform and conversion of public companies into private or mixed companies by benefiting from laws currently in effect, particularly Laws No. 21 and 22 of 1997.
- Reform of the financial sector, improvement of the banking sector's performance, expansion of loan avenues by providing small and mid-size loans at preferential conditions, and funding small and mid-size projects.

1.11. Estimates for Gross Domestic Product and Expected Inflation

As indicated in the chosen alternative, the GDP will grow at an annual rate of 9.38 percent. Furthermore, sectoral growth rates were calculated in light of their historical flexibility pursuant to the specifications referred to in the aforementioned alternative. Accordingly, the GDP at 1988 prices will increase from 54,654.2 million dinars in 2009 to 85,568.3 million dinars in 2014 (Table 4). GDP estimates were also prepared at current prices for the years 2009-2014 as indicated in Table 5 based on a group of deflators. As indicated in Table 6, the deflator adjusted inflation rate will reach 41 percent during the plan period of 2010-2014, as compared to the previous rate of 22 percent. It is worth noting and emphasizing that both the financial and monetary policies must consider this inflation rate out of concern for its known impact on spending habits.

It is also worth noting that all future estimates and analyses of plan results must be at 1988 prices or any other base year as the estimates at current prices set forth in Table 5 are subject to significant and continuous fluctuations in light of the price fluctuations that will occur.

Table 4		Gross Domestic Product Estimates for Plan Years 2010-2014 at 1988 Prices (Billions of Iraqi Dinars)					
Activities	Plan Rate of Growth	Plan Years					
		2009	2010	2011	2012	2013	2014
Crude oil extraction	10.5	22,971.2	25,383.2	28,048.4	30,993.5	34,247.8	37,843.8
Commodity activities							
Agriculture	5	4,442.7	4,664.8	4,898.1	5,143	5,400.1	5,670.1
Conversion industry	6.3	1,234.9	1,312.7	1,395.4	1,483.3	1,576.8	1,676.1
Electricity, water and gas	15	875.8	1,007.2	1,158.2	1,332	1,531.8	1,761.5
Building and construction	7.6	1,996.4	2,148.1	2,311.4	2,487	2,676.1	2,879.4
Other forms of mining	5.7	105.6	111.6	118	124.7	131.8	139.3
Distribution activities							
Transportation, transport and communications	4	1,885	2,074.8	2,157.8	2,244.1	2,333.9	2,427.2
Wholesale and retail commerce	5.8	3,544.2	3,749.8	3,967.2	4,197.4	4,440.8	4,698.4
Banks and insurance	16	904.4	1,049.1	1,217	14,117.7	1,637.5	1,899.5
Service activities							
Social development services	12	9,243.2	10,352.4	11,594.7	12,986	14,544.44	16,289.7
Personal services	1.8	615	626.1	637.3	648.8	660.5	672.4
Home ownership	7.4	6,725.8	7,223.5	7,758	8,332.1	8,948.7	9,610.9
Gross domestic product	9.38	54,654.2	59,780.8	65,388.2	71,521.6	78,230.3	85,568.3

Table 5		Gross Domestic Product Estimates for Plan Years 2010-2014 at Current Prices (Billions of Iraqi Dinars)					
Activities	2009	2010	2011	2012	2013	2014	
Crude oil extraction	101,853,066.9	138,546,274.5	188,458,020.8	256,351,114	348,702,706.3	474,324,361.7	
Commodity activities							
Agriculture	63,628,081.3	118,051,474.8	219,029,486.8	406,375,963.3	735,962,662.5	139,886,339.2	
Conversion industry	2,803,946.9	3,529,028.6	4,441,606.8	5,590,132.4	7,035,928.3	8,855,160.251	
Electricity, water and gas	1,686,633.7	2,191,845.7	2,848,106.8370	3,701,309.3	4,809,851.4	6,250,153.57	
Building and construction	9,992,727.9	14,966,844	22,417,649.9	33,576,080.2	50,291,638.1	75,324,226.26	
Other forms of mining	643,581.8	97,6693.9	1,482,964.4	2,250,451.3	3,415,647.3	5,183,978.115	
Distribution activities							
Transportation, transport and communications	24,573,784.4	35,677,203.1	51,797,782.6	75,201,690.6	109,182,506.6	158,511,873.2	
Wholesale and retail commerce	15,095,310.2	19,883,886.6	26,190,670.7	34,499,455	45,442,523.7	59,857,774.67	
Banks and insurance	3,097,312.4	4,368,928.3	6,162,858.3	8,692,958.3	12,261,400.1	17,295,440.56	
Service activities							
Social development services	17,250,472.4	21,986,796.1	28,023,519.8	35,717,481.4	45,524,323.5	58,023,381.99	
Personal services	3,851,583.7	5,160,167.7	6,912,257.6	9,260,676.8	12,406,823.4	16,621,544.31	
Home ownership	17,181,003.8	24,578,563	35,161,129	503,004,342.2	71,958,389.4	102,941,328.5	
Gross domestic product	261,657,505.4	389,917,706.4	592,926,053.6	921,517,746.8	1,464,994,401	2,382,052,616	

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Table (6)		GDP Deflators (Billions of Iraqi Dinars)					
Activities	Growth Rate	2009	2010	2011	2012	2013	2014
Crude oil extraction	23.1	4,433.9	5,458.2	6,719	8,271.1	10,181.8	12,533.7
Commodity activities							
Agriculture	76.7	14,321.9	25,306.9	44,717.2	79,015.4	139,620.1	246,708.8
Conversion industry	18.4	2,270.6	2,688.4	3,83.0	3,768.7	4,462.2	5,283.2
Electricity, water and gas	13.0	1,925.8	2,176.2	2,459.1	2,778.8	3,140.0	3,548.2
Building and construction	39.2	5,005.4	6,967.5	9,698.7	13,500.6	18,792.9	26,159.7
Other forms of mining	43.6	6,094.5	8,751.7	12,567.5	18,046.9	25,915.4	37,214.5
Distribution activities							
Transportation, transport and communications	39.6	12,317.7	17,159.5	24,004.9	33,510.8	46,781.1	46,781.1
Wholesale and retail commerce	24.5	4,259.2	5,302.7	6,6601.8	8,219.2	10,233.0	12,740.0
Banks and insurance	21.6	3,424.7	4,164.5	5,064.0	6,157.8	7,487.9	9,105.3
Service activities							
Social development services	13.8	1,866.3	2,123.8	2,416.9	2,750.5	3,130.0	3,562.0
Personal services	31.6	6,262.7	8,241.8	10,846.2	14,273.5	18,784.0	24,719.7
Home ownership	33.2	2,554.5	3,402.6	4,532.2	6,03666666	8,041.2	10,710.9

1.12 Estimates for Gross Fixed Capital Formation (Investment)

Usually, and in light of the data available, the capital coefficient (k/y), i.e., the ratio of capital to output, is used to estimate the magnitude of the investment necessary to achieve the target growth rate. Because it was not possible to calculate this coefficient on a sectoral level, the aggregate capital coefficient was used to estimate the magnitude of investment in gross fixed capital formation. The coefficient is 4:1, i.e., four units of capital are needed to produce one unit of output.

This correlation has applied in the Iraqi economy over the past decades, particularly during the years 1980-1989, the First Gulf War years. As for the most recent years 2004-2008, in light of the adjustments made to output and formation figures, in light of the proposals to re-evaluate the prices for processed petroleum to national refineries, and in light of the magnitude of subsidies entering into gross fixed capital formation, the decision was made to adopt this correlation until a coordinated time series of overall economic indicators has been prepared.

In any event, a ratio of 4:1 is the acceptable ratio and, in light of this ratio, the magnitude of overall investment was estimated at US\$186 billion. It is arrived at by multiplying the increase in output at fixed prices by 4 and converted using a foreign exchange rate of US\$1 equal to 1,170 dinars.

1.13 Labor Force

To estimate the labor force needed to execute this plan, and using the method of labor to output (L/Y) or productivity (Y/L), the target output increase and assuming a magnitude of investment of US\$168 billion, more than 4.5 million job opportunities will be created and available over the coming years (2010-2014). However, it is worth noting that this figure is for illustrative purposes and may be lower in light of the nature of projects included in the plan and the funding investment that will be achieved from nongovernment funding sources. In any event, it is likely to be no fewer than 3 million job opportunities in addition to what is currently being achieved.

Chapter Two

Population and Labor Force



Population and Labor Force

2.1 Population Development

The 1994 International Conference on Population and Development, held in Cairo in 1994, is considered an important turning point in the history of worldwide concern for population policies. Iraq, however, did not participate in the conference, not wanting to take on any direct or indirect commitments with regard to the population policies outlined in the conference's agenda. This created an official absence of declared population policies in Iraq.

For decades, Iraqi development plans had not reflected the crucial relationship between population and development, but instead had sought to neutralize that relationship's positive and negative effects. Positive effects included promotion of investment and growth and improvement of quality of life; negative effects included revival of unsustainable consumption and production patterns that waste Iraq's nonrenewable resources, especially oil.

Population was neglected, as was its status as a functional correlation variable affecting the change in macroeconomic components; the structure of economic activity; equilibrium in the job market; and trends in, and forms of, employment and unemployment. The unavoidable truth is that one cannot comprehensively address the challenges facing the Iraqi economy, now or in the future, outside the framework of a clear vision and objective analysis of the population's demographic, quantitative, and qualitative problems. The current national plan seeks to acknowledge this fact by embodying the developmental correlations between population and development. It seeks to do so by adopting a development policy that reflects our new understanding of these correlations, supports expanded choices for all of the population, and ensures human rights based on the fact that development is development of the people, by the people, and for the people. The plan also seeks to acknowledge the reality of current failures, along with their short- and mid-term effects, and to address them. The biggest developmental challenge in the area of population will be the extent to which it can fulfill the current generation's needs and improve their quality of life without jeopardizing future generations' ability to fulfill their needs.

2.2 Population Size and Growth Rates

The absolute population growth rate in Iraq has risen rapidly and continually and has not been affected by growth or decline in the Iraqi economy over time. This was confirmed by the results of the five general population censuses conducted in Iraq beginning in 1947 and ending with the most recent in 1997. It was also confirmed by population surveys and estimates prepared by the Central Statistics Organization (CSO) in 2003. Data show that the Iraqi population increased from about 8 million people in 1965 to 12 million people in 1977, to 16 million people in 1987, to 22 million people in 1997, to 26 million people in 2003 to 30.5 million people in 2008. The Iraqi population is expected to reach 35 million people by the year 2014.

The absolute population increase is the natural result of the rise in the population growth rate, which remained at the high

rate of 3.1 percent during the 1970s and 1980s. At that time, the government urgently desired to increase it further, so it adopted programs and procedures aimed at providing financial and moral incentives such as encouraging early marriage and increasing provisions for the families of state agency workers with four or more children. The birth rate declined for the first time after 1990. Official estimates indicate that the population growth rate in Iraq fell to 2.8 percent as a result of unique, well-known circumstances in Iraq at that time. Specifically, the overall fertility rate fell from 6.2 percent in 1987 to 4.7 percent in 1993; the infant mortality rate rose from 64.1 per 1,000 births in 1987 to 111.7 per 1,000 in 1994; and the birth rate fell from 43 per 1,000 live births in 1974 to 38 per 1,000 in 1994.¹ The comprehensive economic embargo also exacerbated the demographic situation and created obstacles that persisted and were compounded by other problems not previously experienced in Iraq. These included a lack of interest in marriage and preference for migration among youths; return of foreign workers to their countries; and an increase in the cost of living.

Iraq went through a complete transformation after 2003 that was replete with variables that affected population demographics, including a decline in the overall fertility rate to 4 percent in 2006 (it still remains 65 percent higher than the international rate of 2.6 percent); a decline in birth rates to 31 per 1,000 people per the results of the cluster survey conducted for 2006; a decline in the infant mortality rate to 35 per 1,000 live births during the period 2001-2005; and an increase in the number of displaced people within and outside Iraq. The International Organization for Migration (IOM) estimates that one-fifth of Iraq's population has emigrated.

Despite the decline in most demographic indicators after 2003, Iraq's population growth rate has remained, and is expected to remain, at 3 percent over the mid- and long term because of increased birth rates and decreased death rates resulting from the expanded provision of preventive care and medical services. This rate is considered the reason that Iraq has been late in entering the demographic dividend zone. Accordingly, the current development plan will seek to contain these population phenomena using procedures and programs with insightful, calculated, and logical objectives that are founded on planning and organizational trends, so that population quantity and quality are used to guide development policy in Iraq with an eye toward sustainable development.

¹ As indicated in various studies, fertility rates are affected primarily by the mother's educational level, and despite all circumstances, women's educational rates are increasing (slowly). Fertility rates are therefore falling. Wars and unemployment may lead to an increase in fertility rates.

2.3 Population Structure

2.3.1 By Age

The population growth rate naturally affects the age of population groups and the shape of the population pyramid. Population censuses indicate that there have been tangible changes in the population's age structure. The under-14 year old age group increased from 45 percent in 1970 to 47 percent in 1987 and declined to 44.2 percent in 1997. This trend is best explained by the decline in female fertility rates and the increase in death rates as a result of wars and the embargo. Their share of the population continued to decline after 2003, reaching 38.49 percent in 2008. This is in sharp contrast to countries with high human development, where the rate is no more than 19.6 percent. The high rate increases the burden on the budget, for it requires increased spending on education and health. It also imposes pressures on economic resources to cover the consumption needs of this age group that are outside the scope of economic activity. This trend expanded the base of the population pyramid and gave it the feature of a young pyramid with high economic vitality. The base began to shrink, however, after 2003. As for the working age (15-64 years) population group, it gradually declined from 49.8 percent in 1970 to 47 percent in 1987, as a result of the younger group's relative magnitude. It increased again in the 1990s, reaching 52.2 percent in 1997 as a result of decline in the relative magnitude of the first age group. Statistical surveys have confirmed that after 2003, the gradually increasing trend of this population group continued until it reached 58.44 percent in 2008. In contrast, the 65+ year age group declined from 5.1 percent of the population in 1970 to 3.4 percent in 1987 and 2.8 percent in 1997. It increased slightly after 2003 to reach 3.7 percent in 2008.

2.3.2 By Sex

In Iraq, the ratio of males to females remained almost equal for the entire period between 1970 and 2008. External migration did have slight effects on the percentage of males. Population statistics indicate that males accounted for 51.4 percent and females accounted for 48.6 percent of the total population. These percentages remained relatively stable, with a slight change noted after 2003; the percentage of males declined to 50.88 percent and the percentage of females increased to 49.12 percent of the total population in 2008. External migration is a convincing reason for the decline in the percentage of males in Iraq after the events of 2003.

2.3.3 By Environment

There has been an increase in the urban population as compared to the rural population since 1997, when the rates were 75 percent and 25 percent, respectively. The nature of development policies implemented previously, the mechanism for distributing investments geographically among provinces, and the effects of internal migration all played a role in defining the population's distribution in Iraq. Surveys have shown that internal migration contributed to a 45 percent urban population growth rate during the period 1960-1980. Its contribution declined to 29 percent during the period 1980-1995 as a result of state efforts to limit population mobility through economic,

social, and legal means. There were also reverse migration phenomena during the years of the economic embargo. After 2003 however, the trends in distribution changed. In 2008, the rural population increased to 35.76 percent, while the urban population declined to 64.24 percent. Spreading violence in the main provinces and their centers, as well as forced migration, played a major role in the nature and percentage of that distribution.

2.4 Economically Active Population

The economically active population falls within the 15-64 years age group. They represent the labor force available in the economy. They can be categorized as the employed and unemployed.

The 1997 General Population Census indicates that 23.5 percent of the total population participated in economic activity. This figure increased to 24.8 percent in 1987, declined to 23 percent in 1997, and then increased after 2003 to reach 29 percent in 2008. However, the slight increase and then continued decline for decades, as compared to international rates, was an inevitable result of the economic recession; the lack of employment opportunities available to working-age population groups entering the job market for the first time; and the continuing deterioration in the security situation after 2003, which limited the possibilities for participation by the economically active population of working age.

There was a decline in the rate of participation in economic activity by the working-age population from 45.2 percent in 1987 to 43.6 percent in 1997. There was a relative increase after 2003, when the rate reached 52 percent in 2008. Effectively, participation by the working-age population in economic activity fell by half. These data are considered to be statistical confirmation of the presence of unemployment in the ranks of the actual labor force. However, looking at the distribution of the economically active population by gender males accounted for 46 percent and females accounted for 11 percent in 2008. This explains the decline in the rate of female participation in economic activity, despite the comparable ratio of males to females in the population as a whole, as well as their comparable ratio in the working age population, where females accounted for about 53 percent of the total in both of these categories in 2008. In contrast, the percentage of male participation in economic activity accounted for about 83 percent as compared to females, whose participation was only 17 percent per 2008 statistics (Table 7).

Population and Labor Force

2. Population and Labor Force

Table 7 Population, Working-Age Population, Economically Active Population, and Participation Rates for the Years

Year	2002-2004-2008	Population	Working Age Population	Economically Active Population	Economically Active of Working Age	% of Working Age Population	Economic Activity Rates	Active of Working Age / Working Age Population
2002	Males	12,814,121	6,789,847	5,724,359	5,520,812	52.99	44.67	81.31
	Females	12,750,714	6,670,880	1,201,175	1,173,210	52.32	9.42	17.59
	Males and Females	25,564,835	13,660,784	6,925,534	6,694,022	53.44	27.09	49.00
2004	Males	13,629,337	7,269,084	6,154,288	5,948,151	53.33	45.15	81.83
	Females	13,510,248	7,113,984	1,351,909	1,322,989	52.66	10.01	18.60
	Males and Females	27,139,585	14,596,762	7,506,197	7,271,141	53.78	27.66	49.81
2008	Males	15,394,248	8,274,241	7,129,446	6,916,433	53.75	46.31	83.59
	Females	15,183,550	8,052,637	1,717,759	1,686,677	53.04	11.31	20.95
	Males and Females	30,577,798	16,571,888	8,847,205	8,603,110	54.20	28.93	51.91

2.4.1 Labor Force and Employment

The working-age population is society's inherent power, as it constitutes the available labor force. A portion of that population must be discounted because of voluntary and obligatory unemployment. This increases the degree of dependence in the economy, which were 113 in 1977. It is worth noting that the degree increases as the population growth rate increases when compared to the labor force growth rate. This has been confirmed by historical statistics for the period 1977-1997. The population growth rate was 3.1 percent, while the labor force growth rate was no more than 2.7 percent. That is because, during that period, the labor force was affected by a number of demographic, economic, and social factors including the Iraqi population's age structure, which tended toward a population group under 14 years, the limited availability of educational opportunities that facilitated participation in the job market, and the low rate of female participation in economic activity. Post-2003 statistical surveys conducted in Iraq have confirmed a tangible decline in the degree of dependence within the Iraqi economy. Indeed, it fell to 76 in 2008, when the population's age structure changed and the working-age group increased to 58.44 percent. This increase not only means a decline in the degree of dependence but also the availability of additional labor supply entering the job market, estimated to be about 1,331,970 workers for the 2004-2008 period. This presents a serious challenge to the current development plan, namely, the extent to which it will be capable of creating job opportunities for the additional current and future labor supply in light of productivity, financial, and institutional constraints, as well as the clear disparities in the size and distribution of the labor force by economic activity and sector.

The total labor force in Iraq, both in private and public sectors, was estimated to be 5,072,811 in 2002 and grew to 7,664,177 in 2007. The employment rate of the labor force in the public sector was 19.3 percent in 2002 and declined to 14.7 percent in 2007 because of changes in the form and content of employment in Iraq after 2003. The private sector had a higher rate, which increased from 80.7 percent in 2002 to 85.3 percent in 2007. This disparity in labor distribution rates between the private and public sectors was accompanied by

a clear disparity in the labor distribution by economic activity in 2007. The private sector had the highest employment rates in the fields of agriculture, fishing, and wholesale and retail commerce, where the rate was 98 percent. This was followed by a 90 percent employment rate in the fields of building and construction, 82 percent in the fields of transportation and communications, and 66.5 percent in conversion industries. The private sector recorded a decline in employment rates in the fields of mining, quarries, and extraction at 14.5 percent, water and electricity at 18.5 percent, and the service sector at 35 percent. Employment rates were evenly distributed between the public and private sectors in the fields of finance and insurance. Based upon these data, the NDP seeks to provide the institutional environment necessary to support and promote the private sector as well as render it a principal and effective partner in implementing development objectives, thereby creating new jobs that absorb the increase in accumulated and anticipated labor supply indicated by the statistical data.

Modernization also negatively affected the nature of employment trends in Iraq. The percentage of employees involved in non-commodity activities went from 59 percent in 2006 to 82 percent in 2008, pointing to the conversion industry's inability to absorb the increase in the labor force; only 5.9 percent of employees worked in that sector in 2006. This rate increased to 13.7 percent in 2008, confirming that the labor force's rural-to-urban migration was the result of industrial factors and attraction, as is the case in developed countries. Rather, it was the result of the factors of eviction from rural areas. Looking at the employment structure by gender the rate of female participation in economic activity is low and influenced by institutional, cultural, economic, and legal factors that have exacerbated the severity of this decline when compared to males. This will be addressed in more detail in the section analyzing gender and society in chapter 8.

2.4.2 Unemployment

The high unemployment rate phenomenon was not prominent during the 1980s and 1990s because of the mandatory military

draft that applied to most of the economically active population. The unemployment rate was no higher than 5 percent per 1987 statistics. However, after 2003, unemployment rates skyrocketed, their trends varied, and their underlying reasons multiplied and were compounded by current conditions, resulting in an increase in the unemployment rate to 28 percent pursuant to the CSO's 2003 employment and unemployment survey. The rate subsequently declined to 18 percent in 2006 and 15 percent in 2008 as a result of the employment policy adopted by the government after 2005 that aimed to increase employment by the state and the security apparatus.

The employment and unemployment survey data also showed that unemployment rates among males were higher in 2003, reaching 30.2 percent and declined to 14.3 percent in 2008. In contrast, unemployment rates among females increased in 2008 to 19.6 percent after they had been 16 percent in 2003. The unemployment rate for youth between the ages of 15 and 24 years increased to 30 percent, and the rate for males within that category was 30 percent, as compared to 32 percent for females. Individuals in the 60-64 years age group had the lowest unemployment rate at 4.63 percent based on the results of the 2008 survey.

The differences are even clearer when comparing urban and rural areas. The unemployment rate in urban areas declined from 30 percent in 2003 to about 16 percent in 2008, while the rate declined in rural areas from 25 percent in 2003 to 13 percent in 2008 (Table 8). The lack of security, failure of reconstruction projects to create new job opportunities, decline in investment spending allocations as a percentage of total public spending, absence of foreign investment supporting the principle of national labor employment, and the inefficacy of external grants and loans in creating job opportunities are all considered factors in raising unemployment rates in Iraq.

2.5 Challenges

1. Iraq's population growth rate remains high despite the slight decline over the mid- and long term as a result of the rise in the overall fertility rate, which spurs a continual increase in consumption spending rates to fulfill the needs of consumers in population groups below the working-age as well as the over working-age groups, which are paid for from investment spending.
2. Less than half of Iraq's population are consumers; the rest are producers responsible for helping both themselves and the consumer segment of society. This puts pressure on economic resources and makes it challenging for the job market to create new job opportunities.
3. The decline in the rate of participation in economic activity by the population group between the ages of 15 and 64 years despite the rise in their proportion of the overall population.
4. Unemployment rates are still high. They have noticeably stabilized among the youth category; however, females in this category maintain a higher rate than males.
5. The increase in modernization has had a negative impact on employment trends in Iraq. Statistical data has shown

concentration of the labor force in non-commodity activities at the expense of commodity activities, which has led to increases in their prices.

6. The employment policy has been inefficient in responding to the needs of Iraq's job market because of its overall detachment from the economic mechanisms that should govern the course of its components.

2.6 Policies

1. A sound population policy would aim over the long term to reduce the overall fertility rate and thus the population growth rate so Iraq can prepare to enter the demographic dividend.
2. The Iraqi economy's efficiency must improve by increasing the absorptive capacity of investment in order to increase the level of productivity and output and ensure coverage of the increases in aggregate effective demand for both the consumer and producer categories. This reduces the pressure on economic resources.
3. Advanced training and qualification programs can contribute to empowering the Iraqi labor force and increase its skill level in a manner consistent with and complementary to Iraqi job market needs, thereby increasing the rate of participation in economic activity.
4. Affirmation of women's economic role by adopting a strategy to improve their economic and social conditions would empower them and expand their options and participation. This would, in turn, reinforce the culture of parity and equality between genders in obtaining job opportunities.
5. Iraqi youth need to be empowered and their effective participation encouraged in areas that support the paths of sustainable development.
6. To ensure the efficacy of employment policy, there must be balance for the labor force that achieves harmony between labor supply and demand. The development plan should evaluate the country's actual needs from the available labor force and ensure the accuracy of its quantitative and qualitative sectoral trends.
7. To contain population movements resulting from urbanization, it is necessary to adopt advanced agricultural policies that make rural development a priority, attract and settle migrant labor, correct the sectoral problem of enlarged non-commodity sectors, and encourage the private sector to invest in rural areas and develop animal resources. For its part, the state would provide a comprehensive system of agricultural incentives that encourage investors and farmers to use modern technology and improved seeds to boost farmers' output and income.
8. To address structural problems in the labor force distribution between commodity and non-commodity sectors, it is necessary to select and support the sectors that absorb large numbers of the labor force; that is, sectors that use a labor-intensive and less capital-intensive production approach, such as the construction and building sector

Population and Labor Force

Table 8 Unemployment Rates in Iraq by Environment and Gender for the Years 2003-2008^a

Year	Urban			Rural			Urban and Rural			
	Males	Females	Males & Females	Males	Females	Males & Females	Males	Females	Males & Females	
2003 ²	31.1	22.3	30.0	28.9	6.7	25.4	30.2	16.0	28.1	
2004 ²	28.3	22.4	27.7	31.2	3.1	25.7	29.4	15.0	26.8	
2005 ³	18.6	22.7	19.3	20.2	2.6	16.9	19.2	14.2	18.0	
2006 ⁴	19.7	37.4	22.9	15.0	8.0	13.2	16.2	22.7	17.5	
2007 ⁴	11.4	14.7	11.9	12.3	5.0	11.0	11.7	11.7	11.7	
2008	1 st Quarter	16.0	26.0	17.8	17.3	11.3	16.1	17.1	23.4	18.2
	2 nd Quarter	13.4	25.4	15.5	15.8	8.4	14.0	15.1	19.5	15.9
	3 rd Quarter	12.3	26.1	14.7	14.6	7.5	12.9	13.8	18.5	14.7
	4 th Quarter	10.6	22.5	12.7	11.8	6.3	10.5	11.3	17.4	12.5
Average 2008 ^a	13.7	25.0	15.2	15.2	8.4	13.4	14.3	19.7	15.3	

- a Central Organization for Statistics and Information Technology. Surveys of Employment and Unemployment in Iraq for the Years 2003-2008.
 2 Excluding the Kurdistan region.
 3 Excluding Arbil and Dahuk
 4 Urban data for the urban centers

and the service sector. This will effectively contribute to addressing high unemployment rates.

9. To achieve a complementary partnership between the public and private sectors there must be an economic/institutional/legal framework that ensures promotion of this partnership and encourages the private sector to increase productive investment rates, embarks on fields that used to be monopolized by the public sector, and build a build-operate-transfer (BOT) method that crowns the efficacy of this partnership.

2.7 Vision

The vision is to design a population policy aimed at achieving a balanced population growth rate that results in better human development and considers job market needs, thereby securing achievement of an optimal employment rate for the labor force.

2.8 Objectives and Means of Achieving Them

The plan seeks to translate the vision by adopting the objectives outlined below.

First objective: Reduction of unemployment rates from 15 percent to 7 percent during plan years by:

1. Adopting a labor-intensive technique in economic activity to create new job opportunities and contribute to absorption of additional job seekers.
2. Supporting sectors that absorb large numbers of workers so as to reduce unemployment, including the construction and building sector and the service sector.

3. Crafting a new economic policy focused on liberating the market and working to support the private sector and reinforce its participation in economic activities so as to promote growth and create job opportunities.

Second objective: Increase in economic participation in general and female participation in particular by:

1. Reconsidering all economic, financial, and business regulations and laws governing promotion of economic activity.
2. Increasing private sector investments through legal, institutional, financial, and monetary incentives.
3. Providing unemployment benefits to help the unemployed start small projects and contribute through various economic activities.
4. Employing programs that promote and reinforce the skills of workers, particularly female workers.

Third objective: To connect educational and training system graduates and labor market needs in terms of educational levels, specializations and skills by:

1. Reconsidering the qualitative and quantitative aspects of the educational and training systems.
2. Benefiting from educational and technological advances and their incorporation in academic curricula.
3. Quick and timely responsiveness to job market needs via a labor force trained using state-of-the-art technologies.

Fourth objective: Improve the quality of the labor force by:

1. Preparing a special training policy that works to qualify labor and takes on a principal role in making the requisite structural changes.
2. Working to restructure training centers throughout Iraq and provide all practical training needs, both material and human.
3. Assumption by training centers of responsibility for improving training levels to enable the private sector to establish small projects.
4. Work to study some international systems that provide training for different skills so as to rely on the best of them, and developing them in a manner that suits the needs of the Iraqi job market.

Fifth objective: To increase the labor force's efficiency and productivity by:

1. Pursuing modern work systems and methods.
2. Directing human resource development programs so as to fulfill the needs of rapid development in various aspects of life and benefit from the incredible advances in the field of information technology.
3. Defining orientations and objectives to develop the skills and capabilities of the working-age population and preparing them for incorporation in the production process.

Sixth objective: Work to create job opportunities throughout Iraq so as to ensure a balanced distribution of the labor force by:

1. Devising a spatially balanced employment policy.
2. Geographically redistributing investments while considering a location's comparative advantage.
3. Keeping labor laws flexible and working to modernize them in accordance with economic and social advances.

Seventh objective: Arrive at the optimal employment level for the labor force by:

1. Diversifying the economy and reinforcing the importance of the growth of non-oil economic sectors.
2. Addressing instabilities in the labor force structure based on their sectoral and gender distribution .
3. Adopting an effective employment policy grounded in reality.
4. Empowering the producer category in the economy.

Eighth objective: Promotion of worker performance levels in the public and private sectors by:

1. Embodying modern administration principles in training programs.
2. Developing trainees' personal skills by adopting high-quality training programs that are consistent with the economy's identified needs.

Chapter Three

Overall Economy



Overall Economy

Overall indicators show that Iraq's economy transitioned from a phase of development and growth during the 1970s, to recession and collapse in the 1980s and 1990s, to a stage of recession between 2003 and 2006, and finally to a stage of growth after 2007. This chapter sheds light on the historical development of Iraq's macroeconomic indicators.

3.1 National Income and Per Capita Income

As Iraq implemented consecutive development plans during previous decades, it witnessed severe fluctuations in the national income and per capita national income growth rates. Local production increased in favor of agriculture and industry, while crude oil continued to dominate as the source of foreign currencies. The national income jumped from 938 million dinars in 1970 to 15,440 dinars in 1980, i.e., a 939 percent increase between 1970 and 1980.

The extensive efforts exerted in the 1970s to achieve the nationalization of oil and its price increases may explain the substantial increase in the national income during that decade. This growth rate declined in the 1980s, with the national income reaching 13,009 dinars in 1985. This was a result of the First Gulf War and stoppage of Iraqi crude oil exports, both of which had negative effects on the national income. However, the increase in national income subsequently continued, reaching 47,942 million dinars in 1990. It then increased to 46,635 billion dinars in 2000 and fell to 25,729 billion dinars in 2003. The decline resulted from the changes that took place in 2003 as shown in Table 9. National income reached 100,101 dinars in 2007, an increase of 74 percent between 2003 and 2007.

Year	National Income (millions of dinars)	Per Capita Income (Iraqi dinars)
2003	25,728,748.0	976,794.0
2004	46,923,315.7	1,728,935.7
2005	65,798,566.8	2,353,058.2
2006	85,431,538.8	2,926,339.0
2007	100,100,816.6	3,372,433.0

The fluctuations in national income have obviously influenced per capita income. Thus, it increased from 98 dinars in 1970 to 1,166 in 1980, and then decreased to 835 dinars in 1985. For the aforementioned reasons, per capita income rose to 2,680 dinars in 1990 and 1.9 million dinars in 2000. It decreased to

0.98 million dinars in 2003 and then increased again, due to the increase of Iraqi crude oil exports, to approximately 3.4 million dinars in 2007. This constituted an average growth of 24.4 percent between 2003 and 2007 at current prices.

3.2 Gross Domestic Product and Per Capita Gross Domestic Product

Iraq's GDP increased from 1.2 billion dinars in 1970 to 15.8 billion dinars in 1980 at current prices. This constituted an overall increase of 1246 percent and a compounded average growth rate of 29.7 percent between 1970 and 1980. This obviously influenced per capita GDP, which increased from 123 dinars in 1970 to 1,191 dinars in 1980. However, this increase slowed in the 1980s when the GDP fell to 15 billion dinars in 1985. It rose to 56 billion dinars in 1990. Despite this increase, the average rate of GDP growth fell to 13.6 percent at current prices between 1980 and 1990, and 4.5 percent at fixed prices during that period. As a result, per capita GDP fell to 963 dinars in 1985. Undoubtedly, this deterioration was a result of the mobilization of economic, financial, and human resources to support military activities. This deterioration was further exacerbated by the stoppage of Iraqi crude oil exports from the Persian Gulf and stoppage of the pumping of oil through Syria in 1982. This was coupled with reduced production in most industrial establishments because of lack of human resources and insufficiency of foreign currency to import the intermediate commodities and raw materials needed for most economic activities, particularly conversion industries, but the transport and communications sectors as well.

During the 1990s, GDP increased until it reached 6.7 trillion dinars in 1995 and almost 50 trillion dinars in 2000 at current prices. This increase influenced per capita GDP, which increased from 3,126 dinars in 1990 to 326,000 dinars in 1995 and more than 2 million dinars in 2000. Economic growth data indicate that, between 2003 and 2007, the GDP, as measured at current prices (Table 10), increased from 29.6 trillion dinars in 2003 to 111.5 trillion dinars in 2007, a 277 percent increase during that period and an average annual growth rate of nearly 39 percent. When measured at fixed prices, GDP grew from 27 billion dinars in 2003 to 48.5 billion dinars in 2007, a growth rate of 80 percent for that period, or an average growth rate of 16 percent per year. This reflects the presence of high inflationary pressures.

Year	GDP at current prices (millions of Iraqi dinars)	Per capita GDP at current prices (Iraqi dinars)	GDP at fixed prices (millions of Iraqi dinars)	Per capita GDP at fixed prices
2003	29,585,788.6	1,123,227.0	26,990.4	1,025
2004	53,235,358.7	1,961,509.2	41,607.8	1,223
2005	73,533,598.6	2,629,674.9	43,438.8	1,226
2006	95,587,954.8	3,274,233.0	47,851.4	1,661
2007	111,455,813.4	3,754,986.0	48,510	1,634

These increases influenced per capita GDP, which increased from approximately 1.1 million dinars in 2003 to approximately 3.8 million dinars in 2007 at current prices, an increase of 234 percent. Per capita GDP also increased at 1998 prices. Specifically, it rose from 1,025 dinars in 2003 to 1,634 dinars in 2007, an increase of 58 percent.

3.3 Gross Domestic Product by Economic Activity at 1988 Prices

Economic sectors have contributed to the GDP at varying rates during the course of Iraqi development. However, despite any variation, oil, mining, and quarries have contributed the most to GDP generation. Their rates have fluctuated over time as a result of unsteady internal and external political and economic circumstances. Furthermore, crude oil prices have been heavily influenced by international factors. Accordingly, its contribution to GDP in the early 1970s was influenced by the nationalization of oil. Specifically, it was only 32 percent in 1970 and increased to 64.5 percent in 1979 as compared to a contribution of 14.1 percent from the agriculture sector, 1.3 percent from conversion industries, and 16.1 percent from the social development services sector.

During the 1980s, these percentages were influenced by involvement in the First Gulf War. The contribution by the oil, mining, and quarries sector to GDP fell 32.7 percent in 1989; the agricultural sector's contribution was 16.5 percent, the conversion industries sector was 14.1 percent, and the social development services sector was 19.5 percent during the same year. These percentages fluctuated during the economic sanctions and influenced the contributions by the various sectors to generating GDP. The contribution from oil, mining, and quarries rose during the economic sanctions period to 50.7 percent, the agricultural sector accounted for 21.3 percent, and the conversion industries' share fell to 8.1 percent after the closure of most factories.

After 2003, the sectors' contribution to GDP was influenced by political and economic events. As Table 11 shows, the contribution from oil, mining, and quarries increased from 59.9 percent in 2003 to 85.8 percent in 2007. The agricultural and industrial sectors' contributions to GDP were no greater than 9.2 percent and 2.3 percent, respectively, in 2007.

Year	2003	2004	2005	2006	2007
Agriculture, forests and hunting	3,850.3	4,521.8	5,939.6	6,195.9	4,479.7
Mining and quarries	13,930.0	19,837.5	18,397.5	19,409.4	20,865.2
Crude oil	13,917.1	19,789.4	18,319.6	19,327.5	20,778.5
Other types of mining	12.9	48.1	77.9	81.9	86.7
Conversion industries	1,243.9	966.6	956.0	1,056.4	1,122.4
Electricity and water	200.0	423.6	489.6	537.4	598.6
Building and construction	258.4	720.3	1,495.0	1,578.5	1,607.9
Commodity sectors	33,412.6	46,307.3	45,675.2	48,187.0	49,539.0
Transport, communications and storage	1,259.9	1,924.0	1,867.6	1,395.8	1,160.2
Wholesale, retail commerce and hotels	1,056.4	2,293.7	2,545.0	2,736.0	2,537.8
Money, insurance and airport services	1,119.9	5,837.5	6,070.1	6,591.7	7,290.5
Banks and insurance	88.7	248.0	307.7	345.6	815.6
Distribution sectors	3,524.9	10,303.2	10,790.4	11,069.1	11,804.1
Home ownership	1,031.2	5,589.5	5,762.4	6,246.1	6,474.9
Social and personal development services	4,241.9	5,289.0	5,901.4	8,590.3	9,115.6
General government	3,891.2	4,666.8	5,260.1	7,925.4	8,533.6
Personal services	350.7	622.2	641.3	664.9	582.0
Service sectors	9,515.0	16,167.5	17,565.2	23,426.7	24,706.1
Total by activity	27,160.7	41,814.0	43,661.8	48,091.4	48,777.9
Less calculated service	170.3	206.2	223.0	240.0	267.3
GDP	26,990.4	41,607.8	43,438.8	47,851.4	48,510.6

Overall Economy

3.4 Fixed Capital Formation

The term fixed capital means the material outcome arising from investment, mainly assets such as machinery, equipment, buildings, facilities, and vehicles that are of a fixed nature and are used in the production process. The stages of fixed capital formation are considered strategic components not only in terms of long-term economic variables but also in terms of short-term fluctuations and their effects on the country's overall economic activity. The CSO's historical data sources show that the volume of domestic gross fixed capital formation increased from 120.2 million Iraqi dinars in 1960 to 159.0 million dinars in 1969, a total increase of 32 percent and an average compounded growth rate of 3.2 percent per year as measured at current prices.

In contrast, it rose from 185 million dinars in 1970 to approximately 1,950 million dinars in 1979, a total increase of 953.4 percent and an average compounded growth rate of 29.9 percent per year. This increase was supported by the exceptional increase in investments flowing into the economy as a result of the increase in crude oil revenues. However, gross capital formation fell in the 1980s at an annual rate of -7.5 percent because of the lack of productive capabilities during the wars and increasingly scarce financial and technical. In the 1990s, there was a change in the magnitude of fixed capital formation, particularly after 1995. As measured in fixed prices, it increased from 6.2 billion dinars in 1990 to approximately 116 billion dinars in 1995 and 1,465 billion dinars in 2000.

After 2003, fixed capital formation experienced a tangible increase. As shown in Table 12, between 2004 and 2007 fixed capital formation increased from 2.9 trillion dinars in 2004 to 33.8 trillion dinars in 2007 as measured at current prices. This corresponded to an average growth rate of 128 percent per year during that period. In addition, fixed capital formation grew from 4.3 billion dinars in 2004 to 33 billion dinars in 2007 as measured at fixed prices. This corresponded to an average growth rate of 97 percent per year during the 2004-2007 period.

Year	Fixed capital formation
2004	2,857,807
2005	10,182,362
2006	16,282,945
2007	33,832,163

The invigoration in fixed capital formation during the years 2004-2007 was the result of the increase in government investments of all types, as well as an inflow of donations. Fixed capital formation also increased in the public sector from 2.5 trillion dinars in 2004 to 33.6 trillion dinars in 2007, i.e., a compounded growth rate of 136 percent (Table 13).

Year	Public sector	Private sector
2004	2,487,718	370,088.0
2005	9,743,477	438,885
2006	16,013,395	269,550
2007	33,573,936	258,226

The private sector had a very low magnitude of fixed capital formation. It also witnessed a decline down from the highest levels achieved in 2005. Specifically, fixed capital formation declined from 439 billion dinars to 258 billion dinars in 2007. At its highest level in 2005, the private sector's share of fixed capital formation was still no more than 4.5 percent. The increase in fixed capital formation during that period did not represent a real increase, i.e., the creation of new productive capabilities. Instead, it consisted primarily of compensating for the material destruction and technical losses that afflicted existing production capabilities. If one were to analyze the roles of the public and private sectors, individually by activity, with respect to fixed capital formation, the outcomes below would be noted.

1. The public sector's share of fixed capital formation in the area of commodity activities increased and ranged between 50 percent and 80 percent for the period of 2004-2007. In contrast, the private sector's share in commodity activities, as a percentage of the total contribution, declined to about 28 percent in 2007.
2. The private sector's share in service activities increased. Its lowest share in fixed capital formation in this area was 41 percent in 2007, and it increased to 82 percent in 2005. In contrast, the public sector's share in this activity, as a percentage of total contribution, was low, ranging from 16 percent in 2004 to 45 percent in 2007.
3. The public sector's share in the field of distribution activities was low. Specifically, it was 5.2 percent in 2007 as compared to the private sector's share of 32 percent.
4. Despite the private sector's high share in service and distribution activities, home ownership, and building and construction, its share of gross fixed capital formation remained low at no more than 5 percent. This indicates that the main sectors responsible for fixed capital formation are oil, mining, quarries, electricity, and water. This is in addition to the state's social development services: education, health, water, and sanitation. This explains the public sector's dominance over economic decision making, as it possesses the material production capacities. Accordingly, the private sector did not participate in economic decision making.

3.5 Consumer Spending

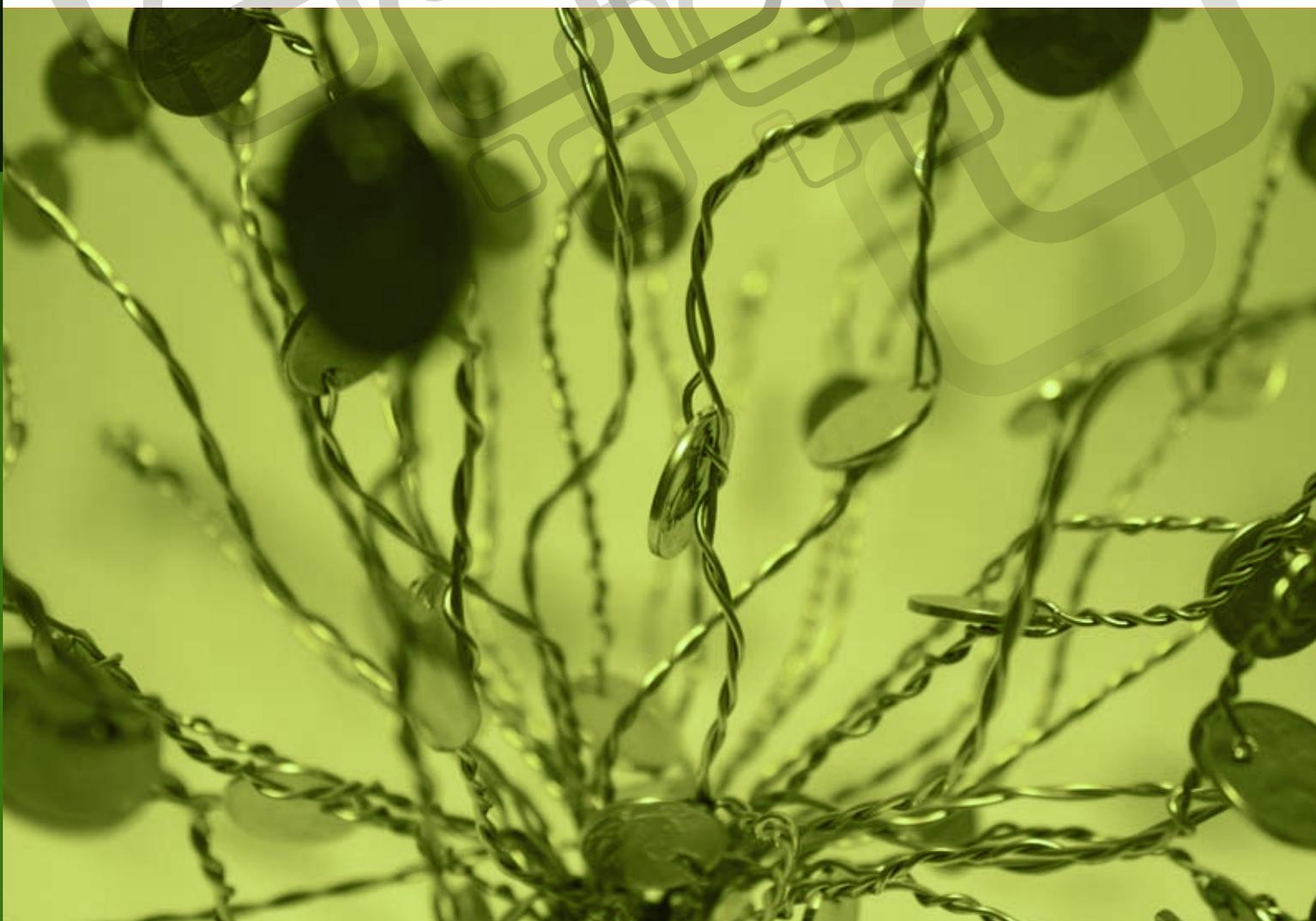
The CSO's historical data sources confirm that there has been a change in total government and private consumption spending over the past decades, increasing from 854 million dinars in 1970 to approximately 6 billion dinars in 1980, 31.4 billion dinars in 1990, and 12.7 trillion dinars in 2000. In the 1970s, private consumption spending accounted for 68 percent of total consumption; government consumption spending accounted for 32 percent of the total. However, these shares subsequently changed in favor of government consumption spending, which accounted for 40 percent of the total in 1980. The situation changed drastically with the imposition of economic sanctions; government consumption spending fell to about 20 percent in 1990 as compared to household (private) consumption spending, which accounted for 80 percent of total consumption spending. Government consumption spending began to increase again in the years following to account for 47 percent of total consumption spending as compared to private consumption spending share of 53 percent. The fluctuation in private consumption spending during the 1970-2000 period can be attributed to the change in per capita income as well as economic and political conditions. The same was true for the fluctuations afflicting government consumption spending, which was characterized by a noticeable increase in the late

1990s and early 2000s. This increase was not accompanied by a significant improvement in government services and relied almost entirely on crude oil revenues, which resulted in competition for investment spending.

Following 2003, the magnitude of total (government and private) consumption spending, as measured at current prices, totaled to about 33 billion dinars in 2004. It increased to about 69 billion dinars in 2007, which corresponded to an average growth rate of 27.4 percent per year. The magnitude of government consumption spending increased from 13.6 trillion dinars in 2004 to 20.9 trillion dinars in 2007. However, this increase was counterbalanced by the decline of government consumption spending as a share of total consumption spending from 41 percent of the total in 2004 to 30 percent in 2007. In contrast, private consumption spending increased from 19.5 trillion dinars in 2004 to 47.7 trillion dinars in 2007, and thus its share of total consumption spending increased from 59 percent in 2004 to 70 percent in 2007.

Chapter Four

The Financial and Monetary Sector



The Financial and Monetary Sector

4.1 The Financial Sector

4.1.1 The State's Financial Framework

The state's general budget in Iraq reflects the adopted philosophy with respect to financial policies and social options, the aim being to achieve economic stability, resist inflationary and recessionary pressures, and ensure the continuity of development and achievement of equitable distribution.

The financial policy in Iraq over the past three decades has faced many difficulties and complex options that have threatened economic stability. They included pressure on total demand resulting from increased governmental spending when the spending budget was doubled in the 1980s. Government spending followed a different course in the 1990s as a result of the economic sanctions. This exacerbated the imbalances in the structure of public spending, which grew even more pronounced during the second half of the 1990s. This was the result of continued implementation of government subsidy programs while dealing with the impediments to efficacy stemming from the international control of the Iraqi economy, including the Oil for Food program that began in 1996. Thus, structural imbalances increased and the economic and social disparity among population groups worsened. In turn, this gutted the financial policy of the economic and social content aimed at achieving development objectives and undermined public finance's effectiveness.

After 2003, the new Iraqi government was determined to rectify past errors and increase the effectiveness of public finance. It sought to have financial policy founded on the Iraqi Constitution, which states in Article 110, paragraph three, that designing financial policies falls under the purview of federal authorities. It also states in Article 80, paragraph four, that the public budget, final accounts, and development plans are to be proposed by the Ministers' Council (executive authority). The Iraqi Constitution also gave financial policy a spatial dimension. Article 114 states that comprehensive development policies and public planning for the country fall within the joint purview of the federal and regional governments with respect to financial policies. Specifically, the priorities defined by the region itself are put in place provided they are within the limits of the public spending allocated to the region. Therefore, regional governments focus their planning responsibilities on the strategic options available to them for purposes of development and construction. The current plan has embodied this fact.

Crude oil revenues represent 92 percent of the total federal government revenues. These revenues are exposed to international market fluctuations and are influenced by international prices and demand. This has pegged the stability of Iraq's financial and economic performance to the stability of those revenues. The fall in crude oil prices to less than one-third of their levels in July 2008, because of the global financial crisis, was a difficult challenge that required wise management of revenues on the government's part. Iraq adopted a probable hedging price for exported barrels of Iraqi oil in order to calculate budget revenues and prevent foreign supply shocks from influencing the financial policy's objectives of achieving stability, development, and equitable distribution.

4.1.2 Public Expenses

Public expenses began increasing in 1972. Nationalization of the oil industry, and the attendant increased revenues helped fund the increase in public expenses. Public expenses increased as public services expanded along with governmental interference with respect to compulsory pricing, subsidies, and import expansion. However, this trend was influenced by many internal and external factors during the 1980s and 1990s that altered the rates, trends, and structures of public spending and reduced its overall effectiveness. This, in turn, had economic and social outcomes evidenced by the increase in public spending rates and index prices during the 1990s (with the exception of 1996). Thus, inflation rates grew astronomically and caused the Iraqi Central Bank to become dependent on printing more money to fund government spending.

Public spending continued to increase in 2003 to cover the state's financial obligations, which were inherited from the previous era, and to correct the economic situation by commencing to rebuild, reconstruct, and re-launch development and achieve growth in all activities and sectors. This process necessitated reconstructing the Iraqi economy and resetting policies to ensure that the country's resources were channeled to sectors that achieve development. This led to an increase in total public expenses, as indicated in Table 14, from 33,661.6 billion dinars in 2004 to 59,861.973 billion dinars in 2008, which corresponds to an average growth rate of 15.4 percent per year. Operating expenses constituted 85 percent of overall expenses in 2004 and declined to 74 percent in 2008 in favor of investment expenses, which were no more than 15 percent of the total public spending in 2004, and increased to 26 percent in 2008.

These figures indicate that spending policy between 2004 and 2008 tended to sacrifice economic growth and focus on achieving temporary consumption welfare at the expense of permanent welfare. This is evidenced by the noticeable increase in operating expenses, including employee compensations, which accounted for 37.1 percent of total operating expenses in 2008, and social benefits, which include the public distribution system (the ration card, which constituted 8.9 percent of total operating expenses, and the social safety net, which constituted 1.4 percent of total operating expenses for the same year). Aid accounted for 5.4 percent of total expenses. Subsidies to state-owned agencies and companies accounted for 70 percent of total aid, whereas other expenses accounted for 14.3 percent of total operating expenses.

We do not anticipate that spending on these items will decline in the coming years because their beneficiaries are definitely not ready to waive the benefits they receive. Furthermore, this type of spending has a socio-institutional structure, whereby the state is like a social insurance company that guarantees free subscription to all beneficiaries. Therefore, the current plan seeks to change the trend in the spending policy during the years 2010-2014. It also seeks to do so in a manner that supports an increase in investment spending as a percentage of total public spending. Moreover, it seeks to optimize operating expenses so as to control the magnitude of consumption and ensure that it is consistent with the flexibility of overall supply for commodities and services. The aim of this

Item/ Year	Operational expenditures	Investment expenditures	Total expenditures	Operational To Total %	Investment to Total %
2004	28,547.3	5,114.3	33,661.6	0.85	0.15
2005	28,431.1	7,550.0	35,981.1	0.79	0.21
2006	41,691.2	9,272.0	50,963.2	0.82	0.18
2007	39,051.9	12,675.6	51,727.5	0.76	0.25
2008	44,190.7	15,671.2	59,862.0	0.74	0.26
Composit Growth Rate	11.5	32.3	15.4		

process is to limit the inflationary pressure generated by this type of spending and protect public revenues, particularly oil revenues, from dwindling. Thus, we set limits to free benefits and its associated burdens on the current generation that will also be incurred by future generations.

4.1.3 Public Revenues

In the 1970s, the Iraqi economy enjoyed a large financial surplus that exceeded its absorptive capacity. Public revenues, including oil revenues, grew at a rate of 33 percent. This increase can be attributed to the role of oil revenues whose share of total public revenues increased from 40 percent in 1972 to 80 percent in 1974 and 88 percent in 1979, a sum corresponding to 72 percent of the revenues allocated to funding current spending. This shows us the importance of oil revenues as a source for funding development in Iraq. However, this funding source suffered setbacks in the 1980s. Indeed, with the First Gulf War, the surplus came to an end and the growth rate in total revenues declined along with it by 17 percent. In contrast, in the 1990s, public revenues experienced clear growth, reaching 97 percent during the period 1990-1995. The high growth rate was the result of the borrowing policy adopted by the government from the monetary authority to support public spending. The increase was essentially a monetary increase resulting from application of a funding policy through inflation that was based on printing new currency being the only avenue for funding public expenses. This drove prices upwards and widened the gap between public revenues and expenses. For this reason, actual growth rate for revenues was negative, declining by 393 percent, whereas the nominal growth rate for revenues was positive and increased by 97.8 percent. This feature alone is considered a sufficient explanation for the 394 percent inflation rate experienced between 1990 and 1995 as well as the resulting lack of actual value with respect to these revenues and their failure to fulfill their true funding role.

Year	Oil revenues	Non-oil revenues	Total public revenues	Percentage of change
2004	21,262.9	466.2	21,729.1	-
2005	2,562.3	3,335.6	28,958.6	0.34
2006	42,106.3	3,286.0	45,392.3	0.57
2007	39,092.5	2,973.0	45,064.5	0.07
2008	42,442.2	8,332.9	57,750.1	0.21
Average	18.8	105.6	47.7	-

The situation was no different after 2003. An examination of the changes in public revenues, as set forth in Table 15, indicates that there was a continuous increase throughout the 2003-2008 period, from 21,729 billion dinars in 2004 to 57,750 billion dinars in 2008 with an average compound growth rate of 47.7 percent per year. Oil revenues constituted 83.6 percent of revenues in 2004, increasing to 92.9 percent in 2008. This was a natural consequence of the increase of oil revenues, in absolute numbers, from 21,262.9 billion dinars in 2004 to 42,442.2 billion dinars in 2008, with an average compound growth rate of 18.8 percent per year. In contrast, non-oil revenues increased from 466.2 billion dinars in 2004 to 8332.9 billion dinars in 2008, with an average compound growth rate of 105.6 percent per year during that period. However, their share of total public revenues declined from 16.4 percent in 2004 to 7.1 percent in 2008. This reduction is attributed to the decrease in economic activity in general. This affected the budget by reducing tax revenues, which at best were no greater than 0.94 percent of total revenues in 2004 and increased to 12.8 percent thereof in 2008. In addition, total customs fees declined as a result of the liberalization of foreign trade and the exemption of imports from said customs with the exception of a five percent reconstruction fee applicable to imports other than food and medicines. Furthermore, many state-owned public companies ceased their activities, and a large percentage of consumers stopped paying the fees associated with public services such as water, electricity, and telephones. These factors all contributed to reducing the share of oil revenues in overall public revenues during the period 2004-2008. As in past decades and eras, however, oil revenues maintained their first place ranking with respect to funding development in Iraq.

4.1.4 Overall Deficit or Surplus

Iraq's economic history indicates that there was a structural deficit in the central government's budget in 1972. This was the result of implementation of government procedures pertaining to nationalization of the oil industry which led to a decline in oil revenues. However, in the 1990s, there was a surplus in the central government's budget. This surplus was 27.7 percent greater than the magnitude of spending. Foreign variables also had a positive impact on the magnitude of the surplus in the 1970s. However, they had a negative impact on the surplus during the 1980s, leading to a budget deficit corresponding to 20.2 percent of the central government's total spending for the period 1981-1989. The severity of the deficit increased during the decade of economic sanctions and embargos increasing to 76.5 percent of the central government's overall spending. In light of political and economic developments that happened in Iraq after 2003, as well as the effects of unstable

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international economic conditions, the public budget deficit began to fluctuate between 2003 and 2008. This was the result of the severe influence of strong external factors that affected the deficit both positively and negatively. Table 16 shows that the deficit declined from 11,935.5 billion dinars in 2004 to 7,022.5 billion dinars in 2005 and 5,570.9 billion dinars in 2006. However, it began to increase again in 2007, reaching 9,662.968 billion dinars, a 73.5 percent increase over 2006 levels. In 2008, the budget deficit began to decline, falling to 9,086.892 billion dinars as compared to 2007, a decline of 5.9 percent.

Year	Deficit	Percentage of change	Average compound growth rate
2004	11,935.5	-	
2005	7,022.5	41.2-	
2006	5,570.9	20.7-	
2007	9,662.968	73.5	
2008	9,086.892	5.9-	6.58-

4.1.5 Public Debt

During the 1970s, the government relied on foreign loans to fund public spending on operating and investment expenses. Loans funded about 3.8 percent of operating expenses and 5.3 percent of investment expenses corresponding to about 1.1 percent of the GDP in the 1970s. The main purpose of these loans was to fund development projects set forth in investment plans. Some of the most notable projects were the Japanese loan to construct a fertilizer factory for 1.4 million dinars, the Polish loan to construct a sugar factory in Mosul for 1.4 million dinars, the loan from the International Bank for Reconstruction and Development for 1.1 million dinars, the Kuwaiti loan to build a hydroelectric station, and other foreign loans that combined to account for 15.3 percent of total public borrowing during the period

1970-1979. During the 1970s, borrowing from the monetary authority (treasury transfers) accounted for 82.3 percent of total loans. In contrast, during the first half of the 1980s, foreign loans were sought because of the low level of foreign currency reserves in Iraq. During this period, most foreign loans were Arab loans. Some loans were related to military spending; others were related to the implementation of some development projects, payment of consumption needs, payment of sums owed on previous loans so as to implement projects, and payment for imports. These loans corresponded to 9.9 percent of the GDP for the period 1980-1984, 19 percent of the total public borrowing during the period 1980-1989. The sums borrowed from the monetary authority (treasury transfers) accounted for 80.5 percent of total borrowing. This indicates the magnitude of the burden borne by the Iraqi economy with respect to paying loan installments and associated interest. These loans resulted in a decline in net foreign assets at the monetary authority as well as a short-term imbalance. However, the imbalance may be less of an issue over the longer term if the loans are used to implement development projects that lead to real growth in the

GDP. That is because it would reduce the gap between supply and demand in the long run. During the period of economic sanctions in the 1990s, Iraq did not resort to external loans because of decisions associated with the economic sanctions. Thus, treasury transfers, i.e., borrowing from the monetary authority, constituted 100 percent of total public borrowing during the period of 1990-1995.

Iraq took its first steps to address its debt issue during the first months of 2003, believing that external debts and international compensations were the biggest challenges keeping Iraq from joining the international economy. In 2003, Iraq's debts were estimated to be US\$127 billion according to the World Bank and the Bank for International Settlements (BIS). In contrast, initial data recorded in the supporting credit agreement signed by Iraq with the International Monetary Fund in 2006 indicate that Iraq's loans were US\$114 billion.

On November 21, 2004, the Iraqi government agreed with the Paris Club countries, which consist of 18 plus Korea and whose debts totaled US\$36.8 billion, to reduce Iraq's debts by 80 percent over three stages. During the first and second stages, 30 percent of the debts and the related interest would be reduced according to a set of special international agreements and arrangements. During the third phase, a 20 percent reduction would take place if Iraq were to abide by all of the fund's conditions. Iraq abided by all of the conditions and was released from its restrictions. The magnitude of its external debt was reduced to US\$50,201 billion in 2007 as compared to US\$108,657 billion in 2004, a 53 percent reduction. Moreover, the structure of the external debt also changed, whereby non-Paris Club countries achieved the highest percentage reduction at 83 percent, followed by commercial debts, which fell by 82 percent. On the other hand, the debts from Paris Club countries fell by 68 percent between 2004 and 2007, and internal debt fell by no more than 30.2 percent, decreasing from 6,379,061 million dinars in 2004 to 4,455,569 million dinars in 2008.

4.1.6 Challenges

The current plan is encountering a number of challenges imposed as a result of certain internal and external factors, described below.

1. Weakness of the financial administration, along with difficulty in handling public revenues and expenses and directing them in an appropriate manner, from an economic and social perspective, in accordance with the priorities of development objectives.
2. The fact that the classic method (line-item budget) of preparing Iraq's budgets adopted in 1927 is still in use today. This has caused the budgets to be devoid of a strategic planning vision when prioritizing objectives. They are limited to addressing immediate needs.
3. Severe spending pressures that the plan cannot overcome at this stage as they were caused by the previous and current economic, social, and political circumstances and have resulted in increased inflationary pressures. The financial policy sought to transfer its burdens to the monetary policy so they could be handled with the latter policy's strict tools.

4. The severity of the imbalance in the public spending structure in favor of operating expenses as opposed to investment expenses, which has caused an increase in the levels of effective total demand. It has also hindered development projects and programs aimed at reconstruction and increased the inflexibility of the production system. Thus, it has deepened the severity of the imbalance in the commodity component of national supply in favor of imported commodities.
 5. The inability to generate employment opportunities owing to reduced investment spending as a share of total public spending. The unemployment phenomenon facing those of employment age has become one of the most difficult challenges facing this plan.
 6. Government subsidies, in some of their forms, have exacerbated the severity of the imbalance in the structure of public spending. There is also an imbalance in the structure of the spending on operations. This has burdened the budget with unproductive expenses, per economic standards, and increased the waste in nonrenewable financial resources.
 7. Oil revenues are the main source of financing the objectives of the public budgets in Iraq. This has added a discretionary feature and uncertainty to the budget. It has also limited the budgets' ability to achieve their objectives.
 8. Non-oil revenues have been declining as a percentage of total public revenues. Ineffective tax policies have supported this trend and gutted it of its economic and social content. They have also limited its role in financing development, stimulating private sector activity, and limiting the disparity in income distribution.
 9. The external public debt and its rescheduling have imposed international obligations on the government. These obligations have an economic component that falls within the purview of implementing the provisions of agreements with the IMF and the International Pledge Document in the field of handling and reconstructing the economy of Iraq according to the principles of a market economy.
 10. The ineffectiveness of the policy for managing Iraq's internal public debt as evidenced by the decline in government borrowing to less than 1 percent of the 2008 public budget revenues.
 11. Iraq's dependence on a set of discretionary and hedged price to estimate its revenues. This exacerbates the budget deficit or surplus and forces the government, in case of deficit, to ask the Central Bank to lower interest rates, which is necessarily accompanied by negative economic and social effects.
- 4.1.7 Policies**
1. A comprehensive policy that ensures establishment of a stable environment in the economy as a whole, the main principles are based on the idea of real integration between the financial and monetary policies. Also, one that stimulates economic growth, continues economic stability by controlling inflation rates, controls unjustified public economic and social spending, and achieves equitable distribution.
 2. A financial policy that supports the domestic ability to handle emergency fluctuations in revenues and keeps them in line with spending. Adoption of an economic policy focused on balancing economic openness and economic stability while tempering this approach with an effective role for the state.
 3. Directing and guiding the policy on public spending, the priorities of the current plan, and the objectives of province councils while complying with the requirement to achieve continuous development and avoiding public spending that is not economically or socially justified so as to reduce the budget deficit.
 4. Using good financial governance with respect to Iraq's oil revenues through public budgets developed using scientific methodology, as well as economic and financial standards to direct and mobilize nonrenewable oil revenues toward productive spending fields. Moreover, establishing the bases and frameworks for financial responsibility, transparency, and adaptability to new events is emphasized.
 5. A policy to reform government subsidies so as to move from comprehensive subsidies to subsidies targeting the poor and vulnerable groups. The policy's goal would be to narrow the base of freeloaders in society (reforming the ration card).
 6. An effective tax policy that embarks on reform, and aims to reflect its financial, economic, and social role accurately and seeks to increase the efficacy of tax collection.
 7. Reactivating the role of specialized development banks and transforming their missions from comprehensive banks to specialized banks so they can stimulate and encourage the private sector by offering loans at favorable terms.
 8. Developing and supporting the Iraqi stock market as well as affirming support for all the other monetary establishments so they embody sound, technologically advanced and internationally ratified principles in the area of financial service provision.
 9. Adopting an efficient policy for managing the public debt, the internal and external debts, and disentangling the causal relationship that exists between inflationary pressures on the one hand and qualitative and quantitative public spending trends on the other, as that raises the cost associated with financing investments by creating a crowding-out situation.
 10. Announcing the commencement of privatization of public economic institutions. This would be thereby supporting the course of the spending policy toward reducing its quantitative levels, and changing its qualitative directions so as to ensure it is rational and productive. Also, empowering the private sector and its role in economic activity, as well as laying the foundations for proper transformation toward a market economy at the lowest cost possible.

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4.1.8 Objectives and Means of Achieving Them

The plan intends to adopt the following objectives to face the challenges:

First objective: Limiting the increase of the budget deficits

Means of achieving the objective

1. Financially reconstructing public revenues and expenses
2. Complying with the policy of financial discipline
3. Improving budget resources using nontraditional sources
4. Controlling increases in public spending in general and spending on operating activities in particular so as to achieve financial balance
5. Thoroughly reviewing hedged oil price to ensure a true estimate of Iraq's oil revenues.

Second objective: Scientific method for preparing the budget

Means of achieving the objective

1. Changing the type of budget from a line-item budget to a planning and programs budget
2. Identifying priorities during plan preparation in a scientific and realistic manner that ensures avoidance of the rushed and improvised approaches that were characteristic of previous budgets
3. Making the expenditure productivity and cost-benefit analyses the economic foundations for selecting projects to achieve the budgetary goals
4. Building the executive capabilities of ministries and governmental organizations so as to ensure implementation of a flexible budget. Moreover, seeking to improve the quality and timeliness of financial and economic data issued by governmental departments so as to support the development planning process
5. Applying market principles by gradually removing government from the leadership role in planning and implementation of economic projects. Also, promoting decentralized activities, particularly those of province councils with respect to managing their provinces.

Third objective: Simultaneously reducing the severity of imbalances in the qualitative and quantitative structure of public spending

Means of achieving the objective

1. Increasing investment spending as a percentage of total public spending while considering the economy's absorptive capacity and the executive capability of the organizations concerned
2. Minimizing the base of freeloaders along with expanding qualitative services to the population, including healthcare, water, sanitation, and education
3. Migration from a comprehensive targeting system to one that targets poor and vulnerable groups in accordance with the poverty alleviation policy in Iraq, as well the developmental capacity distribution system and social safety nets.

Fourth objective: Diversifying the sources of non-oil revenues

Means of achieving the objective

1. Increasing the efficacy of tax collection and reducing tax avoidance
2. Imposing indirect taxes like sales tax and the carbon tax
3. Reducing subsidies on services and commodities, particularly nonessential ones, gradually and activating efficacy in fee collection
4. Continuing to rehabilitate the conversion industry infrastructure so as to use available productive capabilities
5. Using the resources available for tourism in general and religious tourism in particular
6. Rehabilitating agricultural infrastructure, particularly irrigation networks; water-logging; and reclaiming agricultural lands
7. Supporting private sector activity and encouraging the sector to enter all investment fields, particularly production fields (commodity fields).

Fifth objective: Responsible administration of the external debt

Means of achieving the objective

1. Strengthening financial management, monitoring, and supervision
2. Developing mechanisms that ensure transparency
3. Entering into agreements with debtors such as Paris Club members and others to reduce debt
4. Seeking a waiver for Iraq from having to pay compensation for the damages of the Kuwait war.

Sixth objective: Guaranteeing the effectiveness of the internal public debt

Means of achieving the objective

1. Restructuring the internal debt in favor of borrowing from commercial financial organizations
2. Depending on treasury transfers to finance infrastructure projects (electricity, water, railroads) and not using them solely to address budget deficits, as that will help address the imbalance in the structure of public revenues in favor of non-oil revenues.

Seventh objective: Reforming government subsidies

Means of achieving the objective

1. Reducing the funds allocated to subsidize fuel so as to remove price distortions and wasteful consumption
2. Moving from all to some and from general to specific with respect to the scope of individuals covered by the ration cards distribution system
3. Restructuring subsidies in the budget and relying on a priority schedule provided it includes the private sector's production activity with support from the capital of specialized banks.

Eighth objective: Establishing a Generations Fund (Sovereign Wealth Funds)

Means of achieving the objective

1. Investing the government's financial surplus in long-term financial investments
2. Applying the economics rule of continuous economic development, thereby enabling Iraq to overcome what is known as "generational imbalances."

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Monetary sector

4.2.1 Monetary policy

The Iraqi Central Bank's monetary policy has not been effective over the past three decades. This policy was set under the auspices of Law No. 64 of 1976. However, it failed to manage foreign reserves, achieve economic stability, or defend a stable exchange rate for the Iraqi dinar. Managing the country's foreign currency sources, mainly oil revenues, was done using a mechanism that necessitated recording the revenues in the foreign reserve account at the Iraqi Central Bank provided its equivalent in Iraqi dinars would be recorded in the Ministry of Finance's account at the Central Bank. That mechanism happened automatically for both the foreign currency and its Iraqi dinar equivalent and continued to constitute a single unit with respect to public budget revenue elements.

Managing the components of the foreign currency reserve, and their roles in supporting monetary policy needs, namely, to achieve stability, support growth, and balance out inflationary pressures, was an issue generally seen as a formality and totally unrelated to monetary policy. That is because the financial policy allowed use of these reserves and considered them highly flexible methods of paying and fulfilling the obligations of the previous regime. This was done by exchanging the Iraqi dinar for foreign currency. For the last three decades of the last century, this view caused monetary policy to follow the courses and trends of financial policy using the public budget. In other words, monetary policy, with all of its tools, supplanted national debt tools with foreign currency when the Iraqi dinar was exhausted. The excessive possession of foreign currency and its replacement with the Ministry of Finance's treasury transfers rendered the Central Bank incapable of addressing domestic liquidity pressures, including demand pressures on foreign currency to finance external commerce. The situation became worse whenever treasury transfers replaced foreign currency by printing new money to fund public budget deficits. This greatly increased domestic liquidity in the absence of a true cover (reserve) of foreign currency for over two decades. Consequently, the Iraqi dinar's external value depreciated and exchange rates fell, causing severe shocks that created unprecedented inflation in prices and continual deterioration in living standards.

Therefore, stabilizing domestic liquidity rates, addressing inflation, and defending a stable exchange rate became impossible tasks for the Central Bank and its management tools, even though such capabilities were desired and expected. For this reason, under the auspices of Law No. 64 of 1976, monetary policy became a hostage to public budget policy and the processes of random spending. This rendered the Iraqi Central Bank's budget nothing more than a reflection of myriad unplanned, uncoordinated activities undertaken in the public budget. Furthermore, financial objectives dominated monetary objectives as the objectives of monetary stability were disregarded. Indeed, the value of the Iraqi dinar and the degree of its stability were linked to policies for financing the growing government deficit. In addition, continual direct and indirect borrowing from the Iraqi Central Bank became a major source of inflation in Iraq in the years that preceded issuance of new Iraqi Central Bank Law No. 56 of 2004.

After 2003, Iraq's monetary authority undertook an important set of procedures and steps in the monetary field. They were aimed at promoting economic and financial stability, developing them, and maintaining the stability of the domestic prices to create a competitive economic environment based on supply and demand and to establish independent objectives and trends and set policies accordingly. Among the important procedures adopted were to replace the domestic currency on 1/15/2004 at a value of 4 trillion of the old Iraqi dinars, license foreign banks, hold a daily auction for foreign currencies, and issue new legislation for banks and the Iraqi Central Bank, namely, Law No. 56 of 2004. This law aimed to reformulate the objectives, methods, and tasks of the Central Bank to reflect a market economy, a bank governed by a clear monetary, banking, and financial environment. The new law expanded the authorities of the Central Bank, granted it independence, and adopted the primary objective of working to maintain the stability of domestic prices. The law also aimed to change monetary policy tools in favor of quantitative (indirect) tools as used in advanced countries; using these new tools would expand the Bank's influence over the banking system, particularly with respect to open market processes, which had not been practiced by the Bank since its establishment and until 2003.

Moreover, under the new law, there were changes made to banks' compulsory (legal) reserves. The Central Bank required banks to maintain reserves in the form of cash holdings or deposits at the Central Bank. No bank was allowed overdrafts from these reserve accounts. Furthermore, the reserve amount was set at 25 percent, provided 20 percent of a bank's deposits were deposited at the Central Bank, and five percent was held in cash in safety deposit boxes at the bank.

Accepting deposits for nightly investment from banks with surplus balances was one of the new trends of the monetary policy. Moreover, the bank adopted an index interest rate (called the Bank Rate), and banks had complete freedom to set interest rates and deal with each other in the market pursuant to any agreed-upon rate. The Central Bank enhanced its role as a supporter of banks by providing credit facilities as the lender of last resort (LLR). These credit facilities took the form of three-month loans to banks facing crises. The loan could be renewed by the Central Bank, provided the banks participated in stabilizing the financial system. The interest rate applicable to these LLR loans was the index interest rate plus 3.5 percent, i.e., an interest rate of 10.5 percent.

The new law demonstrated the Central Bank's independence by giving it the right to refuse to give credit or direct or indirect loans to the government or public entity. The only limited exception was what the Central Bank might do to provide and support liquidity for the benefits of State-owned commercial banks under Central Bank supervision. Such support would be in the form of loans that would have the same provisions and conditions applicable to commercial banks of the private sector. Furthermore, the Central Bank had the right to purchase government bonds provided the purchase was done on the secondary market and in accordance with market mechanisms. In summary, the Central Bank's approach to dealing with the

government consisted of the fact that the ability to print money was independent of the ability to spend money in the public budget.

Thus, the monetary policy of the Iraqi Central Bank enabled the country to stabilize its monetary system and address inflationary activities and waves following great improvement in the exchange rate of the Iraqi dinar, which has risen by more than 40 percent in the last five years. Furthermore, it has built strong foreign currency reserves that are over 44 percent of the actual GDP. The interest rate has played a positive role in strengthening confidence in the Iraqi dinar. In turn, basic annual inflation rates, which exceeded 34 percent three years ago, have now decreased to seven percent per year. This was achieved after a period during which monetary policy had been undermined by widespread use of the dollar, speculation, the development of liquidity alternatives derived from material assets, including commodities and the dollar. These alternatives had functioned like money, as they were a store of value and a monetary liquidity tool beyond the scope of the existing system. These phenomena had led the system to its weakest point in the country's economic history.

The Iraqi dinar's attractiveness today, as a strong national currency, has become the best tool for promoting monetary savings and financial mediation. It is also the proper and suitable path for addressing inflation expectations, which have made dinar substitutes favorite methods of wealth accumulation. The latter have become a form of revenue similar to interest (though superior to the nominal interest offered by banks) and have generated powerful intangible returns caused by inflation. This inflationary trend has become an element of speculation in the economy because it indicates the avoidance of real investments by transacting with material or real assets. They are considered highly liquid assets and can achieve a quick profit, as they can have a high return driven by inflation expectations. Because they are not bank interest rates, they render the market careless about productive activity. That is why the index interest rates adopted by monetary policy were a countermeasure to inflation and the expectations associated therewith. This was done to allow true investment to regain its proper role beyond the scope of inflationary speculation.

Despite all of the complicated transitional political circumstances, monetary policy was able to promote the nation's monetary structure and achieve tangible levels of economic stability. It was also able to defend strong, stable exchange rates and an attractive national currency.

4.2.2 Money Supply

In its narrowest sense, money supply means the total supply of money in circulation plus current deposits. The money supply noticeably increased in the 1970s, going from 217.7 million dinars in 1970 to 1,575.8 million dinars in 1979. This absolute increase is attributed to the nationalization of oil and the increase in oil prices in 1973. The absolute increase in money supply was larger than the actual monetary increase in the GDP. However, in the late 1970s, there was excess demand for cash because the real output was high, with absolute levels that exceeded the absolute levels of the increase in the money supply. This led to a reduction in price levels and production costs, as well as an increase in the real value of the Iraqi dinar. This reflected the degree of responsiveness to the general price level, whether up or down, in the face of changes in the money supply and the GDP.

In the 1980s, money supply increased from 2,650.2 million dinars in 1980 to 11,868.2 million dinars in 1989. This increase is attributed to the increase of credit offered by the banking system to finance the increasing government deficit that resulted from the increase in the public military spending requirement. The percentage of currency in circulation averaged 85 percent of the total money supply during the period from 1980 to 1990, with the remaining 15 percent held in current deposits. This explains why the monetary stability coefficient increased during that period and was greater than one. Indeed, it reached 4.1 percent in 1989. This means that the average growth rate for the money supply was higher than the average growth rate for the GDP. In other words, there was a monetary surplus and an increase in prices.

In the 1980s, money supply grew at an average growth rate of 74 percent, whereas it was 23.7 percent during the decade of the 1990s because the only factor affecting money supply in the 1990s was printing money, i.e., governmental borrowing from the monetary authority. The money supply increased from 15,359.3 million dinars in 1990 to 1,728 billion dinars in 2000 and 3,013 billion dinars in 2002. This increase is explained by the widening gap in the money supply, totaling 775.5 percent during the period of economic sanctions as compared to 153.8 percent during the 1980s. This explains the continual increase in the monetary stability coefficient, which was greater than one throughout the 1990s and exceeded 4.5 percent. The percentage of money in circulation was 87.3 percent in 1990 and decreased to 85.3 percent in 2000, whereas the current deposits were no more than 12.7 percent in 1990 and increased to 14.7 percent in 2000.

Year	Money Supply	Net of currency trading	Current deposits	3 : 1%	2 : 1%
2003	5,774,000	4,630,000	1,144,000	80.2	19.8
2004	10,149,000	7,163,000	2,986,000	70.6	29.4
2005	11,399,000	9,113,000	2,286,000	79.9	20.1
2006	1,546,000	10,968,000	4,492,000	70.9	29.1
2007	217,721,000	14,232,000	7,489,000	65.5	34.5
2008	28,778,872	-	-	-	-

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Per the money supply indicator, after 2003, Iraq continued to apply its expansion policy. The money supply reached its highest level in terms of absolute value (Table 17) when it increased from 5.7 trillion dinars in 2003 to 28.7 trillion in 2008. This great increase is attributed to continual and effective increases in governmental spending within the operating and investment arenas. The growth in money supply can be tracked and compared to the change in the GDP, showing that the money supply grew at a rate of 38 percent during that period as compared to a GDP growth rate of 21.1 percent at current prices and 5.6 percent at fixed prices.

With respect to the components of money supply, the currency in circulation was quite high in 2003 at 80.2 percent. However, that percentage declined to 65.5 percent of total money supply in 2007 as a result of the positive effect of the interest rate that led to an increase in the percentage of current deposits from 19.8 percent in 2003 to 34.5 percent in 2007. Despite this increase, the growth of cash demonstrates that the applicable expansion policy caused inflation pressures. Through the tools of its monetary policy, the monetary authority sought to apply procedures to limit inflation.

4.2.3 Inflation

Inflation is not a new phenomenon in the Iraqi economy. It appeared in the 1970s after the nationalization of oil and the increase in oil prices, as well as the influence of the five-year development plans. However, inflation was no higher than five percent. This rate increased in the 1980s and worsened following imposition of the economic sanctions in the 1990s, which led to stoppage of Iraqi oil exports, a freeze on Iraq's foreign currency accounts, and reliance on the printing of new currency as the sole source for financing public spending. Inflation rates increased as indicated in Table 18, which shows the average annual compound growth rate during the period from 1980 to 2003.

Period	Growth average
1980–1985	10.6 percent
1986–1990	18.6 percent
1991–1995	250.0 percent
1995–2003	12.8 percent
1980–2003	55.9 percent

Table 19 depicts the disparity in the inflation rate before 2003. It confirms that rates increased as a result of the monetary policy applicable at that time, particularly the policy of inexpensive cash and funding the state's budget deficit by printing cash. The rate reached 500 percent in the 1990s despite the strict monetary procedures and policies of the Central Bank, as well as the policy of fixing the dinar's exchange rate against the dollar. The continuation of this policy later strengthened the Iraqi dinar against the dollar and kept it between 1,454 and 1,205 during the period 2003–2008. The magnitude of financial support provided by the state for most ration card commodities also led to an increase in inflation rates.

Year	Inflation rate
2003	32.6 percent
2004	26.9 percent
2005	36.9 percent
2006	53.2 percent
2007	30.8 percent
Average Growth Rate	36.0 percent

The standard price was 32.6 percent in 2003 and increased to 53.2 percent in 2006, but it decreased to 30.8 percent in 2007. This indicates the success of the monetary policy after 2003 in reducing the severity of inflation. It gives a good indicator of the degree of efficiency of the procedures applied by the

monetary authorities toward reducing inflation rates, which is considered the main objective of the Iraqi Central Bank. There are costs and burdens on the budget of the Central Bank associated with achieving this objective. An annual reduction of inflation by 20 percent added purchasing power estimated at 21 trillion dinars to the economy. The cost of the monetary operations undertaken by the Central Bank is 2 trillion dinars; each dinar of cost yields 10 dinars of benefit because of the monetary policy multiplier. This depends on the proper selection of the nominal index (index exchange rate) or index interest rate. Monetary policy has worked to achieve the objective of stability and address inflation by depending on the signal from the nominal exchange rate, which it considers the price of money, and by depending on the signal from the exchange rate, which hit considers the external value of money.

4.2.4 Interest Rate

Since its establishment, the Iraqi Central Bank has relied on the policy of administratively setting the bank interest rate (paid and received). During previous stages, these prices did not change to suit inflation trends. So, they tended to be negative real interest rates during periods when inflation was present in the Iraqi economy over the past three decades. This is evidenced by the increase in the relative magnitude of current deposits as compared to fixed deposits. Indeed, the decline in interest rates as compared to inflation rates made holding cash unprofitable. This had a negative effect on the magnitude of saving deposits and oriented capital toward speculation. Therefore, before 2003, the interest rate had a limited effect.

After 2003, the monetary authorities sought to activate the role of interest rates to encounter inflation and the expectations resulting from it. On 3/1/2003, the interest rate was liberalized, and monetary policy adopted the interest rate as a reference and an operating objective for adopting a policy to counteract the expansion in government current and investment spending, as well as to contain and restrict the inflation rates associated with this spending. To achieve this objective, the Central Bank set the interest rate at six percent in 2004. It later increased to 16 percent in 2006. That was done to make the interest rate in the positive range for the borrower, to stimulate saving at banks, to participate in reducing the burdens of public spending, to withdraw the cash surplus, and to control domestic liquidity.

Year	Interest rate
2004	6.0 percent
2005	7.0 percent
2006	16.0 percent
2007	20.0 percent
2009	6.0 percent

As this trend continued, the interest rate grew to 20 percent in 2007. During 2008, the monetary authority applied continual and accelerated reductions to adapt to decreasing inflation levels. The interest rate was subsequently reduced to 16 percent, 14 percent, and seven percent. The reduction procedures were the result of the relative success in controlling inflation and stimulating bank credit, particularly in the private sector, where investment covered the decline in government spending. That decline in the state's funding capabilities resulted from the international economic crises.

4.2.5 Exchange Rate

Before 2003, the exchange rate was subject to the fixed rate of US\$3.3 per Iraqi dinar. There were 13 exchange rates bearing different names in the parallel exchange market. As a result of the rapid increase in the price of the dollar relative to the dinar, driven by political events, instability, and the approaching change in the pre-2003 regime, the price of the dollar jumped to 1,957 dinars. The reasons included loss of confidence in the Iraqi currency and loss of its role as a store of value. Psychological factors and increased inflation expectation also contributed to the increase.

In early 2003, the exchange rate deteriorated when military operations commenced against Iraq. The price of the dollar rose to 2,541 Iraqi dinars and then 3,000 dinars. However, Central Bank Law No. 56 in 2004 was issued for the purpose of achieving balance between demand for the dollar and its supply and to find a balanced dollar/dinar exchange rate. In addition, the law sought to stabilize the exchange rate so it could reflect price stability and make the domestic currency more attractive. The law also sought to limit the phenomenon of transacting in dollars by providing proper exchange rate signals. All of these factors contributed to an increase in the value of the Iraqi dinar, which then reached 1,218 dinars per dollar, an increase of more than 40 percent in the dinar's exchange rate as compared to 2003.

Table 21 shows the great improvement in the Iraqi dinar's exchange rate resulting from an improvement in oil exports, growth of the trade surplus, modification of the monetary policy to support the external value of the Iraqi dinar, use of interest rate tools to control domestic liquidity, and use of public auctions for foreign currency to achieve balance in the foreign currency market.

Year	Exchange rate
2003	1,936
2004	1,453
2005	1,472
2006	1,475
2007	1,267
2008	1,205

The positive developments in the exchange rate index that were adopted by the monetary policy represent the most important and pivotal change leading to a reduction in total costs within the real economy, promotion of growth, and the increase of total revenues from production activity.

The future strategy of the monetary sector is to continue improving the dinar's exchange rate in a gradual, studied manner, using the indirect tools provided by monetary policy to influence

the factors affecting the exchange rate. These factors include reducing domestic inflation rates, supporting the advantages of foreign payments and reserves, organizing and regulating the foreign currency market, and working to develop other monetary tools, including creating a stock market and attracting foreign investments.

4.2.6 Banking Sector

Despite the prestige and long tradition of commercial banks in Iraq, after 2003, monetary authorities, represented by the Iraqi Central Bank, sought to issue instructions aimed at creating a flexible banking system that can respond to economic, financial, banking, domestic, and international changes by making the sector more efficient and profitable and providing it with financial and monetary certainty. The task of developing the banking system in both the public and private sectors and developing the financial markets became an urgent necessity that was no less important than the objectives set by the monetary authorities.

Banking activity in the private sector showed a noticeable expansion after 2003 as a result of the new economic philosophy that aimed to support the private sector, enhance economic efficiencies, and increase the role of market forces in managing the economy. Table 22 shows that the number of private sector banks increased from 19 to 28, including 6 Islamic banks, during the period from 2003 to 2007. That increase in number of private banks and quantity of their capital was driven by an improvement in oil revenues and the expected growth in demand banking facilities for credit or deposit purposes. The capital of private banks increased to .994 trillion dinars during that period. Moreover, current deposits at private banks increased from 3.4 trillion to 11 trillion dinars in 2007. However, the percentage of current deposits was no greater than 7.3 percent in 2007 as compared to 6.2 percent in 2004.

The Financial and Monetary Sector

Year	Number	Total capital	Bank deposits	Percentage of current deposits percent
2004	19	-	3.4	62
2005	20	-	3.6	53
2006	22	0.663	4.7	57
2007	28	0.994	11	73

Year	Number	Total capital	Bank deposits	Percentage of current deposits percent
2004	7	0.15	5.2	0.99
2005	7	0.165	7.1	0.96
2006	7	0.18	12.2	0.97
2007	7	0.215	16.7	0.99

The number of public commercial banks was seven, which remained steady during the period from 2004 to 2007. Table 23 shows that the banks' capital grew to 215.5 billion dinars in 2007 from 150 billion dinars in 2004. Furthermore, deposits at public sector banks were 5.2 trillion dinars in 2004 and rose to 16.7 trillion dinars in 2007. The percentage of current deposits was between 96 percent and 99 percent between 2004 and 2007. Bank density was no more than 0.2 percent, i.e., one bank per 45,000 people. That was accompanied by an increase in the number of private banks to 28 private banks in 2007, 3 public commercial banks, and 4 specialized banks. Public sector banks had 348 branches, whereas private banks had 201 branches.

Total deposits (Table 24) achieved tremendous results in the public, commercial, and private banks during the period 2004-2007, increasing from 8.6 trillion dinars to 26.2 trillion dinars, an average growth rate of 222 percent. Further, their share of GDP increased from 16 percent in 2004 to 24 percent in 2007.

Year	Total deposits 1	GDP 2	2:1 percent
2004	8.6	53.2	16
2005	10.7	73.5	14.5
2006	16.9	95.5	17.6
2007	26.2	107.8	24

As for credit activity, the magnitude of government credit provided by commercial banks increased from 824.6 billion dinars in 2004 to 3,459 billion dinars in 2007 (Table 25). This increase was accompanied by an increase in the percentage of credit provided by public sector banks from 24.7 percent in 2004 to 31 percent in 2007. In contrast, the percentage of credit provided by private banks was 75.3 percent in 2004,

decreasing to 69 percent in 2007. These percentages show us the low level of participation by public sector banks in credit activity in favor of private sector banks. This is because cash accumulated at public sector banks as a result of significant reservations about providing credit. The percentage of liquidity was 84.5 percent in 2003 in commercial banks (public and private), declining to 14 percent in 2007 because the Central Bank adopted measures that helped employ bank liquidity through the currency and stock auctions.

Year	Total credit 1	Credit provided by public sector banks 2	2:1 percent 3	Credit provided by private sector 4	4:1 percent 5
2004	824.6	204.0	24.7	620.2	75.3
2005	1,717.4	767.2	45.0	950.2	55.0
2006	2,664.8	783.8	29.0	1,881.0	71.0
2007	3,459.0	1,072.0	31.0	2,387.0	69.0

The private sector took advantage of most credit provided by public and private sector banks. However, that percentage fluctuated from 56.5 percent in 2004, to 39 percent in 2005, and then 53 percent in 2007.

The approach to bank oversight by the Central Bank changed from a controlling governmental oversight based on control of fixed rules to a precautionary (automatic) bank oversight pursuant to Banking Law No. 94 of 2004 and in accordance with organizational and implementation regulations. This allowed the banking system to work flexibly and efficiently to strengthen and rationalize banking performance in accordance with international banking oversight standards.

4.2.7 Challenges

1. To maintain the success of monetary policy in continuing to reduce severe inflation rates from 30.8 percent in 2007 to the single digits in a manner that supports and guarantees continued economic stability and achieves prosperity during plan years.
2. To continue reduction of dollar usage in the Iraqi economy by ensuring the stability of the Iraqi dinar's exchange rate, thereby promoting transactions using the Iraqi dinar, as well as its use as a store of value, through confidence by the public and an increase in demand for the domestic currency.
3. To ensure the independence of the Iraqi Central Bank; specifically, to ensure that the ability to print money is independent from the ability to spend it, with the latter function falling within the purview of the executive authority.
4. To enhance the effectiveness of monetary policy in the areas of achieving economic stability and stimulating economic growth during plan years.
5. An increase in the money supply. This is an indication of

the current expansionary policy and can put pressure on inflation rates. Currency in circulation accounted for 65.5 percent of the total money supply as compared to current deposits, which accounted for only 34.5 percent of the total money supply in 2007.

6. The effects of the continuation of the strict monetary policy that was adopted after 2004 in order to limit expansion in spending and the increase of inflation levels, and countering them with increasing the interest rate from six percent in 2004 to 20 percent in 2007 to stimulate saving in banks.
7. To improve the Iraqi dinar exchange rate in a gradual and studied way using monetary policy tools to affect factors influencing exchange rates such as inflation, the balance between foreign currency payment and reserves, and organization and regulation of the foreign currency market.
8. The decline in bank density, which is no more than 0.2 percent, i.e., one bank per 45,000 people.
9. The increase in the rate of current deposits in private banks, which accounts for 78.7 percent of total deposits as compared to the public sector banks' share of 21.3 percent.
10. Decrease in the percentage of credit provided by public sector banks, which accounted for only 31 percent of credit in 2007 as compared to private banks' share of 69 percent.

4.2.8 Policies

1. To establish an effective monetary policy that continues to suppress the inflation rates arising from the expansionary spending policy during plan years. In addition, activation of monetary tools that stimulate investment and growth using interest rate signals.
2. To resume liberalization of interest rates and remove the monetary restrictions imposed by the Central Bank's credit plan that allocated resources among different economic sectors.
3. To allow foreign banks to work in Iraq in accordance with the Investment Law, and to encourage Iraqi banks to develop mechanisms that improve their practices and create an atmosphere of competition.
4. To establish an anti-money-laundering department at the Central Bank so it can act as a safety valve for the banking sector and protect commercial banks. The department would also participate in normalizing work and enhancing the effectiveness of the banking system in Iraq.
5. To overcome the increase in liquidity rates, and reduce uncertainty. Further, to develop payment systems by developing a real-time gross settlement (RTGS) system, i.e., continuous settlements with no stoppage.
6. To reduce the interest rate so as to stimulate bank credit and encourage increased investments by the private sector in production sectors in accordance with the financial stability situation and the reduction in inflation rates.

4.2.9 Objectives

First objective: Low and stable inflation rates

Means of achieving the objective:

1. Implementing open market processes
2. Stimulating saving through credit activity
3. Reducing the growth of the money supply in favor of current deposits
4. Influencing the flexibility of the production system using financial and monetary policy tools
5. Stabilizing the Iraqi dinar exchange rate.

Second objective: Interest rate signals as a stimulus to investment

Means of achieving the objective:

1. Completing liberalization of the interest rate and reducing rates while achieving economic stability, decreasing inflation, and stimulating investments
2. Establishing bases of competition among banks
3. Confirming the flexibility of credit limits by adopting indirect methods and by adopting preventive oversight methods.

Third objective: Exchange rate stability

Means of achieving the objective:

1. Floating the exchange rate in a manner managed through public bids.
2. Guaranteeing a good coverage rate by reserve monies of no less than a 70 percent benchmark.

Fourth objective: Activating the role of specialized banks

Means of achieving the objective:

1. Supporting bank capital
2. Encouraging interbank lending
3. Ensuring low interest rates over the short term secured through participation of the public budget and the policy of economic development.

Fifth objective: Increasing the rate of bank density in the economy

Means of achieving the objective:

1. Increasing the number of private and public sector banks through a targeted plan
2. Encouraging the opening of private bank branches that are distributed geographically based on population size
3. Encouraging the opening of foreign bank branches.

Sixth objective: Achieving an optimal level of foreign reserves at the Central Bank

Means of achieving the objective:

1. Foreign reserve should not be less than a pre-set percentage based on the value of real non-oil GDP
2. Depositing the surplus reserves of foreign currency in a long-term investment account (sovereign wealth funds).

Chapter Five

Agriculture and Water Resources



Agriculture and Water Resources

5.1 Previous Agricultural Policies

Agricultural activity is distinguished by the high sensitivity of natural circumstances, the seasonal and biological nature of the activity, the privacy of agricultural management, the importance of this activity in satisfying basic human needs, and national food security. All of these influence the policies adopted by the state.

In Iraq, all the agricultural strategies and policies undertaken since the middle of the last century aimed at achieving high percentages of food security, a goal that was never reached. However, better food security was achieved during the 1950s and 1960s compared to later decades due to war and economic sanctions. The post-2003 war period has witnessed a negative shift away from this aim as a result of deterioration in the quality of in-use fields and livestock pastures.

5.1.1 Plant and Animal Production Policies

Production Policy

Agricultural policy in past decades aimed at using the available resources to achieve a suitable supply of crops. But production levels failed to meet both society's growing needs for food and livestock and the national industries' need for raw materials. Despite vast planted areas, productivity remained low. The annual production of grains has always been less than required. Since the 1980s, this deficiency has been made up by importing. The deficiency in fodder resulting from limited planted areas and the stoppage of imports in the 1990s led to a decline in the number of farm animals to almost half the number in 1989. Furthermore, almost 75 percent of livestock projects were affected negatively because of the halt of importing concentrated fodder along with the increase in fodder types that are produced domestically to a very low standard.

Composition of Crops

Agricultural activity in Iraq during the winter season is focused on wheat and barley, while in the summer the focus is on vegetables and grains. The annual average planted areas with winter crops in the period 1970-1990 reached 77 percent of the total planted areas in the country; in that same period, the annual average of planted areas with summer crops was 23 percent of the total planted areas. The summer crop planted areas are limited because rainfall is low and irrigation is poor.

Pertaining particularly to grain crops in Iraq, it was noticed that the relative importance of crop composition increased with time, especially during nineties due to the blockade circumstances. They reached 86.3 percent and 86.4 percent in the 1970s and 1980s, increasing to 89.9 percent in the first half of the 1990s, then decreasing to 85.2 percent in the second half of the decade.

Vegetable crops (including onion and potato) are the second most widely produced crops after grains. Areas planted with vegetables constituted 8.3 percent, 8.9 percent, and 9.7 percent of all cultivated land in the 1970s, 1980s, and 1990s, respectively. The relative importance of the oil-producing crops decreased from 2.3 percent in the 1970s to two percent in the 1980s, and then increased to 2.7 percent in the 1990s. Legume and fodder crops decreased in relative importance in

the composition of crops in the 1970s, 1980s, and 1990s by 3.1 percent, 2.7 percent, and 2.4 percent, respectively.

Economic Policies

- Pricing and Marketing Policy

Agricultural pricing policy is an integral part of the overall economic policy in the country. The historical amount of support provided to agricultural production entries proved to be a large hurdle in front of the needed development. A large percentage of fertilizers, pesticides, and seeds distributed to farmers were smuggled abroad. Pricing policy passed through different stages. In the 1970s and 1980s, marketing was compulsory according to prices imposed by the state. Toward the end of the 1980s, during the blockade, the state abandoned this method, immediately affecting strategic crops such as wheat, barley, rice, yellow corn, cotton and sunflower. The state was ready to receive the crops at a certain price, and farmers could market them to the state or the traders. After the events of 2003, the market took on the role of setting the prices of agricultural products and production supplies, and specifying the size and directions of agricultural production. In 2008, a profitable price was specified for barley, wheat, and rice, and farmers were given their freedom to market their products.

- Supply Policy

The agricultural bank and other commercial banks were financing farmers with formal interest rates (18-21 percent) with short-term productive loans and loans for buying production requirements and implementing agricultural projects. Despite this, the agricultural sector was still not developed as intended because of the increase in interest rates on the one hand and the lack of mechanisms to continue lending on the other. After 2003, a 25 billion dinar fund to lend to farmers was established to provide subsidized financing according to suitable guarantees. Finally, the agricultural initiative was made by the Prime Minister in 2008 when six

specialized lending funds were established to give loans without interest to farmers in the fields of gardening, palm trees, using machines and technology, developing livestock, and big agricultural development projects. A sum of US\$240 million was allocated for these funds in 2008, and a similar sum was allocated in 2009. This led to a positive effect in the agricultural field.

- Research and Guidance Policy

The research and guidance field has not received the required attention except at the end of the 1990s and the beginning of the new millennium when a group of national developmental programs were adopted. These programs used an integrated bundle of activities and efficiencies that were adopted by the peasants and farmers. Their aims were to increase productivity by spreading technology and modern production methods. These projects were:

- a. Planting new high-productivity types of rice and developing a system to eliminate the grass that grows after the harvest and influences the growth of crops.

- b. Including fodder beans in the crop cycle of wheat and rice to improve the fertility of the soil.
- c. Developing grain planting in dry areas by using types of grain that have good resistance levels against drought, using best methods in agricultural processes, and planning special crop cycles.
- d. Developing the planting of cotton.
- e. Developing the planting and production of tomatoes.
- f. Developing the yellow and white corn harvest: spreading the planting of spring and autumn crops and raising the standards of crops. Projects should aim to increase white corn production because it can endure saltiness and be included in the crop cycle with wheat.
- g. Rehabilitating domestic animal projects that aim to use 70-75 percent of the components of the domestic animals' fodder from the domestic production of meat and eggs, thus providing employment opportunities in the rural sector.

5.1.2 Water Resource and Land Reclamation Policies

Water Policy

Agriculture in Iraq outside the range of 400 mm of rain per year depends on water from rivers. Even in areas that receive guaranteed, or almost guaranteed, rain, there is a strong need for supplementary irrigation to increase the productivity of the output per donom [Donom is a measure of land that equals about 1,000 square meters] which is currently very low. Since most of the water sources in Iraq are from outside its regional boundaries, and other countries control these sources, Iraq has had to follow water policies that protect it from the dangers of continuous floods in addition to securing a water reserve that is suitable for different usages, especially agricultural usages. The government worked on establishing important points in the infrastructure to control the water, including the barrages system in Kut, Samura, Al-Tharthar, the dams of Al Ramadi and Al-Habania, the dam of Al-Hindia, the dam of Debes, the dam of Diyala, the dam of Al-Faloja, the dams of the middle Euphrates on the banks of Al-Shamia and Al-Kofa, and the dam of Al-Amarah. In the latter stages, at the end of the 1950s, the government started to build dams and reservoirs to prevent floods, store water and reorganize the way it was released, plan for other uses of it, especially for the electric power that was considered a secondary product of the dams. Therefore, the dams of Dokan and Darbankhan were built in the 1950s, and Hudaitha and Mosul dams were added in the 1980s. The system of Al-Tharthar, Humreen Dam, and finally the Great Dam were developed in the 1990s with a total storing capacity of approximately 33 billion square meters. Work on building Bokhmah, Badoush, and Mak'hool, which were to add important storage capacity to Iraq during periods of scarcity of water at that time, stopped for different reasons.

Land Reclamation Policy

Large areas of agricultural land suffer from salinity, being filled with underground water, desertification, and drought. Agricultural plans and policies in past decades aimed at

expanding irrigation networks and water logging to improve soil and its productive capability. This was followed by the reclamation of lands; the area of fully reclaimed land was 2.5 million acres, and semi-reclaimed land was approximately 3.7 million acres. These lands are distributed throughout different areas and provinces of Iraq, as shown in the following figure, and there are still approximately 10 million acres that need reclamation.

The situation of reclaimed lands deteriorated and they were lost because the full reclamation programs did not continue and specialized maintenance works were neglected. The same thing is applicable to the non-serious investment of underground water, especially in areas that contain a renewable reserve of water and fertile water. Watering the land with surface irrigation is used for approximately 95 percent of irrigated areas and is accomplished using correct scientific methods. Less than five percent of crop areas are watered with sprinkling systems. Large parts of these areas are irrigated with underground water and more than half suffer from operative problems, lack of spare parts, and fuel and other problems.

The year 2008 witnessed the opening of the main desalination pumping station, the largest station of its type in the Middle East. It receives salty water from the main station and then drains into the Persian Gulf.

Also in this year, work on integrated reclamation works continued, including covered water logging, and the works of amending and finalizing projects in central and southern Iraq.

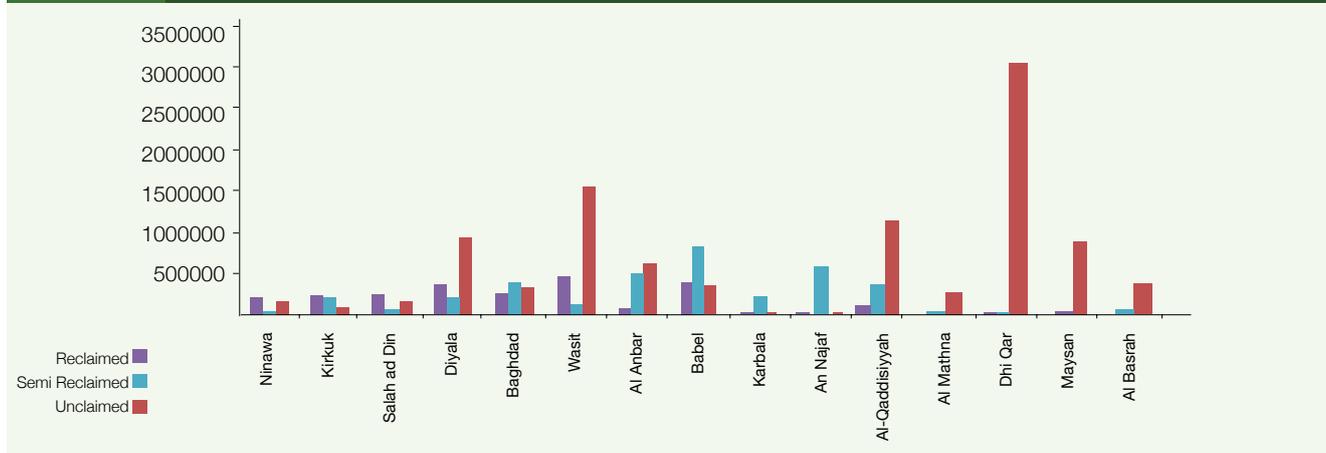
The low cost of producing irrigation water and cost of digging canals has led to reducing its role as an important economic factor in agricultural production, and caused an excessive usage of water and irrational consumption. The cost of making the water available is still done on the basis of the agricultural area regardless of the consumed quantity of water, the frequency of irrigation, or the crop types.

The space of the targeted areas (the area that was studied is estimated to be 12,400,000 acres out of 13,240,000 acres that have shares of water in Iraq) that are served with irrigation and water logging, which should be implemented, has made adding new lands slow (the percentage of the finished areas in all the provinces was 35 percent by the end of 2008) when compared with the arable land that is deteriorating. This was estimated by the Ministry of Agriculture to be approximately 100,000 acres annually because of the increase in salinity of the underground waters and desertification that resulted from mismanagement, using an improper traditional style of irrigation, and planting without relying on technology and modern methods. Weakness in agricultural guidance also played a role; there was little connection between scientific research and guidance and poor coordination between academic research centers and the ministries of related fields. Efforts were further hampered by the cancellation important research organization efforts, such as the Council of Scientific Research and the Aba Center for Agriculture Research.

Agriculture and Water Resources

Figure 4

Represents Land According to Reclamation Type on the provincial level



5.1.3 Orientations of the Agricultural Sector in the International Compact Document

The International Convention Document, like the consecutive five-year plans in Iraq, agricultural activity an important part of the development plan in Iraq because of the role that this sector can play in securing the country's food security, diversifying the base of Iraq's economy, developing the countryside, creating more jobs, reducing unemployment and poverty, protecting and improving the environment, and preserving available resources and making the most efficient use of them. The International Convention Document specified the general framework for developing the agricultural sector as described below.

1. Developing a fixed, competitive, and continuous agricultural sector in rural areas to improve food security, provide income, create employment opportunities, diversify economic growth, and protect the natural environment in those areas
2. Creating a strong environment for a profitable and competitive agricultural sector that is governed by a market economy, led by the private sector, and supported by suitable government policies and organizational support
3. Developing a comprehensive agricultural policy that merges with the food policy, commercial policy, agricultural policy, water policy, policy of managing environmental and natural resources, and policy of developing the financial market
4. Developing a financing plan from the public and private sectors to support the policies of the agricultural sector, organizational reformations, and infrastructure upgrading
5. Developing land management policy, water policy, and a comprehensive method to solve the water issues of the boards.

Advancement in these fields will:

- Move resources
- Attract foreign investment
- Utilize resources in an organized and efficient manner.

Because of the limited investments that were given to the sector between 2004 and 2008, (between 2.5 percent and 4.5 percent of the total investment), none of the above-mentioned aims were achieved. In addition, the participation of this sector in the GDP and formation of fixed capital was minimal (approximately 10 percent for the GDP and less than one percent for fixed capital formation). In previous periods, they were between 20 percent and 25 percent.

Despite the attention that the national development strategy between 2007 and 2010 and the International Convention Document have given to the agricultural sector, the investments allocated to this sector between 2007 and 2010 were limited, and never Exceeded 25 percent, at best, for water resources and nine percent for the agricultural and animal production sector. Limited resources combined with low implementation rate have hampered tangible development in the essential indicators of this sector.

5.2 Agricultural Production

5.2.1 Plant Production

Arable Land

The total of arable land, irrigated land, and dry land in Iraq is 44.46 million acres. The total area of that land available for irrigation is 22.86 million acres. Of course, covering those lands with irrigation networks depends on the availability of water, especially in light of the current unjust usage by the countries that share mutual rivers with Iraq.

The total irrigated area is 13,240 million acres; it forms 58 percent of the lands that can be irrigated. This is a low percentage, as the Food and Agriculture Organization (FAO) estimates the percentage planted irrigated land in the Middle East and North Africa at an average of 62 percent. A large part of the land is in poor condition because of salinity and the fact that it is filled with ground water, especially in the central and southern areas because of bad operational works, poor maintenance, and lack of integrated water logging.

Planting crop fields occupy a large area of agricultural land,

estimated at approximately 10 million acres, 41 percent of which is in the province Ninawa. The planted area with vegetables and potatoes is 2.5 million acres. Statistics show that there is a reduction in palm tree areas from 32 million trees in 1960 to 16.2 million trees in 1989 and 10 million trees in 2007. The total production was approximately 447,000 tons. This ranked Iraq lower regionally and internationally in the number of the palm trees after being ranked first internationally a few decades ago.

Production and Harvests

Natural factors are still the main influences on determining the production levels and harvests of the main crops in Iraq. That is because the production indicators and field harvest fluctuate strongly according to the years. The production of wheat in 2002 was approximately 2.6 million tons and the productivity of the donom was approximately 392 kg. The production in 1997 was less than 1 million tons and the productivity were 172 kg/donom.

Regarding barley, it reached a peak in 1990 of 1.8 million tons and 232 kg/donom. As for rice, in 2007, it registered the highest production and productivity at approximately 400,000 tons and 790 kg/donom. Production and productivity of field harvests and other harvests varied throughout the years. There are obvious differences in productivity among the provinces with respect to climate, soil, and water resources in addition to manpower capabilities. Regarding harvesting wheat, the provinces of Al-Najaf and Al-Qadisiyyah ranked first in producing wheat in 2007, with 645,666 kg/donom because they have considerable availability of water from on irrigation projects. The lowest productivity was in the province of Ninawa, approximately 169 kg/donom because lack of rain and drought (90 percent of the irrigated area in the province depends on rain). Regarding the barley harvest, the provinces of Al-Qadisiyyah and Wasit ranked first, with 450 kg/donom and 325 kg/donom, respectively, because they depend on rivers to water their crops. The provinces of Ninawa and Saladin ranked very low, with a productivity of 100 kg/donom, because rice requires huge quantities of water. The provinces of Al-Najaf and Al-Qadisiyyah ranked first in planted areas, followed by the provinces of Babel and Diyala. The least planted areas was in the province of Al Muthanna. Concerning the productivity, the provinces of Al Muthanna and Wasit registered the lowest levels of productivity of the harvests.

Dates suffered from significant deterioration in the area of the palm trees fields and production and productivity losses resulting from the consecutive wars. Especially hard hit was the province of Al-Basra, which had held first rank in the number of palm trees, production, and productivity in past decades until the end of the 1970s. In 2007, the provinces of Saladin and Wasit ranked first in productions, 75 and 74 kg/palm trees, respectively; other provinces like An Najaf, Maysan, Karbala, and Diyala ranked low, with productivity between 44 and 48.5 kg/palm trees.

Fruit is considered an important food for the population and its domestic production does not satisfy market needs. The need for fruit increases when the standard of living of the population improves, as this increases the demand for it. Importing fruit

has economic disadvantages, so improving productivity to meet the demand is important.

The increase in costs to establish fruit fields, the long period between planting and harvest, and a decreasing cost of imported fruit led to weakness in domestic fruit production because it competes poorly with imported fruit on the one hand and with other harvests that have shorter production cycles on the other. In the last few years, production suffered from the spread of diseases, including white fly on citrus trees. Coupled with the low use of pesticides and fertilizers and lack of modern techniques in caring for the fields, this has had a negative effect on the level of productivity and causes a need for imports.

Including grapes, which constitute the largest percentage of summer fruit, the number of fruit trees in 2004 in the country reached 17.2 million trees. The average of productivity was 23.5 kg/tree in the country; in 2007 the number of fruit trees in the country was 18.4 million trees, with a low productivity of 21.1 kg/tree in the country. As for fruit trees in 2004, the number was 8.1 million trees in the country. The average productivity in the country was 13 kg/tree. The provinces of Saladin and Baghdad occupied the first rank and the number of fruit trees in 2007 increased to reach 8.5 million trees in the country, and that was accompanied by a reduction in the average of productivity to 10.2 kg/ tree.

5.2.2 Animal Production

Livestock Wealth

a. The most important animals in Iraq are cows, buffalo, sheep, and goats because they provide food for the people as well as skins and wool that are used for industrial purposes. The last count of livestock wealth, in 2001, showed that there were 1,232,147 cows, 117,778 buffalo, 6,009,139 sheep, and 736,198 goats.

Livestock wealth was influenced by the circumstances of war. Livestock suffered from diseases like foot-and-mouth disease, experienced a scarcity of meadows, and lacked proper veterinary services, leading to the death of many animals. Iraq has the capability to double existing herds, especially in the provinces that have the basic requirements like meadows, factories and stores of fodder and experienced keepers.

b. Fish wealth decreased from 36,935 tons in 1997 to 25,998 tons in 2001 because of the drying of swamps in Al-Ahwar and the decrease in water levels (40 percent of swamps have dried up significantly). The figure below shows the changes that have occurred in Iraqi swamps. Production of Iraq of fish wealth (from fisheries, rivers, and the sea) in 2005 reached 25.6 thousand tons only; that is identical to what Somalia produces, and 40 times less than what Egypt produces. Certain main species of Iraqi fish have disappeared from the market as a result of fishermen using poisons and explosives to kill them and failing to abide by rules that prohibit fishing during the propagation season, in addition to other detrimental factors including the lack of fodder and medicine as well as the general weakness of the system. Reports of the FAO show that the total production of freshwater fish started to decline

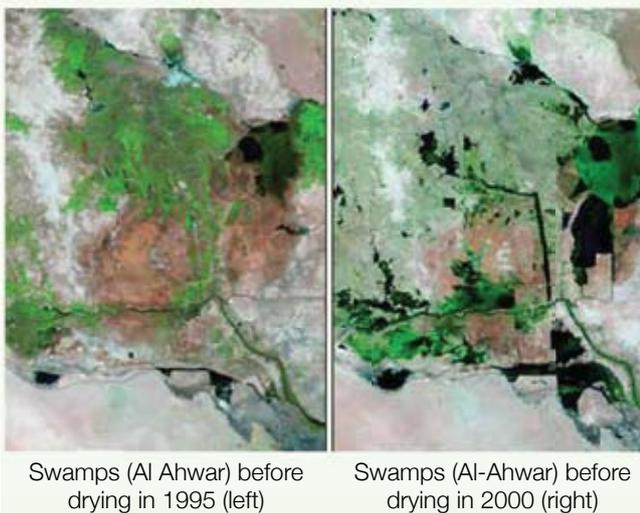
Agriculture and Water Resources

continuously in the period following the war. It was between 13,600 and 12,300 tons between 2000 and 2004.

Normal carp constitute the greatest species found in the internal water spaces of Iraq, followed by cyprinid, barbell, Al-Ahmar, Al-Shelk, Al-Baz (barbuse socinus), and Al-Jari. There are large numbers of other species of fish that are not used in the marketplace, like Al-Khashabi and Al-Lassaf. Species that live in the sea include Al-Shank, Al-Bayah, Al-Zubaidi, and some crustaceans and shrimp.

The FAO report stated that the number of fisheries in Iraq was 1,787 at the end of 2003, with 178 fisheries in the north and 1,609 in the central and the southern regions. The main species bred in fisheries are normal carp, grass carp, and silver carp.

Map 1 Satellite photos of the swamps (Al-Ahwar) of Iraq before and after drying in 1995 and 2000.



Swamps (Al Ahwar) before drying in 1995 (left)

Swamps (Al-Ahwar) before drying in 2000 (right)

The incubators for propagating fish in Iraq are distributed as described below.

1. Al-Swairah Central Incubation Facility (Fish Farm): the buildings and premises of this project were fully destroyed after the fall of the regime.
2. Arbil and As-Sulaymaniyah: each one of these two fish incubating facilities contains 80 incubators. The production capacity of these two incubators is 15 million larvae.
3. The private sector incubators: There were 24 incubating facilities in 2003 and they contain 749 incubators; their average production capacity is 129 million larvae.

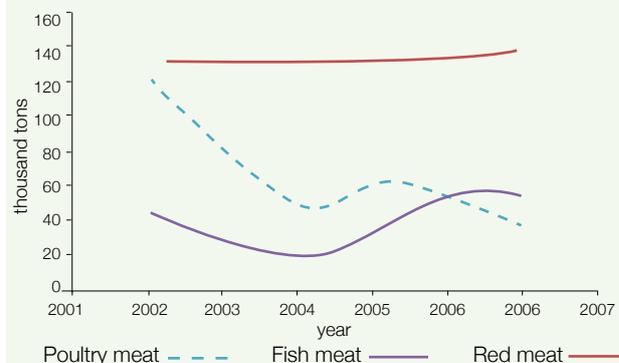
c. Livestock is the main part of the food basket, especially for providing protein. It is also an important source for the raw materials that are the components of many industries.

Animal production in Iraq has not developed commensurate with the food requirements of the population, which high levels of growth in recent years, along with attendant high levels of

income and living standards. The production of red meat has not shown any tangible development since the beginning of this decade (annual production is between 135,000 and 140,000 tons per year); production of poultry meat decreased from approximately 125,000 tons in 2002 to approximately 42,000 tons in 2007. That was a result of an increase in the costs of production, especially the cost of fodder; the inability to compete as a result of flooding the market with cheap products; the loss of important parts of the production process such as the principal fields in Samuraa; and the refusal of investors to operate their fields because of the absence of studied support for this industry. All of this has also had negative consequences on the production of eggs, currently at 604 million eggs.

Despite the noticeable increase in the production of fish, from approximately 40,000 tons in 2002 to approximately 58,000 tons in 2007 that is attributed to establishing unlicensed lakes and basins, there is a noticeable decline in fish productivity of the donom in internal water spaces; it does not exceed 4 kg/donom. Some countries have a productivity of 50 kg/donom in this field, and the international average is 35 kg/donom/year. In the fish basins, productivity reaches approximately 50 kg/donom. the following figure shows the development of the production of meat (red meat, fish, and poultry) in Iraq in the current decade.

Figure 3 Annual production of white and red meat for the years 2001-2008



5.2.3 Sufficiency and Competitiveness of Domestic Plant and Animal Production

Sufficiency of Production

Agricultural production is for direct consumption or for use as raw materials for the food and other industries. Despite the large areas that are planted with the crops, the low productivity of the donom of most of the harvests means that is insufficient for domestic need, and the deficit must be covered by imports.

The value of imports in the private sector in 2002 was US\$372.7 million. The food group constituted a percentage of 47.6 percent of total imports. The value of imports in the private sector in 2003 reached US\$1,129.9million, of which the food group constituted 18.7 percent. The value of the annual

imports of the ration card issued to needy citizens is US\$3.5 billion dollars; most of the items are food materials like wheat, rice, oil, tea, milk, and legumes.

Except for dates, production of most food products is insufficient to meet the needs of the population. Wheat meets about 49 percent of the need; barley, 59 percent; yellow corn, 33 percent; potatoes, 76 percent; tomatoes, 40 percent; red meat, 14.5 percent; white meat, 14 percent; milk, 43 percent; and eggs, 16 percent. This reflects the fragility of food security in Iraq despite its large agricultural capabilities.

Competitive Capability

The quality of Iraqi agricultural products currently is between “acceptable” and “not acceptable” because the wheat and barley crops are of low quality resulting from weakness in their productive characteristics and their susceptibility to diseases. Other basic products like rice, fruit, vegetables, red and white meat, and dates will have a competitive capability if the production and marketing processes are improved to increase the productivity of the donom. This would lead to the decrease of the standard output in addition to protecting the domestic product from the policy of flooding the Iraqi market with cheap agricultural products from neighboring countries.

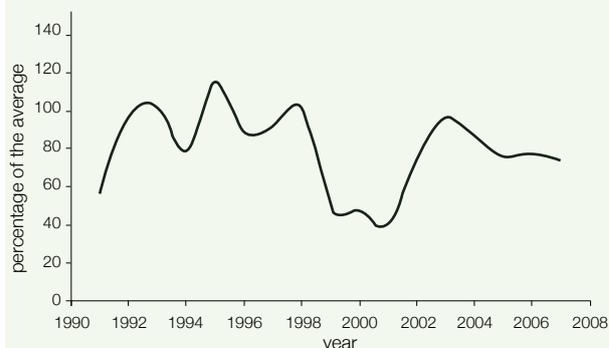
5.3 Water Resources

Iraq lies in an area that is between dry and semi-dry. The annual average rainfall is not more than 200 mm. Approximately half of Iraq is desert. The rain that falls in it is not more than 50mm per year and most of the remaining areas of Iraq benefit from 150 to 450 mm/year, except in a few mountainous areas in the northeast, where rainfall is approximately 1,000 mm/year.

The water resources of Iraq are strongly connected with the quantity of rain and snow that fall in the main river basins (Tigris and its tributaries and Euphrates) and the policy of using the dams and reservoirs that are built on upper parts of the mutual rivers in Turkey, Syria, and Iran. There are no international agreements to share the water between Iraq and these countries. This makes the water resources that are available for Iraq fluctuate from one year to another, as shown in the following figure. Its quality deteriorates because it is kept in reservoirs and polluted water is discharged into them from various industrial agricultural and human activities.

Figure 4

The percentages of the contribution of revenues of the Tigris and the tributaries of the Euphrates to the average



Source: Ministry of Water Resources.

Iraq will witness more shortages in water resources and low quality after Turkey completes its irrigation projects and Syria develops its irrigation projects. That is because Turkey and Syria are aiming at planting more than 2.4 million hectares that will be irrigated from the Euphrates basin, and approximately one million hectares that will be irrigated from the Tigris. This will cause a deficiency in revenues from the Tigris and Euphrates of more than 43 percent in 2015. Therefore, the Ministry of Water Resources is updating the water budget of Iraq (comprehensive planning of water and land), and will establish policies related to managing and investing the water resources. With respect to water resources shared by other countries, a diplomatic approach is required to reach a just division of waters that guarantees the reduction of damages that result from scarcity of water. The countries that share the rivers with Iraq will need to work with Iraq through agreements and strategic treaties based on mutual interests.

Iraq has passed through a bitter experience with water over the year that ended on 30/9/2008 and it has negatively influenced the agricultural production, which was originally undeveloped, and especially livestock wealth for the following reasons:

1. Drought and unsuitable climate conditions
2. Scarcity of water in the Tigris
3. Euphrates and its tributaries
4. Problems in managing and operating some dams
5. Weakness or absence of water guidance.

Climate changes that are happening all over the world may affect the areas in Iraq that are more prone to drought. Therefore, suitable water policies need to be characterized by flexibility, qualified and integrated management systems for water resources, long-term plans, participation of users of water in the responsibility, and consideration of water as a valuable commodity. Iraq will face, sooner or later, tough challenges in securing its continuing water requirements.

Agriculture and Water Resources

5.4 Agricultural Holdings and Legislation Governing the Sector

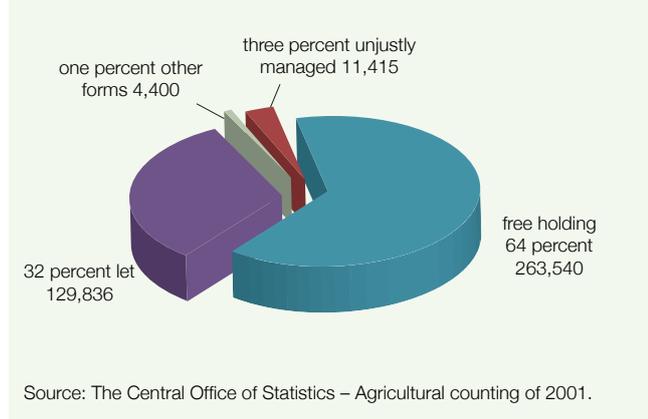
5.4.1 Agricultural Holdings

The agricultural sector in Iraq is characterized by different types of holdings and their small size, the result of continual division as a result of inheritance. Large areas of arable lands have been divided into small holdings that are uneconomic. This forms a big hurdle for agricultural production and is a reason for lack of stability in the sector.

1. Owned lands are completely subject to private holding, and the owner enjoys complete freedom in dealing with them.
2. State-owned lands (Amiri lands) are divided into two types: purely state-owned land that has never been taken from anyone and land that is registered officially in the land registration department and that the government has given to someone with a registration document, but that the government still supervises.
3. Endowment lands.
4. Left lands are lands that are left for different usages and owned by the state.
5. Wastelands, which are deserted and uncultivated lands.
6. Sixty-four percent of all agricultural holdings are free holdings of certain persons. They are divided into small, uneconomic areas in most cases simply because of inheritance; 32 percent of them are let be, three percent of them are poorly managed and one percent are in other forms of holdings.

Figure 5

The number of agricultural possessions and the percentages according to holdings



5.4.2 Legislation Governing the Sector

The Law of Agricultural Holding of 1932 is considered the first law regulating agricultural holding in Iraq. In September 1958, the Law of Agricultural Reformation No. 30 was issued. It regulates agricultural holding and it specified the maximum limit of the area of land that an individual is allowed to own within the irrigated and dry areas in addition to the minimum limit of areas

that are allowed to be distributed to the peasants within the same concept. In 1970, the Law of Agricultural Reformation No. 117 dealt with many of the legal loopholes left in the Law of 1958. In 1983 a law was issued allowing agricultural reclamation for companies and individuals (No. 35 of 1983). These three laws are considered to make up the most important legislation that regulates the work of this sector. In 1985, Law No. 79 and Decision No. 350 were issued; they were concerned with letting the reclaimed lands to university graduates who had studied agriculture. In 2006, the Law of Investment No. 13 that allows the investment within the agricultural sector among the other economic sectors was issued.

The multiplicity of laws, legislations, instructions and continuous change has allowed only a modest area of agricultural possession. This is despite the fact that they have tried to take into consideration the method of irrigation, the level of fertility and the type of crops, and have enriched the performance of the agricultural sector. That is because the holdings in general are below the ideal economic level and they were one of the reasons that caused the deterioration of the agricultural field and its non-development.

5.5 The Private Sector's Role

Though private ownership of agricultural holdings is at approximately 64 percent, the role of the private sector in agriculture remains limited and is affected by government policies that support other supplies of production without a serious attempt to develop the agricultural sector and increase the efficiency of its performance and productivity. Private sector investment in the agricultural sector are mostly limited to projects of livestock wealth (raising domestic animals and fish), i.e., the fields that achieve quick returns. After passage of Law No. 35 of 1983, productive activities in the crops field emerged on relatively large areas in addition to the abandonment of the state of agricultural production projects and the farms of the state in 1987. The farms and livestock operations were privatized, but regulations, the blockade, and the fall of the regime in 2003 did not give privatization the opportunity to develop naturally.

Every economic sector in Iraq has its own problems, but the agricultural sector has suffered from problems that have not resulted from inside the sector itself. The sector has not witnessed, and will not witness, development unless the country becomes stable. As in most countries, prosperity in agricultural activities goes hand in hand with a stable political situation. The following are important challenges that limit the role of the private sector in agricultural activity.

1. After 2003, the labor force that had a background in agriculture was attracted to other activities like the police and army because of higher incomes and fees in those activities and the fact of deterioration in the agricultural sector.
2. The capital required to develop the agricultural sector remained for many decades in the hands of the state. The private sector refrained from investing in agricultural development projects because sufficient funds were not available and there was no confidence between the

private sector and the government. It is now up to the state to prepare and foster the legal environment that will enable cooperation with the private sector in agricultural projects.

3. The nature of ownership is considered one of the main limitations in development of the agricultural sector. The subject of the different types of agricultural holding is still causing arguments, as it is a big hurdle to increased production as well as a contributing factor to Iraq's instability.

5.6 Social Dimensions to Agricultural and Rural Development

Agriculture was the source of living for approximately 64 percent of the population of Iraq in the 1940s and 1950s. The percentage declined gradually, reaching its lowest level in the 1990s (28.5 percent); it then started to increase again, reaching approximately 40 percent in 1997. Most of the data from Iraqi rural areas show that there are two distinguishing phenomena. The first is the reduction in the numbers of those who are economically active in rural areas from the total labor force in Iraq from 16 percent in beginning of the 1990s nineties to approximately 10 percent at the end of the century because of widely spread unemployment in the countryside, especially among young men. This is considered a factor that encourages the continual migration to the city. The second is the increased reliance on women in agricultural labor. The percentage of women in agricultural works in 2000 was more than 50 percent of the total number of workers in agriculture, and this percentage is expected to increase 59 per cent in 2010, according to data from the FAO, making women the main force in field works.

This puts increased pressure on rural women, who also have primary responsibility for family duties and is considered an element in limiting opportunities for developing the countryside. The CSO's public population statistics showed in 1997 that there was a counter-migration from cities to rural areas because of the economic feasibility of agricultural production. This encouraged many inhabitants of cities to move to rural areas and to live in them. But, the migration pattern changed, and people began moving from rural areas to the cities because of the harsh living conditions in the countryside. According to FAO estimates, more than 79 percent of the land resources in Iraq are deteriorating to the point that people choose to migrate.

The attractiveness of the cities is considered one of the reasons in the increase in migration from the countryside. This has increased the unemployment problem in cities and deepened the pressure on populations and public services that was originally fragile. Any fundamental reformation of the rural areas will have positive consequences for both the rural and urban sectors. Stabilizing the rural labor force and alleviating poverty in rural areas will be accompanied by liberation of the cities from the economic, social, and service pressures of migrants from the countryside.

5.7 The Agriculture Sector's Capabilities

The agriculture sector has huge capabilities that make it one of the leading sectors in supporting and diversifying the national economy. These are described below.

1. The existence of approximately 45 million donoms of arable irrigated and dry arable land, 23 million of them with the possibility of being irrigated and 13 million that are already irrigated. This gives a capability to widely utilize the production of plants with a diversified composition of harvests that would hugely participate in achieving the food security of the country.
2. The existence of a large basic herd that consists of primarily sheep, goats, cows, and buffalo, which are a fundamental source of animal protein. Moreover, there is the ability to develop fish and domestic animal and egg production with competitive pricing, unlike in previous decades.
3. The diversity of the environment in Iraq: woods in mountainous areas, deserts, wide desert hills, and swamps (Al-Ahwar). This harbors the opportunity to diversify the production of plants and animals and to use the various environments to develop harvest compositions and competitive productivity. Iraq is characterized by enormous biological diversity; FAO has indicated that more than 40 percent of biological forms are available in Iraq.
4. The existence of good water resources from the Tigris, Euphrates, and their tributaries, and the northern areas of Iraq with rain levels that are between 400 and 1,000 mm/year and other areas with levels that are between 150 and 450 mm/year. It is possible to satisfy additional water needs through supplementary irrigation.
5. The existence of significant human resources to practice agricultural activities. Approximately 30 percent of the population is not efficiently utilized despite their qualification to practice agricultural activities based on their scientific agricultural capabilities.
6. The existence of supportive policies and policies with regard to the inputs and outputs of agricultural experience, despite it characterized as being unstable and having changed its orientations according to consecutive political regimes.
7. The existence of fundamental bases to support the participatory role of private sector activity in the production of both plants and animals.
8. The existence of fundamental bases for laws and regulations in the sector, but ones that need development and updating if they are to form the basis of a comprehensive agricultural revolution in which the private sector would have a leading role.

All these available capabilities of the agricultural sector, if well utilized, will become fundamental factors in developing the sector and supporting its role in attaining food security, creating employment opportunities, developing the countryside, limiting poverty and actively participating in diversifying the Iraqi economy.

Agriculture and Water Resources

5.8 The Agriculture Sector's Challenges

Despite the historical heritage of agricultural activity in Iraq, the agricultural sector has suffered, and is still suffering, from significant problems and challenges that can be summarized as shown below.

1. A severe deficiency in achieving food security for the country from domestic production
2. The limited water resources that can be used for agriculture and the limited available methods of storing it currently compared with the need. Moreover, there is no agreement that gives Iraq a just share of the Tigris and Euphrates. There are related challenges, including:

The random use and waste of water in the agriculture, industry, and civil sectors; the weakness of internal coordination; and the absence of consensus between the main water users, which requires developing a vision and water policy; the weakness of participation of the users of water in managing it and the absence of water guidance; the suitability of irrigating the fields, especially from the rivers.

A flexible system is needed to manage the demand for water to "maximize the utilization of the water that is available for us" and that takes into consideration the social, political, economic, and environmental factors within which this process is managed. The strategies and the tools of managing the demand for water enable to the efficient use of water in addition to just behavioral practices of water usage.

3. The fact that though there is vast arable land in Iraq, the part that is utilized remains small and inadequate. In addition to that, there are challenges that accompany the use of these lands, including:
 - The problem of water logging and salinity of the soil in central and southern Iraq
 - The division of holdings and the small size of holdings hinder agricultural processes, especially the use of machines and modern techniques
 - The spread of gypsum soil in wide areas of the country, which demands special experience and care
 - The increase in the desertification area and the spread of sand dunes, along with degradation, which form a severe danger to agriculture.
4. The severely low productivity of the donom for all crops and farm animals and the increase in prices of these products compared with international prices. There is the possibility of making significant improvements in the productivity of crops and animal farms by adopting modern production and administrative processes and improving guidance.
5. The lack of human resource development and supporting capabilities, including:
 - The prevailing administrative situation as the administrative system is suffering from an

unnecessary increase of the number of employees and management cycles; this has negative influence on its movement, activity, and performance.

- The technical and administrative capabilities of the workers in this activity still need support, development, improvement of guidance tasks, a raised standard of awareness, and negotiations to reach acceptable agreements on improving the quantity and quality of water and guaranteeing a just and acceptable share of water for Iraq.
 - The weakness of coordination between research parties and the executive parties, severe shortages in supplies for practical field research, the necessity for doing this side by side with agricultural guidance and imparting that to local people, and dealing with shortages in the field of agricultural media are essential.
 - Advanced methods are needed to transfer production capabilities in order to narrow the gap that exists between actual needs and achieved production, even partially.
6. The fact that government investment is still less than the required standard and the investment environment is still unattractive for the private and foreign sectors, despite the Law of Investment No. 13 of year 2006, as no investments that could strengthen the agricultural sector were pumped into it. Agricultural investments are the key to continual development and the best method to achieve food security, find more productive employment opportunities, improve the income of rural inhabitants, increase levels of nutrition of rural families, and reduce migration from rural to urban areas.
 7. The fact that applicable laws in the agricultural sector stress the principles of maintaining an everlasting environment, but that they are not properly executed or applied. That is because the illegal hunting, use of poisons and electricity for fishing, and irrational use of fertilizers and pesticides are the dominant practices, in addition to the lack of an effective system for processing recycling sewage water.
 8. The existence of economic, social, educational, and constructional underdevelopment in rural areas. The countryside suffers from a clear decrease in productivity, severe unemployment (especially seasonal), a notable decrease in the level of services, and widespread poverty (approximately 40 percent of the total number of poor people in Iraq). These are the primary causes for migration from rural to urban areas.

5.9 Vision

1. Increase the role of domestic agricultural production in achieving food security; entering the field of exporting dates and fruits; making ideal use of the natural, financial, human; and productive resources that can help Iraq become competitive; utilizing modern technology and foreign expertise; and stimulating the private and foreign sectors to invest heavily in this sector.
2. Increase the participation of agriculture in the GDP, forming a steady flow of capital, considering the agricultural sector

a fundamental sector in diversifying the Iraqi economy, and addressing the issue of poverty that is focused in the Iraqi countryside.

3. Enable Iraq to obtain water rights from bordering countries and provide guidance for internal water consumption.

5. 10 Objectives

5.10.1 Water Resources and Land Reclamation

1. Building nine dams during the period of the National Development Plan to increase water reservation capacity to approximately 33 billion square meters, including the 14.4 billion square meter Bukhma Dam, which will take three years to complete and will generate an electric capacity of 1,500 megawatts.
2. Developing water resources by expanding the gathering of water in suitable areas and reusing wastewater later.
3. Improving water treatment capacity.
4. Working on integrated reclamation of the lands to reach an annual average of 800,000 donoms. Justice in distributing

the reclaimed lands of the provinces, especially in the first years of the plan, should be applied until 4,005 out of the 7,196 million donoms in the 18 provinces are completed.

5. Completing the main debouchments: the Eastern Euphrates, the Western Euphrates, east of Al-Gharaf, west of Al-Gharaf, and east of the Tigris to maintain the quality of the main rivers.
6. Implementing necessary maintenance works according to the operating budget for them. There are 126,000 km of networks for irrigation and canals, and more than 200 water-pumping stations, among other things, that need regular maintenance.
7. Beginning a continuous program of investing in underground water resources.

5.10.2 Agricultural Production

1. Regarding plants, producing wheat in winter, producing potatoes in summer, and developing the production of dates and fruit, as a priority. Secondarily, producing rice, tomatoes, onion, white and yellow corn, fodder legumes, jat, and grass. The following tables show the production plan for the above-mentioned harvests for 2010-2014.

The Production Plan of Wheat for 2010 and 2014 Compared with the Starting Line.

Harvest: kg/donom
Area: 1,000 donoms
Production: 1,000 tons

Table 26			
Crop	Starting line	2010	2014
Irrigated wheat			
Harvest	409.8	450	500
Area	3,526	3,500	3,400
Production	1,445	1,575	1,700
Semi-Irrigated Wheat			
Harvest	409.8	691	1,000
Area1	450	700	1,700
Production	184	484	1,700
Wheat dependent on rainwater			
Harvest	139.3	140	140
Area	2,049	1,950	1,550
Production	285	273	217
Total of wheat			
Harvest	317.8	385.8	543.9
Area	6,025	6,150	6,650
Production	1,915	2,332	3,617

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The Production Plan of Barley, Rice, and Yellow Corn for 2010-2014

Harvest: kg/donom

Area: 1000 donoms

Production: 1000 tons

Table 27			
Crop	Starting line	2010	2014
Irrigated barley			
Harvest	275.7	280	300
Area	1,707	1,750	1,800
Production	470	490	540
Dry barley			
Harvest	75.5	100	150
Area	2,919	2,900	2,750
Production	220	290	413
Total barley			
Crop	149.3	167.7	209.5
Area	4,624	4,650	4,550
Production	691	780	953
Rice			
Harvest	750	800	1,000
Area	446	300	300
Production	335	240	300
Yellow corn (grains)			
Yellow corn (irrigated)			
Harvest	609.6	650	850
Area	541	500	300
Production	330	325	255
Yellow corn (irrigated with sprinkling)			
Harvest	609.6	950	1,250
Area	45	145	545
Production	27	138	681
Total yellow corn (grains)			
Harvest	609.6	717.8	1,107.7
Area	586	645	845
Production	357	463	936

Plan for Producing Potatoes, Onion, Tomatoes, and Dates for 2010-2014

Harvest: kg/donom

Area: 1000 donoms

Production: 1000 tons

Table 28			
Crop	Starting line	2010	2014
Potatoes/ spring			
Harvest	3,922	4,000	5,000
Area	77	80	80
Production	303	320	400
Potatoes/autumn			
Harvest	3,899	3,950	5,000
Area	71	80	180
Production	278	316	900
Total potatoes			
Crop	3,931	3,980	5,000
Area	148	160	260
Production	581	636	1,300

Onion			
Crop	2,001	2,200	3,000
Area	57	70	80
Production	113	154	240
Tomatoes			
Crop	3,337	3,350	5,000
Area	335	370	400
Production	1,118	1,240	2,000
Dates			
Productivity	447	450	700
Productivity of palm tree (kg)	55.14	55.5	70

2. With regard to animal production, increasing the number of sheep, goats, and poultry as a priority, then increasing the number of buffalo and camels and achieving significant increases in the production and productivity of t animal

products (white and red meat, milk, and eggs) as shown in the following tables. The plan also calls for giving support for the private sector to rehabilitate livestock wealth projects, especially poultry projects.

Animal:	Annual Growth Rate:	Number of Animals According to Year				
		2010	2011	2012	2013	2014
Sheep and Goat	7%	12,000	12,840	13,740	14,710	16,000
Cow	%7	1,500	1,605	1,717	1,838	2,000
Buffalo and Camel	%5	250	263	276	289	305
Poultry						
Chicken Meat	%10	860	946	1,041	1,145	1,259
Hens for Meat Production	%50	100	150	225	338	500
Chicken Eggs	25%	500	625	782	997	1,250
Hens for Egg Production	%40	30	42	59	83	125

Production	Production of 2014
Red meat ¹	243
Sheep	112
Cows	104
Buffalo and camels	27
White meat	140
Chickens	100
Fish	40
Milk	1,360
Sheep	325
Cows	960
Buffalo and camels	75
Eggs	1,500

1. With 40 percent of births and 60 percent of raising and fattening of herds.

5.11 Means of Achieving Agricultural Objectives

5.11.1 Investment Policy

Emphasizing the importance of agricultural sector in the country's investment policy, both animals and plants, and providing the required water for agricultural use. Focusing investment policy in the sector on securing the fundamental infrastructures, including integrated reclamation of the land; building dams and reservoirs; supporting the activities of research and applicable agricultural studies; breeding new, distinguished species that produce quickly; expanding projects that increase production of ratified seeds; providing veterinary care; fighting agricultural diseases and spreading modern techniques (artificial insemination and embryo transfer); maintaining biological diversity; and establishing natural protection areas with concomitant integrated rural area development, improving rural roads, supporting inhabitants of the countryside, spreading healthcare projects, especially basic ones). The investment plan must equally distribute investments in among the provinces in accordance with the available agricultural capabilities in each and the relative advantages to the country as a whole.

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5.11.2 Supporting the Private Sector

1. Encouraging private and foreign sectors to invest in animal and plant production and establishing industrial agricultural societies on appropriate economic and technical bases and in the field of establishing cooling and freezing storage.
2. Encouraging the public joint-stock companies by developing and strengthening the financial markets with the state participating by buying parts of their shares at the foundation stage and withdrawing them later when the companies become stable.
3. Growing and developing financial markets and adopting credit policies that encourage the private sector to rehabilitate its projects that were halted, and establishing new projects.
4. Continuing to support agricultural inputs and outputs and protecting them from imported products, especially during the term of this plan, to enable the private sector prove itself competitive against imported products.
5. 11. Encouraging the private sector to industrial agricultural based on economic and technical expertise, including reclamation of lands and establishing irrigation and canal networks.
6. Supporting and encouraging investment in promising areas in the western desert to produce fodder and raise animals and encouraging the investment in other agricultural objectives on the borders of deserts.
5. Activating the projects of dams centrally.
6. Completing the connection of the main canals with the main outlet to rid rivers and canals from local pollution.
7. Supporting and expanding agricultural guidance, spreading the application of agricultural researchers, , and expanding guidance projects so that users of water are aware of the importance of the wise use of water, ideally with the participation of the concerned ministries.
8. Strategically invest in underground water dedicating required sums to buy digging equipment and holding the Ministry of Water Resources solely responsible for those resources. Random expansion in digging wells should be limited by preventing private companies, and even the government companies under the control of the state's organizations, from investment except unless they have obtained approval from the Ministry of Water Resources.
9. Taking the limited water resources into consideration in the process of setting future agricultural policies by expanding the application of modern irrigation methods and encouraging the planting substitute crops that consume less water and can resist salinization and drought.
10. Building on the suggestions made by Turkey during water resource negotiations concerning the ideal and rational of water. This calls for focusing on the productivity of the single donom, and it is necessary for the Ministry of Agriculture to take steps to qualify the capabilities of those who utilize the land. This would be done through increasing the production unit of the area of the crops by giving technical support, facilitating the process of obtaining the components of production like fertilizers, machines and fuel for agricultural processes, fighting the forests and the increase of buying prices of crops as a factor that participates in making peasants interested in taking care of planting their lands.

5.11.2 Water Policies

Providing the required quantities and qualities of water has become one of the limitations of agricultural expansion in Iraq. Therefore, it is imperative that this be a priority in the development policies in Iraq in general and the agricultural policies in particular through a wide group of programs and procedures, as described below.

1. Reaching an agreement with the countries that share water from the Tigris and Euphrates and their tributaries (Turkey, Syria, and Iran) to do so according to international agreements and conventions to guarantee that Iraq obtains a quantitatively and qualitatively just share of water.
2. Complete the second stage of the water budget quickly (the strategic study of water and land resources) that the Ministry of Water Resources has undertaken for the various sectors that are beneficiaries and consumers, including agriculture, electricity, transport, swamps (Al-Ahwar), drinking, healthy water, industrial needs, and others.
3. Develop a central plan that specifies the share of water needed in all areas of arable land. Moreover, specify agricultural requirements such as machines, ratified seeds, and fertilizers. Agricultural staff should perform monitoring and evaluation to guarantee appropriate implementation hold rural inhabitants responsible for adhering to the.
4. Applying the principles of integrated management of water resources in coordination with all parties responsible for the ideal use of water resources and maintaining them, including the treatment of sewage and industrial wastewater, not letting it go into the rivers before treating it, and studying the possibility of reusing it.
11. Establishing an information bank in the field of managing water and irrigation to use in the processes of planning, managing the demand for water for different purposes, developing the apparatuses of measuring wastes and levels and methods of collecting hydrological and climate methods about the basins of the Tigris and Euphrates, and documenting them.
12. Continuing to maintain dams and reservoirs and solving problems related to the ideal operation of water resources; building new dams to store quantities of water in suitable areas, with priority given to implementing projects that have complete feasibility studies and available financing.
13. Establishing a national project that deals with studies on international climate change, its effects on the water that comes into Iraq, and the future living conditions in light of expected scarcity.
14. Directing research studies in the concerned ministries and universities toward finding the necessary methods and applications to increase the standard of irrigation; reduce

waste;, use untraditional water resources like sewage and agricultural wastewater; invest in irrigated agriculture; and apply the research results at the level of pioneering projects to make them the initiative to be used by all water consumers. This requires returning to establishing research centers.

15. Considering water an important economic resource and setting a suitable price for it to maintain this wealth.
16. Giving the maintenance of projects, irrigation networks, canals, and reclaimed lands top priority and returning to the method of managing and operating them by establishing independent authorized administrations, as it was in the Law of The Agricultural Interests.

5.11.4 Rural Development

Applying the principle of integrated rural development through the term of the plan to raise the economic, social, educational, and constructional level of rural societies; removing the injustice that they have suffered from in past eras; and reducing the differences between rural areas and urban areas by spreading schools, healthcare organizations, and water and electricity projects using all available power resources, including renewable powers (wind, solar, and biological) in addition to traditional sources of power. It is also suggested that we establish rural roads that connect main villages with the districts and counties to limit migration of rural inhabitants, maintaining the work force in the rural sector, and participating to a large extent in limiting the phenomenon of poverty that is severely concentrated in rural areas of Iraq.

5.11.5 Increasing Productivity and Improving Production

Using all resources available to increase the harvest of the donom, whether tree or farm animal, especially modern machines, fertilizers, ratified seeds, agricultural cycles, and methods of irrigation like sprinkling, dropping, and supplemental irrigation and artificial insemination, embryo transfer; supporting the role of research centers and universities in this field.

5.11.6 Biological Variation

Maintaining biological variations and increasing the flexibility of food production to meet the challenges imposed by climate change. Increasing the number of the natural protected areas and maintaining the ones that are currently available and using gene banks.

5.11.7 Relative Advantage

Capitalizing on the comparative advantage of each agricultural area, starting with planting lands that are suited to different specific crops, and then reducing the levels of crop harvests that are plants grown in unsuitable areas.

5.11.8 Legal Reformation of the Agricultural Sector

1. Issuing special legislation for managing water through the participation of governmental parties and beneficiaries (societies of water users).
2. Limiting the holding of arable lands to two main types:
 - Freehold of individuals or groups
 - State-owned land.
3. Reviewing all laws and decisions that govern agricultural relationships and preparing one comprehensive law with the new reality.
4. Taking care of the mutual ownership issue and the problems of removing joint ownership of arable land to dividing arable lands and fields.
5. Amending the Law of Agricultural Reformation 117 of 1970 (Article 4), paragraphs 3 and 4, to allow a rural inhabitant to benefit from owning the land distributed to him, including the right to waiver it to others more capable with expertise in the agricultural sector.
6. Applying the amended Law 35 of 1983 on the large areas only.
7. Studying the issue of letting those who own lands to repossess them from actual investors.
8. Reviewing the inheritance law so that it won't lead to dividing ownerships in the future but without damaging the legal capacity of inheritance.

Chapter Six

Industry and Energy



Industry and Energy

6.1 Previous Policies in the Area of Industry and Energy

The industrial sector is one of the most important in promoting the material foundations of any economy. Its importance is even greater in Iraq because the oil sector and its extraction and conversion activities are among the most important activities in the economy. The crude oil sector has garnered considerable attention since the discovery of oil in Iraq at the beginning of the 20th century; policies and procedures were promulgated to develop management, drilling, production, and marketing operations. In 1972, crude oil was nationalized as an important national resource to fund national growth and its attendant economic, social, and developmental dimensions. In the 1960s, 70 percent of oil revenue was directed to the development of economic and service sectors as well as to basic infrastructure. Recently, this figure has declined to 50 percent.

As a result of the oil sector's exceptional importance, consecutive policies and procedures contributed to achievement of important results in crude oil production and export, which reached a peak in 1979 of 3.5 million barrels a day and 3.2 million barrels a day, respectively, as compared to the production and export figures of 1970, which totaled 1.5 million barrels a day and 1.4 million barrels a day, respectively.

The confirmed oil reserve in Iraq is now 12 percent of all world reserves. The confirmed reserve increased from 34 billion barrels in 1970 to 112 billion barrels in 1990 as a result of exploration activities and field development operations. In 2001, the reserves reached 115 billion barrels as a result of studies aimed at reevaluating geological and physical data using modern methods.

In addition to the aforementioned, the importance of widely investing in gas became prominent in the mid-1970s and resulted in construction of the North Gas Plant, whose production capacity has reached 536 million square feet (msf)²/day.

Due to the policies of consecutive governments, less attention was given to the field of conversion. In the 1950s, based upon the recommendations of foreign experts that development policies in Iraq focus on crude oil resources, construction of basic infrastructure, and the agricultural sector as a source of primary and food products, little importance was given by the development program to the conversion industry. The only exceptions were the industries built by the private sector. However, these were also linked to primary agricultural products, such as the textile, sugar, dairy and construction material industries.

Following the change in the political system in Iraq from a monarchy to a republic in 1958, greater attention was paid to the conversion industry. In the 1960s, development plans focused on creating conversion industries in a number of industrial avenues such as the glass and ceramics, refining,

paper, and mechanical industries, as well as traditional industries that existed in Iraq. These were based upon the premise that the conversion industry is a central pillar for building a strong material foundation for the economy and becoming liberated from economic subservience to industrial nations.

The economic plans for this phase considered that establishing these industries and spreading them throughout the provinces would stop mass rural-to-urban migration, particularly to Baghdad, which had exploded during that period. This policy was intensified in the 1970s and 1980s whereby it was greatly expanded into many industrial, engineering, mineral, heavy, chemical and petrochemical industries, as well as traditional industries prevalent in Iraq (food, textiles, and construction) even though some of those industries had no comparative advantage at the regional or international level.

In the 1980s and 1990s, military industries expanded, as well as those that were directly or indirectly related to the military effort. Huge military-industrial complexes were created in various locations around the country. In addition, the industrial sector's investment allocations reached 50 percent of the total investment allocations of some programs in the 1990s. This limited resource availability for other uses, particularly in the agricultural, service, basic infrastructure, and housing sectors, which government investment programs stopped funding as of 1984. The importance given to the conversion industry and the consecutive development plan's policy of channeling large investment amounts into these industries amounted to a contribution of 13.9 percent of the gross domestic product in 1988.

In electric energy, development policies in the 1970s and 1980s focused on this sector because of its importance to prosperity, the powering of production machinery, and economic activity in general. In the 1980s, it was planned that power generation would reach 20 thousand megawatts. A number of thermal energy stations were built with a capacity of up to 1,200 megawatts per station, in addition to the significant energy generation capacity from gas and hydropower plants. In other words, the electricity generation policy relied on the principle of making multiple generation choices available. It also promoted the creation of a national transportation and distribution network, particularly in the 1980s, and the proliferation of thermal energy stations that were planned for throughout the different Iraqi provinces to achieve economies of scale in energy transportation and to reduce waste in energy transportation and distribution networks. There were also plans to connect with neighboring countries to achieve sustainability in electric energy generation for consumers and economic activities.

Pursuant to the pre-2003 ruling regime's orientations, the public sector was in complete control of the oil and electric energy sectors. The private sector's role was not worthy of mention. The private industrial sector did have a clear role in the conversion industry, as its share exceeded 50 percent of the added value of conversion industry activity by the late 1970s. The conversion industry developed in the public sector

² msf = million square feet

in the 1970s and 1980s, and the private sector was given a role in small- and medium-sized industries. In addition, some laws supporting the activities of both the private and mixed sectors were promulgated. These provided many incentives and advantages to the various branches of the conversion industry. The most recent of these laws was Law Number 20 of 1998, titled the Industrial Investment Law for the Private and Mixed Sectors, which enabled the private sector to establish approximately 40,000 small- and medium-sized industrial projects.

Like other sectors, the industrial sector greatly deteriorated and its contribution to the gross domestic product declined, particularly in the areas of electrical energy activities and conversion industries, because of consecutive wars and the economic sanctions imposed on Iraq. This was particularly the case during the 2003 war. Almost all large factories were destroyed, especially those of a military nature. Electric energy generation stations were also destroyed. In addition, many public companies, production laboratories, and energy production plants were looted and vandalized. The subsequent lack of security exacerbated the problem and halted the operations of the private industrial sector. This, in turn, significantly reduced its contribution to the gross domestic product to no more than 3.9 percent in 2008.

After 2003, and due to the fragility of the security and political situation, production declined to record lows in the oil and electricity production sectors. Further, energy policy focused on increasing oil and gas reserves, expanding production and exportation of crude oil, improving its quality, and inviting foreign companies to participate in developing oil and gas fields pursuant to investment agreements and joint production contracts. This policy applied to all energy and conversion industry branches in general. In electricity, the direction was toward building gas generating units to increase production capacity, improve the transport network and control centers, and increase production and transport network reliability so as to achieve electricity connectivity with the transport networks in neighboring countries.

In the conversion industry, for the purpose of operating government industrial facilities in 2004, a plan was drafted for immediate operation. In addition, a loan was secured in the amount of 75 billion dinars for strategic companies. This contributed to commencement of operations at those companies. In 2005 and 2006, a survey was conducted of the conversion and extraction companies (excluding oil) to determine the requisite cost of improvements, which were estimated to be 2,250 billion dinars. However, the amounts collected from investment budgets for 2006 and 2007 were approximately 14 and 42 billion dinars, respectively. This did not match the actual need and resulted in the inability to effectively improve the public sector during those two years. In 2008, 668 billion dinars were collected from the investment budgets. This helped rehabilitate companies and introduce some production lines necessary to improve the industrial reality in Iraq.

With regards to the development of private industrial projects, as of 2006, the state contributed by granting many industrial project permits to the different industrial sectors. It also provided support for industrial projects by giving them loans and preferential rates as well as opportunities to obtain industrial land and operating necessities.

In research and technology, prior policies focused on technical research, particularly military research, and various research centers were established. After 2003, the new policy focused on encouraging scientific research for peaceful purposes, more specifically, research in human and animal pharmaceutical research and diagnostic kits. Research was also conducted in the areas of the chemical and petrochemical industry, packaging, environmental studies, and new and renewable energy resources. Work was conducted with the public and private industrial sector, government ministries, and educational institutions to revamp and improve basic infrastructure and the industrial base in Iraq, as well as to transfer technology and benefit from it.

The policies that followed between 2004 and 2008 for various industrial activities (oil and gas, electricity, the conversion industry), as well as the focus given by the 2007 – 2010 National Development Strategy to this sector, called for average annual growth of 13 percent in the oil sector and 37 percent in the non-oil sector, measured in current prices. This would be achieved using domestic investments and encouraging foreign investment. However, the magnitude of actual investments in the conversion industry and electricity sectors was much smaller than those the strategy said should be paid out of investment budgets. In addition, foreign investors were reluctant to invest in this sector. Accordingly, the industrial sector was not able to return to the levels attained in 1980 in terms of its share of the national economy. In addition to the aforementioned, the conversion industry was saddled with 19 dissolved military industrial companies in need of major overhaul and a change in the nature of their operations from military to civilian. It was also saddled with 9 companies destroyed in 2009.

As a result of consecutive wars, sanctions, and security conditions, industrial activity, including oil, witnessed fluctuations in its contribution to the gross domestic product when measured at current prices. It reached 66.4 percent in 1979, for example, and then declined to 34 percent in 1988. It increased again to 76.2 percent in 2001, then dropped again to 60.6 percent in 2004, then reached 58.3 percent in 2008. When analyzing the change in industrial activity's contribution to the gross domestic product for the year 2008 as compared to 2004, one notices a progressive increase in its contribution rate of 178.6 percent at current prices but only 16.6 percent at fixed 1988 prices.

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Year	Production	Gross domestic product at current prices	Growth rate compared to 2004	Gross domestic product at 1988 prices	Growth rate compared to 2004	Worker compensation	Surplus from operations and outflows
2004	35,936,966.4	32,235,265.2		21,227.7		844,546.3	31,315,837.1
2005	48,565,655.3	44,088,536.2	36.8	19,843.1	6.5-	919,428.1	42,983,450.4
2006	61,163,230.4	55,283,502.8	71.5	21,003.2	1.1 -	1,105,085.8	53,689,192.2
2007		61,856,655*	91.8	21,905*	3.2		
2008			178.6	24,749.1*	16.6		

Source: Central Statistics

Note: Data include water activities.

* Iraqi Economics Report for 2008 – Department of Economic Planning

Fixed capital for industrial activity at current prices increased from 2,017.718 billion dinars in 2004 to 15,760.143 billion dinars in 2007, a growth of 676 percent. The public sector had approximately 99.6 percent of the gross capital formation for the industrial activity in 2007. Accordingly, the government sector's continued dominance of industrial activity in Iraq since 2003 is apparent, despite confirmation of conversion to a market economy and the provision of a main role to the private sector.

Economic Activity	2004	Relative magnitude percent	2005	Relative magnitude (percent)	2006	Relative magnitude percent	2007	Relative importance percent
Crude Oil	448,719	22.3	2,381,925	53.9	2,639,510	26.4	6,000,469	38.3
Conversion Industries	200,063	9.9	86,666	2.0	3,220,347	32.1	330,590	2.1
Electricity & water	1,368,935	67.8	1,950,983	44.1	4,163,628	41.5	9,339,082	59.6
Total	2,017,718	100.0	4,419,575	100.0	10,023,485	100.0	15,670,142	100.0

Source: Central Statistics Organization (CSO)

Economic Activity	2004	Relative magnitude (percent)	2005	Relative magnitude (percent)	2006	Relative magnitude (percent)	2007	Relative importance (percent)
Crude Oil	944,595.8	21.8	3,382,618.7	39.1	4,276,035	24.1	8,911,839.4	27.0
Conversion Industries	300,378.2	6.9	115,304.7	1.3	4,535,685.3	25.6	423,386.9	1.3
Electricity & water	2,200,265.5	50.8	1,920,848.1	22.2	3,419,881.9	19.3	8,760,072.3	26.5

Source: Central Statistics Organization (CSO)

6.2 Industrial Sector Activities

6.2.1 Oil and Gas Activities

Reality

Oil and gas were discovered in Iraq in the early 1900s and have become among the most important sources of energy and a main source of financial resources to the national economy. This sector was affected by the events that Iraq experienced. As a consequence, oil exports fluctuated. There were also delays in investment programs and plans to address the accompanying gas that was being wastefully burned.

In 2004, daily crude oil production reached 1.995 million barrels/day. It rose to 2.285 million barrels/day in 2008, a growth of

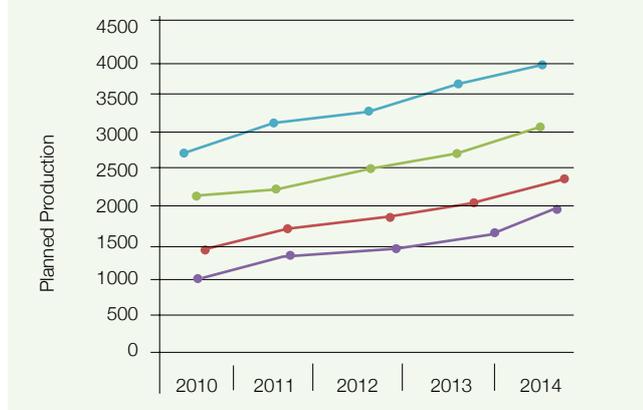
14.5 percent over levels in 2004. Despite that, it could not reach 1979 production rates, which were at a record high of 3.563 million barrels/day.

Export of crude oil increased between 2004 and 2008, in 2004 reaching 1.535 million barrels/day. Exports increased to 1.849 million barrels /day in 2008; a growth rate of 20.5 percent. During some months of 2009, oil exports reached two million barrels/day, despite damage and vandalism to the basic oil export infrastructure.

In 2004, the quantities of crude oil refined locally totaled 150 million barrels. In the years subsequent, this quantity fell to 120.9 million barrels, a decrease of 19.4 percent. Actual production capacity was also 32 percent lower than the planned production capacity in 2008. The sector was unable to meet increasing local consumption needs for benzene, white oil, gas oil, and liquid gas due to repeated loss of electrical power at oil refineries. This affected the population and its quality of life. Indeed, domestic consumption of primary oil products (benzene, white oil, gas oil, fuel oil of all types, and lubricants) fell to 18.981 million square meters/year in 2005 after it had been 20.396 million square meters/year in 2004.

Figure 6

Production Plan for Crude Oil and the Gas Accompanying Crude Oil



In gas activity, confirmed reserves are approximately 3,100 billion square meters and potential reserves are approximately 9,000 billion square meters. In 2008, the quantity of natural gas production increased 14.848 billion square meters/year from its level of 13.407 billion square meters/year in 2004. This represented an increase of 10.7 percent. However, 40.9 percent of the gas produced is burned before becoming available for use. This constitutes a significant loss to the national economy and a source of environmental pollution.

The oil and gas activity plays a vital role in overall economic performance in Iraq as it:

1. Funds 95 percent of the nation's federal budget
2. Contributed 27 percent of gross fixed capital formation in 2007 at 1988 prices
3. Helped create 55.5 percent of the gross domestic product in 2008 at current prices
4. Contributed by generating more than 95 percent of the total value added at current prices in the industrial sector in 2008
5. Employs more than 1,000 employees
6. Contributes to the production of 76 percent of Iraq's total need for oil derivatives (benzene, gas oil, white oil), which amounts to 4.467 square meters/day, and 68 percent of liquid gas needs. Inability to meet the overall need for the aforementioned products has led to no construction of high-capacity oil refineries in the past four years. All oil

refineries in the country are now old, which affects their production capacity.

Potential of Oil and Gas

1. There are huge crude oil reserves confirmed in Iraq, putting it in third place worldwide.
2. There are large gas reserves.
3. There is a competitive advantage in the crude oil activity due to the low extraction cost as compared to other oil-producing countries.
4. There is a large unmet need for oil products locally.
5. The country has approximately 80 years of experience in oil operations.
6. There is basic infrastructure and the potential to develop it, particularly in the area of ports specializing in transport of crude oil.

Challenges

1. The technology in use in some oil facilities is outdated, particularly the technology for extraction and isolation of the accompanying gas.
2. There is a shortage of experienced, qualified, and specialized personnel.
3. There is a scarcity in the financial allocations necessary to achieve objectives. In the years 2007-2009, investment allocations did not exceed 35 percent of the needs estimated for the years 2007-2010 in the national strategy.
4. Transport pipeline networks, particularly the strategic lines, are old.
5. There is an insufficient number of docks in Iraqi ports from which to export in order to handle any developments in production and exportation.
6. It is not possible for old refineries to meet environmental regulations. Further, continued burning of gas at high rates negatively affects the environment.
7. There continue to be subsidies for oil products, despite their reduction in recent years. This affects the efficiency with which refining and distilling activities are performed.

Vision

To increase production capacity in the fields of oil, gas, and oil products pursuant to international specifications, and to increase oil and gas reserves, thereby ensuring longevity of Iraq's advanced position among producers and exporters worldwide, while utilizing these resources in a sustainable manner to protect the environment.

Objectives

1. Increasing the production of crude oil from 2.285 million barrels/day in 2008 to 4.1 million barrels/day in 2014.

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This would be achieved by opening a number of fields to foreign investment in addition to national effort.

2. Increasing the quantity of exported crude oil from its current level of 1.894 million barrels/day in 2008 to approximately 3.1 million barrels/day in 2014.
3. Increasing the established oil and gas reserves.
4. Gradually increasing storage capacity for crude oil in export depots until a capacity equivalent to 5 days worth of production is reached.
5. Increasing the production of dry gas from its current rate of approximately 800 million square feet/day in 2008 to approximately 2,200 million square feet/day in 2014, using the production of the Akaz and Mansouria fields, as well as the accompanying burned gas.
6. Increasing the current refining capacity of 0.580 million barrels/day from the large refineries to approximately 1.450 million barrels/day by 2016 by building new refineries in a number of cities having a competitive edge in that field.
7. Supplementing the storage capacity for oil products to ensure attainment of stock equivalent to 40 days worth of consumption of benzene, gas oil, and liquid gas, and 100 days worth of consumption of white oil.
8. Reducing the quantity of burned gas to 150 million square feet/day instead of the 700 million square feet/day throughout 2008.
9. Protecting the environment from pollution and addressing the environmental problems resulting from oil and gas activities.

Means for Achieving the Objectives

For oil production to reach 4.5 million barrels/day in 2014 and 6 million barrels/day in subsequent years, the following must occur:

1. Developing current and discovered oil fields and offering of a portion of these fields to foreign investment to achieve this plan's objectives
2. Restructuring of public service companies in accordance with the market economy approach
3. Adhering to international standards in the fields of health, safety, and the environment (HSE) by adopting internationally accepted systems, including environmentally friendly technologies
4. Putting in place the systems and mechanisms necessary to guide oil product consumption
5. Constructing reservoir support (water injection) projects for oil fields, their consideration as priorities, and location of alternatives to river water
6. Developing current ports and constructing new ports that comply with environmental and safety requirements and have a capacity large enough to absorb exportation of specified quantities
7. Digging and repair of development wells, and construction of the necessary production facilities and supporting projects

8. Continuing implementation of suitable modern technologies in various oil and gas activities, including environmentally friendly technologies
9. Providing an important role to the private sector in the field of oil services and privatizing the company in charge of oil projects, oil product distribution, construction, and maintenance work
10. Controlling the type of oil exported and consumed locally by adopting international standards (ISO) as well as accurately measuring quantities for accounting purposes
11. Increasing environmental awareness; building an information database on the effects of oil pollution; establishing a comprehensive system for environmental tracking and monitoring in this activity; and treating the various negative environmental effects existing today
12. Developing and building capabilities.

6.2.2 Electricity Activity

Reality

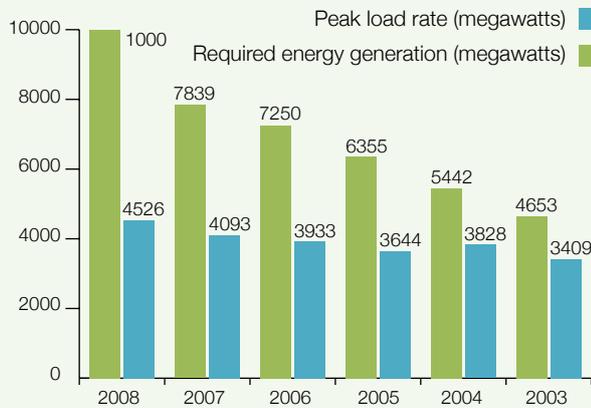
Electricity activity is considered the economy's main engine as it is used in all economic, service, and industrial activities. In addition, individual consumption of electricity is considered one of the main indicators of society's level of prosperity.

The national electricity generation rate in Iraq reached approximately 2,958 megawatts in the period prior to the Second Gulf War in 1990. Production was sufficient to meet all energy demand until 1994, but increasingly began to suffer as a result of wars, economic sanctions, the halt of development plans, and the increase in consumer energy consumption. As a result, there was an increasing shortage—the actual annual energy production rate was 3,409 megawatts as compared to a demand for 4,653 megawatts in 2003, a shortage of 27 percent.

Deterioration of the electrical energy situation continued. In 2004, electrical energy generation reached approximately 3,827 megawatts. This figure increased to 4,526 megawatts in 2008; an increase of 63 percent. In contrast, demand ranged from 5,442 megawatts in 2004 to 10,000 megawatts in 2008. So, despite the increase in production, the country still suffered from a shortage of electrical energy of 38 percent in 2008. There were many reasons behind the decline in electrical energy production, including the destruction and damage sustained by electrical energy facilities and establishments, vandalism, and theft that affected the majority of economic establishments after 2003; deterioration of security and instability, affecting workers in that vital activity; and the resulting deficit in production needs, consisting of shortage and lack of delivery of fuel and oil by-products to the majority of electricity production projects. These factors were coupled with the difficulty in acquiring the tools necessary to maintain stations and energy-producing establishments, the deterioration and decline in production efficiency, the aging of electricity production and generation stations, and the lack of water for hydroelectric stations. All of these factors led production rates at those stations to decline during the first half of 2008 as compared to 2007. The decline ranged between 24 percent and 59 percent.

Figure 7

Peak load rate and required energy generation for the years 2003 – 2008 (megawatts)



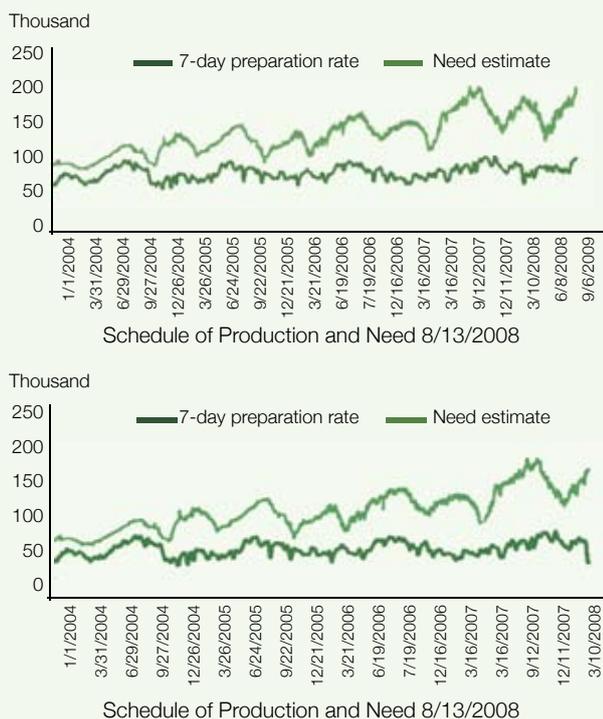
1. 26.5 percent of gross fixed capital formation in 2007 at 1988 prices. This was the result of the priority given to redevelopment and rehabilitation of this activity by allocating large sums of investments to it.
2. Creation of 0.8 percent of the gross domestic product at current prices in 2008
3. 1.5 percent of the total value added of the industrial sector in 2008 at current prices
4. Employment of more than 94,000 workers.

Potential of Electrical Energy

1. The availability of different types of fuel necessary to operate the different types of generation stations
2. The existence of large investment opportunities to cover demand for electricity for various types of consumption
3. The possibility of using solar energy in electrical power generation.

Figure 8, 9

Two-day electricity production and demand



Source: Ministry of Electricity

In light of the above, the state is seeking to plan to add new production capacity to the electrical system by increasing the number of energy generation units (fast installation) in terms of gas and diesel stations. This planning is anticipated to occur in 2009 for a capacity of approximately 1,000 megawatts. Implementation is planned for the coming years; contracts have been signed for equipping these stations with the American GE Company and the German Simmons Company, both of which specialize in this type of gas production station. Electricity and water activities have contributed the following:

Challenges

1. The antiquity of generation units and transport and distribution networks
2. The lack of sufficient quantity and type of fuel to operate consistently
3. The scarcity of water and its effects on operating hydroelectric stations
4. The difficulty in meeting environmental requirements, particularly in old projects
5. The scarcity of trained labor
6. The unstable security situation
7. The difficulty of meeting financial obligations, which hinders implementation of investment plans
8. Subsidized pricing, which creates wasteful consumption of electricity.

Vision

To enhance the electrical system and its three activities (production, transport, and distribution), close the gap between electrical energy production and demand, and provide all consumer types with consistent energy.

Objectives

1. To increase production capacity in the system so as to meet the increasing demand for electrical energy by constructing additional units at gas, steam, and diesel production stations
2. To enhance Iraq's electrical energy consumption from an average of 1,100 kilowatts to 3,700 kilowatts
3. To secure a reserve to face increasing demand for energy in the future, estimated to increase at a rate of 10 percent annually
4. To secure a reserve in generating capabilities ranging between 5 percent and 10 percent

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5. To improve the performance of the electrical system and stop its decline by performing repair works and comprehensive (production, transport, and distribution) improvements
6. To improve the quality of services to all types of consumers (domestic, commercial, industrial, agricultural, and government), and to improve the speed of connecting service in new residential neighborhoods.
7. To stabilize the electric current and increase reliability.
8. To develop and build upon employee abilities, including developing abilities in the environmental field, thereby helping realize the principles of more environmentally friendly production
9. To reduce environmentally harmful gas emissions and noise pollution in existing and new projects, and use environmentally cleaner technologies in generation and transport of energy.

Means for Achieving the Objectives

1. Focusing on increasing production by building new stations based on sound economic principles
2. Repairing existing stations, in addition to developing and resolving organizations' problems by conducting economic and technical studies
3. Expanding and developing transport networks and resolving bottlenecks
4. Encouraging implementation of Investment Law No. 13 of 2006 to coordinate work with foreign and domestic investors and coordinate work with national investment associations in the provinces
5. Continuing to draft guidance policies to organize demand for energy by issuing new instructions as regards energy usage rates, while considering the needs of marginalized and low income classes
6. Continuing the project of electrical energy interconnection with neighboring countries
7. Expanding use of alternative and renewable energy, including solar energy
8. Complying with international standards in the fields of health, safety, and the environment (HSE) by following internationally approved regulations
9. Setting strict monitoring mechanisms with respect to household, consumer, industrial, and imported appliances so as to ensure high and economic efficiency in energy consumption.

6.2.3 Activity of Conversion and Extractive Industries (Excluding Oil)

Reality

This activity has witnessed a decline in its contribution to the gross domestic product, when measured at current prices, of 1.7 percent in 2008 after it had been 6 percent in 1979, increased to 13.9 percent in 1988, decreased to 3.8 percent in

1990, and continued to decline to 1.5 percent in 2001.

As regards its contribution to domestic output in the field of industrial activity, at current prices, it totaled 3 percent in 2004 and 2008.

There are many reasons for the decline in the contribution of conversion and extractive industries (excluding oil). They include the decline in production capacities due to the security situation; the existence of an atmosphere conducive to flooding the market with cheap products; failure to promulgate laws governing industrial activities in light of new developments; scarcity of equipment necessary to generate electrical and gas energy; exposure of public sector production facilities to destruction, vandalism, and theft; shortage in the funding necessary to repair them; and the antiquity of industrial company production lines. The decline was also caused by the increase in the number of workers since 2002, which resulted in inflated worker numbers and an increase in inefficient labor. All of these factors have had a negative impact on production costs and made it difficult to compete. It is worth noting that many private sector establishments, nearly 70 percent, have shut down operation for many reasons, most important among them the security situation and the inability to compete with imports. This activity has contributed to the following:

1. 1.3 percent of gross capital formation in 2007 at 1988 price
2. Creation of 1.7 percent of the gross domestic product in 2008 when measured at current price
3. 3 percent of the total added value in the industrial sector for 2008 at current price
4. Employment of more than 193,000 employees.

This activity contributes to producing 10 percent to 40 percent of Iraq's total need for conversion industries. In the chemical industry, this sector produces approximately 40 percent of actual need; 30 percent of the need for textile industries; and 12 percent of the need for construction industries.

The Private Sector's Role

The transitional period, which began after 2003 and continues to date, has witnessed the demise of the private Iraqi sector. This occurred as a result of the stoppage of private industrial projects due to destruction; increased production costs; flooding of the local market with competing imported products; absence of security; and the targeting of businessmen and their families, leading them to escape to neighboring countries.

In the area of the conversion and extractive industry activity, the private sector contributed 1 percent of the gross domestic product in 2008. Despite the sector's importance in domestic economic activity, its overall investment remains very small. Indeed, its contribution to fixed capital formation capital did not exceed 0.4 percent in 2004 at 1988 prices. The lack of security and an appropriate investment environment, and the weakness of the financial situation and the banking system may be the reasons behind the private sector's diminished role and reduced importance in Iraq's development.

Potential in the Field of Conversion Industries

1. The abundance of natural resources in most of Iraq's provinces
2. The abundance of domestic markets for the conversion industry
3. The abundance of the requisite skilled labor
4. The country's growing need for different industries, particularly the construction industry, in the next phase of rebuilding Iraq.

Challenges

1. The difficulty of competing in a market flooded with cheap, low-quality products
2. The need to amend current laws and promulgate new ones that serve the industrial sector
3. The need to activate the Central Agency's role in the areas of evaluation and quality control, in its capacity as a regulatory agency, to control quality of local and imported products
4. The need to reform the banking system
5. The need to draft central regulations to address the inflated number of employees working in public sector companies
6. The antiquity of production lines and the non-conformity of current projects to environmental requirements and specifications
7. The scarcity of electric energy and the fluctuation in voltage levels, which negatively affect production capacity
8. The limited quantity of natural gas prepared for some companies that rely on it as a primary material in their production process.

Vision

To achieve industrial growth that contributes to diversification of the national economy by moving in the direction of a market economy, to manage industrial operations, and to build partnerships with international companies, the private sector, and domestic and foreign investors.

Objectives

1. To significantly increase the conversion industry's contribution to the country's gross domestic product as public companies have been classified
2. To revamp economically sustainable public companies
3. To strengthen the private sector's role in the conversion industry
4. To work on achieving self-sufficiency or to increase the number of public companies to 12 during 2010, 16 during 2011, and 19 by the end of 2013
5. To achieve a complimentary relationship between public and private industrial sectors, as well as other sectors by creating small and medium-sized projects to enhance existing industrial companies and their products and to create new employment opportunities
6. To reconstitute 12 of the Military Industrial Agency's dissolved companies and convert them to civilian industry
7. To increase the non-oil extraction activity's contribution to the gross domestic product
8. To work on building industrial complexes in at least five provinces, to provide transparent mechanisms for granting bank loans to the private sector, and to speed up the process for issuing project permits
9. Continue building on the consumer protection document that has been drafted, as well as the Competition Law, the Anti-Trust Laws, and the Iraqi Producer Protection Law. In addition, the following laws have been set up: the Law for Establishment of Industrial Cities, the Trademark and Geographical Indicator Law, the Economic System Law, and the Mineral Investment Law. Moreover, a final draft has been prepared to amend the Private and Mixed Sector Investment Law No. 20 of 1998. Finally, a draft of the Privatization and Roadmap Law was prepared in September 2007.
10. To develop human abilities and cultivate the necessary skills to manage the conversion operation
11. To improve the environmental reality for existing industries, ensure that new projects comply with new environmental policies, and increase environmental awareness in industrial projects.

Means for Achieving the Objectives

1. To improve public company performance levels by classifying public industrial projects into three categories:
 - Companies that attract investment and have the ability to be self-sufficient immediately.
 - Companies that require reform, operational improvements, and increases in production capacity to attract investment. This category of companies is expected to remain until the end of 2012.
 - The small number of companies that require a cost-benefit analysis to determine whether they should continue to operate. Some of these companies may also need to be broken up and restructured, while others may not be viable and may need to be re-classified or have the course of their operations altered.
2. To restructure companies and industries so as to move toward a market economy. In that regard, a number of contracts were concluded to restructure and modernize the laboratories of existing public companies that are attractive to investors. These contracts are based upon a partnership with specialized international companies as well as the private sector. From a technical and economic standpoint, it is important to continue in this direction whenever possible.
3. To expand the private sector's role in industrial development and encourage it to establish companies in partnership with the public sector.

Industry and Energy

4. To move toward establishing partnerships with technologically advanced international companies.
5. To focus on industries with regional and international competitive potential.
6. To develop and expand industrial research and development centers in coordination with the Ministry of Science and Technology and the universities.
7. To reinvigorate geological survey and mineral investigation operations, as well as locate available natural resources for the purpose of exploiting them using modern technology.
8. To establish the industrial investment plan and coordinate with councils and provinces in accordance with said provinces' natures, the availability of natural resources therein, and their competitive advantage. Also, to promote the construction of new industries through local and foreign investors, create employment opportunities, and develop national industry.
9. To draft laws that will contribute to the creation of an environment conducive to investment, whether domestic or foreign, and to promulgate consumer and producer protection laws. (There have been a number of draft laws prepared [the Consumer Protection Law, the Competition Law, the Anti-Trust Law, the Iraqi Producer Protection Law, the Industrial City Law, the Trademark and Geographical Indicator Law, the Economic System Reform Law, the Mineral Investment Law, the final draft amending the Private and Mixed Sector Investment Law No. 20 of 1998, and the Privatization and Roadmap Law of September 2007]).
10. To provide electrical power to industrial complexes and large factories to ensure the continuity of their operation. This would be achieved by building electrical stations nearby
11. To invest in the environmental aspect to address the environmental problems caused by existing industrial projects
12. To withhold from establishing any industrial project unless it ensures protection of the environment and to require new industrial projects to receive a passing grade on their environmental consequences study before being allowed to move forward
13. To use more environmentally friendly technologies to operate new and existing projects.
14. To find practical and humane solutions to address the problem of the ineffective labor employed in industrial companies by:
 - Preparing a database containing data on surplus labor in all public companies
 - Connecting surplus labor with human resource development centers in the provinces that would, in turn, put them in touch with the Ministry of Labor where training would take place, where the surplus labor's potential would be developed, and said labor could be used in the economic units located in the provinces
 - Finding appropriate solutions to protect the rights of surplus labor and ensuring receipt of social protection by groups that cannot be trained for alternative work.

6.2.4 Research and Development Activity

Vision

Working to keep up with scientific and technological advances taking place worldwide so as to improve scientific research and transfer technology to Iraq. Also, it is vital to work to activate the role of research and development in national development programs, thereby transforming the Iraqi economy into an economy with a vast knowledge base so as to narrow the digital divide between Iraq and the developed world.

Objectives

1. To expand construction of basic infrastructure associated with research, development, and human resource development
2. To select and utilize advanced technology, while orienting it to serve society
3. To build technology incubators in various industrial fields.

Means of Achieving the Objectives

1. Supporting and funding scientific research, sponsoring scientists and researchers, establishing a mechanism to improve the quality of research centers, coordinating among research centers at the national and international levels, and promoting their role in national development programs
2. Expanding the scope of Iraq's representation at international gatherings and organizations related to science and technology
3. Enforcing laws related to science, technology, innovation, and intellectual property rights, as well as sponsoring researchers
4. Fostering international cooperation with science and technology associations and scientific research organizations, as well as transferring and utilizing technology.

- 1 Using sprinkling systems for 250 thousand donoms, and a cost of \$65 m.

Chapter Seven

Infrastructure



7.1 Transportation Sector

7.1.1 Previous Policies

Before presenting and evaluating previous transportation and communications sector policies, and before evaluating the current reality and diagnosing the problems and challenges facing growth and development, it is helpful to highlight the most prominent features and characteristics that distinguish it from other economic sectors. These must be considered when determining the means and requirements to improve its reality. The most noteworthy are as follows:

1. The transportation and communications sector is important in the Iraqi economy because it directly affects people's lives every day. People need transportation and communications to complete their daily needs and other activities.
2. The sector is closely intertwined with other economic sectors, has a direct impact on their growth and development, and a direct and significant impact on the nation's economic integration. This makes it impossible for other economic sectors to develop and grow without an infrastructure and appropriate and efficient services from the transportation and communications sector. Every kind of land use requires a network of suitable roads and transportation.
3. The sector's infrastructure extends over long distances. Indeed, most sector projects include more than one area and more than one province. Thus, this sector's projects require large investments for construction and maintenance.
4. There are many possibilities for the (Iraqi and foreign) private sector to participate and invest in the implementation and operation of this sector's projects.

In previous decades, particularly in the 1960s and 1970s, the strategy for developing the transportation sector was characterized by investing in all available modes of transportation, including road, rail, maritime, water, and air, as well as developing these means based on social and economic activity requirements. Significant work was performed on roads. Specifically, most main and secondary roads were resurfaced, secondary lanes were added to main and secondary one-lane roads, and a large number of railroad crossings were eliminated. Further, phased construction of rural roads began and several bridges were built.

During the 1970s and 1980s, national development plans strengthened the highway networks connecting Iraq to neighboring countries, such as the one connecting Iraq with Syria and Jordan and the one connecting the country to the Arab Gulf states. This was done by constructing Highway No. 1 and preparing a design for Highway No. 2, which would run through Baghdad, Samarra, and Mosul, and then into Turkey and Syria. In addition, a comprehensive transportation plan for the city of Baghdad was completed, which recommended construction of an underground metro and several circular roads and bridges, sections of which were implemented— the Mohammed Al-Qasim Road and the Saladin Alayoubi Road,

for example. However, as for the underground metro itself, only the designs were completed.

In the 1960s, increased foreign trade and congestion at Al-Maaqal port focused development attention and plans on increasing the number of ports and docks. A new port was built closer to the Arab Gulf region at Umm Qasr in 1965, and able to receive larger ships and boats.

In the 1980s, development plans focused on strengthening the role of the industrial city in the Basra province by constructing the Khor Al-Zubair port as a main pillar of this city. It consisted of 12 docks used by the iron and steel plant, as well as to import iron ore, export sponge iron, and load chemical fertilizers and general cargo. During this period, national development plans also focused on constructing the maritime dockyards necessary for ship maintenance and repair.

In railroads, in the 1960s, development plans converted metric railroads to standard railroads. In the 1970s and 1980s, national development plans included construction of a number of high-quality railroads such as the Baghdad–Al-Qaim–Akashat project to connect the phosphate and fertilizer production center with Iraqi ports in Basra; the Kirkuk–Biji–Haditha project; and part of the Mussayib–Karbala–Najaf–Samawah arc line. This period also saw a large number of locomotives, passenger trains, and cargo trains imported. Development plans also included preparing designs for strategic megaprojects such as the circular Baghdad–Cote–Ammara–Basra railroad line, the Baghdad–Bagouba–Kirkuk–Irbil–Mosul railroad line, the Mussayib–Karbala–Najaf–Samawah arc line, the Mosul–Zakho railroad line, and others.

In civil aviation, in the 1970s and 1980s, the Baghdad and Basra international airports were built. In 1979, transition to the new international airport in Baghdad was finalized, even though its facilities were not completed, and the Iraqi air fleet was expanded and modernized. During that year, by opening long-distance lines, Iraqi air capabilities grew from a service network with limited geographic scope to one with international scope. The volume of passengers, cargo, and regular and political mail transported by air steadily increased. The year 1979 was also characterized by steady increase in aviation revenues. Indeed, for the first time that year, revenues exceeded costs and civil aviation went from deficit to surplus—the result of the state providing major material and moral support in the form of large investments that funded the purchase of aircraft and ground equipment, the training of an elite group of pilots and technicians, and the implementation of other service projects.

In the 1970s, national development plans included development and expansion of communications projects, including construction of communications centers and telephone switches. Further, ground telephone networks for land-line use and coaxial cables were extended to interconnect switches and cities.

The wars of the early 1980s and the economic sanctions commencing in the early 1990s diverted attention from modernizing the transportation and communications sector, limiting major achievements in this field. This caused the sector to lag behind regional and international development in all measures, leaving it unable to respond efficiently to human needs and the requirements of economic activities. The infrastructure developed in the 1960s and 1970s became a burden to the Iraqi economy because of the large financial resources needed to repair and maintain it.

Because of the transportation sector's crucial role in provision of key services to the population and to all economic activities, and in an effort to upgrade its performance level, Iraq began focusing on this vital sector in 2003. Specifically, in cooperation with Italian counterparts, the MoP began preparing a comprehensive transportation plan for Iraq: the Iraq Transport Master Plan (ITMP). Preparation of this plan continued from mid-2003 to the end of 2005. Representatives from all departments and other entities involved in transportation sector activities—roadways, railroads, ports, and civil aviation—participated in its preparation.

This comprehensive transportation plan included a complete survey of transportation sector activities, as well as an assessment of state of these activities, ways to improve them, and the funds needed to do so. The plan also included all projects required for transportation activities for the next 20 years, including crucial and strategic projects. Cost estimates for these projects were estimated and an implementation schedule was prepared. We can rely on the comprehensive transportation plan as a long-term plan, and can use some of its projects for the purposes of mid-term plans, including the 2010-2014 five-year plan. Because of the security conditions that prevailed during the plan's preparation, and because it does not cover the entire transportation network in Iraq, it should be updated after extensive surveys of the network and collection of all data necessary for the update within a context of appropriate security conditions, and of a network free of roadblocks and temporary barriers that significantly affect its performance.

The National Development Strategy (2007-2010) indicated that transportation and communications services, mail, and international network services all lag far behind expectations. This required strengthening the transportation and communications network to raise service quality and efficiency in all provinces, requiring significant investments as well as administrative and organizational structure changes. Iraq can address the sector's problems by introducing the latest technology in this area, and by creating the appropriate environment by adopting appropriate policies and developing an appropriate regulatory framework.

The National Development Strategy (2007-2010) specifies the procedures necessary to advance transportation sector activities (excluding road and bridge activities) as follows:

1. Continued dredging of the Umm Qasr port and the surrounding areas
2. Removal of sunken vessels in Shatt-Al-Arab and the Umm Qasr port
3. Preparation of a plan to increase the efficiency and efficacy of institutional procedures of ports and inland waterways
4. Exploration of the potential for developing truck transport and traffic lines
5. Repair, renovation, and maintenance of railroad stations
6. Modernization of training centers to enhance the skills of railroad workers
7. Preparation of a railroad strategy to assess the current situation in order to open the door for the private sector to provide services
8. Development of airports and a civil aviation strategy and preparation of a comprehensive plan to organize services and future activities, including the possibility of assigning airport management to the private sector
9. Development of programs to privatize some activities in the sector, particularly in the fields of communications and air, land, and maritime transport
10. Retraining of supervisory and operations staff, particularly in stalled activities such as civil aviation and maritime navigation.

In the area of communications, the National Development Strategy (2007-2010) indicated that there had been improvements in telephone communications since 2004: the number of landline subscribers grew from 794,198 to 2,800,000 in June 2005. Further, the number of internet subscribers more than doubled and the number of cell phone subscribers jumped from 488,966 to 2,500,000. In addition, satellite television equipment was extended to most of the population, and cell phone networks operated in the major urban areas. The 2007-2010 National Development Strategy identified the actions necessary to advance the communications sector as follows:

1. Rebuilding and expanding existing switches and local distribution networks, and supervision of the civil work required to achieve telephone penetration of 3.3 million subscribers in 2007
2. Construction of a modern, integrated, long-distance communications network ensuring international communication
3. Rebuilding of the postal system, including rehabilitation of postal services and existing buildings to put Iraq on par with other countries.

In order to achieve transportation and communications sector objectives, the strategy calls for the allocation of between 11,000 billion and 12,000 billion dinars per year. However, the

actual allocation has not exceeded 4–10 percent of the planned amount each year. This rate did not allow for achievement of strategy objectives. This shortage of funds was compounded by insufficient time allotted to developing the strategy; limits on its scope to identifying wholly comprehensive sector targets for communications, roads, and bridges; poor implementation follow-up; the deteriorating security situation; failure to prepare the private sector to invest in this sector, as was done with other sectors; and staff's inability to adapt to the instructions to conclude new contracts.

7.1.2 Transportation Sector

The transportation sector consists of roads, bridges, passenger transport, cargo transport, railroad transport, ports, maritime shipping, and civil aviation. The National Development Plan will address the state of, vision and objectives for, and means of achieving the objectives for each of these activities. In general, the sector seeks to build an integrated, efficient, and reliable transportation network; ensure balanced use of its different systems, which correspond to spatial distribution of the population and economic activities; and enhance the advantages of Iraq's geographical location in this field. This vision can be achieved by:

1. Increasing the current transportation network's efficiency and capacity
2. Integrating the different transportation systems
3. Enhancing the efficiency and performance of the transportation sector's institutions, facilities, and public companies, as well as enhancing its efficiency in the areas of management and operation
4. Developing and promoting cargo transport by railroads, and protecting the road network from damage
5. Reducing accidents within the transportation network
6. Reducing travel time and providing shortcuts away from city centers
7. Contributing to strengthening Iraq's economic independence
8. Reducing transportation costs
9. Strengthening Iraq's geographical location in transportation and the transit trade
10. Increasing the sector's contribution to the gross domestic product
11. Strengthening the private sector's role in the different transportation activities, particularly as regards operating procedures and service provision.

7.1.2.1 Road and Bridge Activity

Reality

This activity falls within the purview of the General Authority for Roads and Bridges within the Ministry of Construction and Housing, which is responsible for constructing and maintaining bridges over rivers and roads outside the cities, including highways, arterial roads that connect province centers, border

crossings, secondary roads that link village districts, and rural roads that connect villages and the countryside to secondary and arterial roads.

The total length of the external road network (beyond the boundaries of municipalities and the Mayoralty of Baghdad) is approximately 48,000 km, comprising:

- Highways: 1,084 km
- Arterial roads: 11,000 km
- Rural roads: 10,000 km
- Border roads: 11,000 km
- Secondary roads: 15,200 km.

In addition, there are 1,247 concrete and steel bridges and 35 floating bridges scattered throughout the country's provinces. This network does not meet the country's needs, particularly with respect to rural roads, which are a fundamental cornerstone of rural community development. According to international standards, each 100 inhabitants/km² needs 1 km/km² of roads; road density in Iraq stands at 0.18 km/km². This rate must be increased to 0.75 km/km², that is, the road network needs to be 240,000 km to properly serve Iraq's population of 57 inhabitants/km² (per 1997 statistics). If one excludes uninhabited desert areas, the same criterion would require the addition of 20,000 km of new roads.

Before 2003, Iraq's external road network was relatively good in terms of efficiency and capacity. However, most of it suffered extensive deterioration, destruction, and damage during the 2003 war its aftermath, the result of military operations and sabotage, as well as the lack and scarcity of emergency and periodic maintenance operations. This reduction of the road network's efficiency and capacity was compounded by loss of and damage to instructional signs, warning signs, and directional signs on the outer roads and highways. Repair of the existing road network is accordingly one of the plan's priorities in the area of road and bridge activities.

Near total cessation of railroad activities after 2003, along with reliance on the road network to transport cargo, put further pressure on the road network, as did lack of control over allowable axle and vehicle weights— which contributed to destroying and devastating large portions of the network.

In addition, there was an increase in the number of vehicles entering the country after 2003. This led to increased vehicle circulation among safe provinces, thereby adding pressure on the outer roads, particularly single-lane roads. This was exacerbated by poor traffic control, cessation of issue of driver's licenses, and poor control of existing driver's licenses and their holders, all of which led to an increase in the number of accidents, particularly fatal ones.

The deteriorating security situation after 2003, along with the ensuing social, economic, and security effects, led to a decline in the efficiency of road work quality control. As well, the increase in fuel and asphalt prices during that time led to a significant increase in the cost of implementing and maintaining road projects. This was accompanied by worldwide price increases at the end of 2007 and during 2008. These factors

led to a halt in most projects that had been postponed even before the increase in the prices of oil derivatives and asphalt. Such projects were not completed during that period because contractors were unable to keep pace with rising work-related costs. This situation persisted until September 11, 2007 when a mechanism was adopted to compensate contractors for the abnormal increase in those costs.

Problems and challenges facing road and bridge activities:

1. Most cargo is transported over the road network, as opposed to the railway system, thereby applying significant pressure on the network and contributing to its deterioration.
2. There is no control over loads and vehicle axle weights which leads to destruction of the road network.
3. There are few connecting roads between provinces and cities.
4. There are few circular and bypass roads in the cities.
5. There are problems acquiring rights of way, including the objections of owners, rural inhabitants, and farmers.
6. There is a need for significant investments to rehabilitate and construct new projects.
7. The quality control system is weak.
8. Same-level railroad crossings, contributing to traffic and congestion, are prevalent.

Vision for Road and Bridge Activities

Iraq will have a road network with a balanced hierarchy that integrates with the other transportation systems while ensuring reduced travel time and cost, greater security, and reduced negative environmental impacts.

Objectives

The objectives for road and bridge activities during the plan period focus on two axes.

1. The first axis consists of:
 - Improving the condition of the current road network by repairing existing roads and reconstructing bridges affected by the war, military operations, and sabotage, as well as installing instructional, directional, and warning signs
 - Performing periodic maintenance on the existing road and bridge network, using modern and advanced techniques that would more quickly and economically implement repair and maintenance procedure, including the cold in-place asphalt pavement recycling technology recently approved in Iraq.
2. The second axis consists of increasing the network's capacity and its level of user safety and security, and protecting it from damage, by:

- Completing the remaining portions of highways previously constructed, and completing links between these roads and city centers that had not yet been linked thereto
- Constructing new highways, particularly Highway No. 2, to link urban centers and complete the link between Iraq and neighboring countries that have not been linked by highways to date
- Continuing to construct secondary lanes on arterial roads and one-lane roads, particularly those that have reached maximum capacity
- Expanding construction of crossroads among the provinces, thereby reducing travel time
- Expanding construction of bypass roads that reduce congestion in cities and limit entry of through-traffic to city centers
- Continuing to implement the plans' remaining stages to replace floating bridges with fixed bridges
- Continuing to eliminate railroad crossings
- Furnishing outer roads with instructional, directional, and warning signs
- Protecting the road network from excessive weight by constructing weigh stations to detect and deter vehicle weights and axle loads that exceed the allowable limits
- Continuing the program of constructing rural roads and increasing their reach to serve the greatest number of rural villages and agricultural projects and ensure their connection of agricultural production centers with markets.

Means of Achieving the Objectives:

1. Directing investments in a manner commensurate with the importance and social and economic role of road and bridge activity to ensure rehabilitation of damaged roads and bridges, and constructing all types of new roads, including highways, arterials, secondary roads, and rural roads
2. Developing railroad transportation to reduce the volume of cargo transported over the roads
3. Passing new laws or amending current laws to impose tolls for use of main roads, arterials, and bridges to ensure appropriate funding for periodic and continuous road and bridge maintenance
4. Improving quality control during road and bridge work by providing necessary and sufficient laboratories to run the tests associated the work. Controlling vehicle weight and axle loads on existing road and bridge projects by constructing weigh stations. .
5. Introducing modern and cost-effective technologies to repair and maintain roads, and providing means for their success
6. Strengthening the private sector's role in service provision.

The Private Sector's Role

Both the domestic private sector and foreign investment can play a role in implementing the infrastructure and highway axes, provided free roads and bridges are available for these axes. The private sector can also actively participate in providing services such as building comprehensive rest areas (pursuant to guidelines and designs to be identified in agreement with the General Authority for Roads and Bridges). It is necessary for the state to act as a regulator and supervisor in all stages (design, implementation, operation, and service provision).

7.1.2.2 Passenger Transport and Cargo Shipping Activity

Reality

The Passenger Transport Agency was created in 1938 to transport passengers within Baghdad only, operating under a central funding system. It was transformed into the General Company for Passenger Transport, pursuant to Company Law No. 22 of 1997, and operated as a self-financing company based on its activities listed in the company's bylaws no. 10 of 2000. The company aimed to transport people by bus within the city of Baghdad, between provinces, and between Iraq and neighboring countries. The company also aimed to provide internal transportation services. The General Company for Passenger Transport merged with the General Company for Delegations Transport. It was renamed the General Company for Passenger and Delegations Transport by Council of Ministers decision number 338 of 2008 to make delegations transport a department within the company.

The General Company for Passenger Transport had a large fleet of buses and a number of associates to operate that fleet. The military operations and looting accompanying entry of foreign troops into Iraq caused the company to suffer significant material damages.

Public passenger transport activity declined in 2003 and thereafter. There was very limited intercity and intra-city transport, and it was not as organized as before.

In 2008, public passenger transport activity gradually regained an organized structure, with buses running between safe cities day and night. Urban transport resumed in Baghdad in cooperation with the Baghdad Province Council, with lines running between universities and the city's main areas. It is hoped that the experiment will be expanded to the remaining provinces.

In June 2009, the General Company for Passenger and Delegations Transport had a total of 1,234 buses, of which 593 were working, 338 were idle, and 303 were scrapped, as compared to a total of 1,633 buses in 2002. On the same date, there were also 30 working lines within the city of Baghdad, of which 10 lines were run to transport students, 9 were run within provinces, and 14 were run between Baghdad and the provinces.

The destruction that befell the passenger transport fleet, along with administrative chaos, reduced the number of transported passengers from about 130 million in 2002 to about 6.5 million in 2006.

After 2003, intra-city and intercity transport was provided almost entirely by the private sector. Due to successive increases in the prices of oil derivatives, including gasoline and kerosene, the private sector raised prices for these services. These increases greatly burdened the people, particularly students, low-income individuals, and the poor.

On June 30, 2009, the General Company for Passenger and Delegations Transport had a total of 5,641 operators. More than half of them were not needed; this affected the company's efficiency.

As the security situation has improved, demand for intra-city and intercity passenger transport increased. Given the limited scope of rail activity at this time, bus transport is the currently available solution.

Implementing public transport projects such as metro, tram, or suspension trains within cities, and particularly Baghdad, to rapidly and safely provide public transport services and reduce congestion and pollution, has become an urgent necessity.

Even though the prices charged by the General Company for Passenger and Delegations Transport have increased, they continue to be much lower than private sector prices. In addition, the company's buses are modern, air-conditioned and safe, and the company provides some services during the trip. For these reasons, individuals prefer public buses over private buses.

Challenges

1. Limited financial allocations
2. Continued security instability in some cities and provinces, and continued presence of security barriers in main and secondary streets
3. Limited public intra-city and intercity bus fleet
4. Significant laxness in public transport administrative and operational systems and resulting decline in performance
5. The presence of an unregulated private sector using vehicles that do not meet the required specifications and pollute the cities' environment.

Vision

Ensure rapid, sustainable, and environmentally friendly intra-city and inter-city public transport to low income groups, students, youth, and the poor.

Objectives

1. Providing about 1,500 buses that run 130 routes in Baghdad, Table 34 shows the objectives for the passenger transport activity as represented by the number of buses to be provided during the 2010-2014 five-year plan for purposes of internal and intercity transport.
2. Preparing studies and designs for the Baghdad Metro project and planning to commence construction during the final years of the five-year plan

3. Upgrading the passenger intra-city and intercity transport fleet, using modern, comfortable, and environmentally compliant buses
4. Providing special rates for students, youth with special needs, and social security programs members
5. Providing significant opportunities for the private sector in passenger transport and providing necessary support, particularly in terms of ensuring subsidized transport means at favorable credit terms.

Table 34 Quantitative Objectives for Passenger Transport as Represented by the Number of Buses To Be Provided During the 2010-2014 Five-Year Plan for Internal and Intercity Transport

Year	Internal transport			Intercity transport (passengers / international / tourism)
	Buses	Double-deck	Single-deck	Buses
2010	-	-	100	-
2011	-	-	100	100
2012	-	100	-	100
2013	-	100	-	100
2014	-	-	-	100

Means of Achieving the Objectives

1. Conducting deliberations about setting an implementation schedule for the Baghdad Metro project as a long-term solution to the passenger transport problem, as well as to ease traffic congestion in the city of Baghdad and improve the city's environment
2. Supporting and reorganizing the private sector within the field of passenger transport, as well as providing the sector with the infrastructure to do business, particularly in the area of high-quality passenger transport
3. Ensuring private sector transport at favorable terms and defining operating life to ensure safety, economic, and environmental sustainability.

The Private Sector's Role

In many countries worldwide, the state subsidizes public transport in general and intracity passenger bus transport in particular, irrespective of whether operated by the state or the private sector. The only exceptions are a few countries in which these forms of transport are profitable. Thus, the scenarios proposed for operating intracity passenger transport during the five-year plan are:

1. The state continues operating and subsidizing passenger bus transport at prices that suit students, low-income people, and the poor.
2. The state continues operating passenger bus transport and sets profitable rates and offers subsidized pricing to seniors, children, and students.

3. The private sector is provided the opportunity to operate passenger bus transport and set rates, while the state continues to regulate, supervise, and define bus quality and specifications. The state would also provide subsidies for certain social segments such as students, seniors, people with special needs, and those covered by the social protection system.

Over the long term, the state should completely stop operating the passenger transport system and transfer that task to the private sector. The state should also limit its role in controlling, monitoring, and defining vehicle quality and specifications, and setting applicable tariffs.

Ground Transport of Cargo by Truck

Iraq used to have a large truck fleet for cargo transport, which belonged to the Ministries of Transportation and Trade. This fleet was looted and damaged, and only a few trucks remain for what is required.

Within this sector, management systems are antiquated and the workforce far exceeds needs. The General Company for Land Transport currently has about 4,350 workers, a figure several times greater than necessary. This has significantly affected its cost and operating efficiency.

The five-year plan for this sector is tending towards transferring all activities to the private sector—after evaluating its capacity and capabilities—to take advantage of its highly flexible management style. An alternative would be to create a partnership between the public and private sectors for this activity. This would require:

1. Strengthening the state's role as regulator and supervisor of cargo ground transport via trucks
2. Developing railroad transportation in order to protect the road network and spare it further damage, as well as to benefit from the large savings realized when transporting cargo by train.

7.1.2.3 Railroad Activity

Reality

Railroad transportation is considered a vital activity within the transportation sector for both passengers and cargo. Particularly for cargo, rail provides long-distance transport at a relatively reasonable cost as compared to other means.

Iraq is considered a pioneer in the region in using railroads for transportation; the first train was put in operation in June 1914 and an extensive rail network covers vast portions of the country today.

Early on, the railroad network was heavily used to transport passengers and cargo. However, as the road network grew, a large share of railroad transport moved to road transport, particularly cargo.

An effective railroad network is crucial to development; it will contribute significantly to protecting the road network, particularly highways, from the damage caused by heavy truck traffic.

In 2008, Iraq's railroad lines totaled 2,295 km, of which 1,901 km were main lines, and 394 km were secondary lines. The number of locomotives in operation was 106, down from the 494 originally constructed. There were 43 transfer locomotives, down from the original 145, 65 passenger cars out of the original 250, and 2,460 cargo transport trucks out of the original 10,266. In 2008, the total number of passengers was 107,000, and the total weight of cargo transported was 257,000 tons.

Table 35 shows the total activity of the Iraqi railroad system for the period 1979–2008. It should be noted that despite increasing the length of railroad lines during this period, railroad transportation activity fell dramatically from millions of passengers and millions of tons of cargo annually to hundreds of thousands. This resulted in a decline in the activity's economic and financial performance, as shown.

Year	Length of railroad lines (km)	Number of passengers ('000 passengers)	Transported cargo (1000 Tons)	Income (1000 Dinars)	
				Passengers	Cargo
1979	1645	3351	6493	2286	20,609
1988	2389	3865	6109	8124	18,990
2002	2272	1248	5227	1131	22,687
2004	2272	63	439	57	4977
2006	2272	4	165	15	1049
2008	2295	107	257	-	-

Large portions of the current railroad network are old, outdated, and have defective signaling and communications systems. This leads to lower operating speeds and endangers the safety of passengers and cargo. Accordingly, some lines are being renovated to upgrade them, increase their operating speeds and improve their condition. Work is also being done to double up single railways to increase capacity and ensure a higher level of safety.

In addition, a new wireless communications system is being used between stations and locomotives, replacing the old wired system. It includes a global positioning system to keep track of train movements and determine their locations.

Most railroad lines in operation use the aforementioned wired standard operating system. Lines currently in operation are Baghdad–Basra, Baghdad–Samarra, Mosul–Rabia, and Baghdad–Fallujah. It is hoped that the remaining portions of these lines will gradually become operational as the security situation improves and the lines are renovated.

Work is currently being done to double the Baghdad–Basra line, the Baghdad–Mosul line, and the Hammam Al-Ail–Sabonia–Rabia line, and to modernize and renovate existing

lines to increase their efficiency, increase operating speeds, and improve line capacities.

Capabilities

Railroad transportation offers significant opportunities for development and thanks to Iraq's size, location in the region, extensive rail network experience, and infrastructure. Most imports enter, and future exports will depart from, its southern ports and the ports of its neighboring countries. The transit trade that can be revitalized takes place through these outlets as well. Indeed, transporting cargo over long distances and in large quantities would be more efficient and economical by rail. The transportation network connecting East Asia and Europe can be integrated only by passing through Iraq. This will require the country to upgrade its railroad network in particular, and its transportation infrastructure throughout, as rail is the most suitable and economical mode of long-distance transportation, irrespective of whether Iraq wants cargo to go through its own ports or those of neighboring countries.

The amount of transit cargo expected to be transported through Iraqi ports to Turkey, Syria, and Europe is estimated to be 35 million tons annually in a normal case scenario, and 60 million tons in a best case. The feasibility study performed on the large port of Al-Faw indicates that handling this quantity of transit cargo will require construction of a special double railway. Cargo railway networks in Syria and Turkey will also be required. Measures necessary to achieve political understanding and trade liberalization in Iraq and the other countries must be taken.

Expanding the railway network will help alleviate the pressure on cargo transport currently using highways and inter-city arterial roads. This will reduce damage to roads caused by large loads and in many cases, excessive axle loads.

Challenges

1. Competition between passenger/cargo transport and railway transport—particularly since the expansion of Iraq's highway and arterial roads networks
2. An incomplete railway network that does not extend to many important locations

3. The age of large segments of the current network and its cars, and the breakdown of signal and communications systems
4. Very low operating speeds that make rail unattractive for both personal travel and cargo transport
5. The large investments required to construct lines, equip them with signals and communications, and produce locomotives, passenger cars, and cargo cars
6. The limited capabilities of the projects department at the headquarters of the General Company for Iraq Railways, which are insufficient to meet the company's responsibilities to implement current and future projects.

The current proposal is to restructure the General Authority for the Implementation of Railroad Projects so it can take on implementation of the proposed megaprojects. Alternately, the General Company for Implementation of Transport Projects would be rehabilitated so it could specialize exclusively in implementing railroad projects.

Vision

Reconstruction of Iraqi railway lines, to keep up with international railway networks and the growing requirements in transportation. The reconstructed network is modern; high-speed; consistent with the development in the country's other sectors; connects Iraq north to south and east to west; and links it to its neighboring countries in ways that serve the country's national interests.

Objectives

1. Quantitative

Table 36 shows the quantitative goals for the railroad activity over the five-year plan period 2010-2014. It details the increase in railroad line lengths, primary and secondary railroad line lengths, stations, as well as passenger and cargo transport capacities.

2. General Objectives

- To complete the process of doubling single lines

- To implement new crossings with high standards
- To eliminate all railroad crossings
- To equip the railroad network with modern trains, cars, and wagons that can transport passengers and cargo and meet the needs of the population and the national economy, as well as rehabilitate existing ones
- To upgrade the signal and communications systems in the current railroad network over the coming years, including the satellite communications system currently under construction that identifies the location of trains at any time for purposes of accident prevention and in case of train breakdown
- To increase the speed of passenger trains to 140 km/hour in phase one and to 250 km/hour in phase two
- To strengthen Iraq's geographical presence as a link between east and west, and meet the demand for transit cargo transportation, by building an efficient and effective infrastructure capable of meeting that demand, and by promoting railroad links with Syria and Turkey that serve the national interest
- To electrify the railways.

The Private Sector's Role

Like all other activities in the transportation sector, railroad activity is characterized by the huge investments required to implement its infrastructure. That is why investors' interest is limited to implementing infrastructure in highly profitable activities such as cargo transport or the high- and continuous-demand field of passenger transport. The field of operations and service provision is broad and open to the private sector. Use of Iraqi land as a dry conduit for the transit trade between East Asia, Turkey, Europe, and Syria will increase the chances of attracting investors and to the rail hubs that connect to holy cities and promote religious tourism in the country.

Means of Achieving the Objectives

1. Allocating of the investments necessary to develop and modernize railway transportation activity and construct the new projects in the five-year plan

Year	Increase in line lengths (km)		Increase in passenger transport capacity (million passengers)		Increase in cargo transport capacity (million tons)			
	Yearly	Cumulative Total	Yearly	Cumulative Total	Yearly	Cumulative Total	Yearly	Cumulative Total
2009	-	1,906	122	2,915	-	1	-	4
2010	-	1,906	200	3,115	0.5	1.5	1	5
2011	-	1,906	400	3,515	1	2.5	1	6
2012	800	2,706	2,087	5,602	4.2	6.7	38	44
2013	140	2,846	1,165	6,767	23	29.7	58	102
2014	2,157	5,003	6,233	13,000	35	64.7	233	335

2. Encouraging the private sector to invest in this activity, particularly in operations and service provision, and granting permission to the sector to open rail transit agencies to attract transport requests
3. Restructuring the General Authority for Implementation of Railroad Projects so it can take on project implementation and assign the task to companies specializing in this field. Alternately, rehabilitating the General Company for Implementation of Transportation Projects (which currently exists) so it can specialize exclusively in implementing railroad activities
4. Developing the capacity of engineering and technical staff in the railways sector to implement and construct railroad projects, providing the specialized railroad construction equipment, which ensures creation of national specialized staff highly efficient in this field
5. Developing and modernizing Iraq's railway institutions, upgrading laboratories and equipment, developing its work procedures, setting controls to encourage staff training, and encouraging students to join it.

7.1.2.4 Port Activity

Reality

Basra is Iraq's only international port—an important strategic center for the country and its interactions with the world. It is also of vital economic importance in securing a large portion of Iraq's import needs and a key port for exporting crude oil and other Iraqi products.

Port activity and maritime transport have therefore been important in Iraq over the years, particularly in the 1970s, and Basra has become the center of economic activities associated with import and export.

Port activities are funded and managed entirely by the state through the General Company for Iraqi Ports.

Currently, Iraq has four commercial ports and two platforms to export oil. There are 48 commercial port docks with a capacity of 17.5 million tons annually, of which 43 are currently operational with a capacity of 15.90 million tons annually. Table 37 shows Iraqi commercial ports, their capacities, the number of docks in each port, and the available depths at the docks.

As a result of the economic sanctions imposed on Iraq, and the damage to ports during the most recent war, the port machinery and equipment are obsolete and much of it is nonoperational. The war also increased the number of sunken vessels in shipping lanes and a halt to dredging these lanes. This has, in turn, led to reduced depths in the lanes and off port docks. The sunken vessels hinder ship entry and dredging and maintenance operations. All of these factors have had a negative impact on the performance and efficiency of commercial ports and docks.

Port activity declined after 1990 as a result of economic sanctions; Iraq's imports were shipped to neighboring countries' ports until 2002. In that year, total cargo weights reached about

Port	Available capacity (million tons annually)	Number of docks		Available depths at docks (meter)
		Existing	Actually operating	
Magal Port	1.5	11	6	6-8
Umm Qasr Port	7.5	22	22	6-10
Khor Al-Zubair Port	6.4	12	12	3-8
Abou Flous Port	0.5	3	3	6
Total	15.9	48	43	

9 million tons because the country signed the Oil for Food Memorandum and because foreign trade increased. Cargo weights then dropped in 2004 and 2005 to about 3 and 6 million tons, respectively, because of the deteriorating security situation. They rose in subsequent years to their previous levels.

As noted, with available capacity at operational port docks of about 15.90 million tons annually (in 2008) but real annual traffic at 11.85 million tons, there is substantial unused capacity available. We must determine the current volume of Iraq's imports and exports passing through its ports and the volumes of neighboring countries, as well. If that export figure is greater than 11.85 million tons annually, we must investigate exploiting the available capacity and what may be the reasons why ships could be reluctant to dock at the Iraqi ports and choose those of neighboring countries instead. We should study how to attract these ships to Iraqi ports and how to upgrading port performance by equipping port docks with the necessary handling equipment, as well as cost-effective means for intra-port transport and connection to the national transportation network.

In 2007 and thereafter, using its own funds and funds provided from the investment budget, the General Company for Iraqi Ports worked to upgrade the Al-Zubair and Tahrir dredgers and purchased the Taibah dredger. The vessels Al-Waleed and Hanan ships were recovered. Work is currently in progress to recover other targets using company revenues, allocations from the investment budget, and a loan from Japan. The number of vessels carrying crude oil from Basra's oil port and Umm Qasr deep-water port is between 292 and 434 vessels annually. Total cargo ranges from 39 to 48 million tons annually. In 2008, the number of passengers arriving at the Umm Qasr port aboard passenger ships was 8,700 or less, and about 6,500 departed from the port. This reflects a decline in passenger use of maritime transport to neighboring countries.

Despite Iraq's substantial port activity, it generated no more than 5 billion dinars in financial surplus in 2008, a dramatic decline from the 82 billion dinars in financial surplus in 2005, the best year to date. This is the result of outdated administration and

operation approaches, old equipment, and the employed staff of more than 10 thousand, one third of whom are not needed. Around 40 percent of employees are administrators, a high figure that ultimately negatively affects performance efficiency.

Potential

The main potential for developing port activity in Iraq includes:

1. The significant difference between the design capacity of current docks—about 15 million tons annually—and the projected demand of Iraq's future imports and exports, estimated to be 53 million tons by 2018
2. The presence of a maritime front within the territorial waters of Iraq, making possible the construction of a port able to receive the largest commercial ships with loads of up to 120,000 tons, and conversion of the country's secondary ports to primary ports, strengthening Iraq's geographical position as a link between east and west and promoting transit trade. There would still be a need to develop railroad infrastructure to accomplish this goal.

Challenges

1. Iraqi ports face stiff competition from the ports of nearby countries (the United Arab Emirates and Qatar, for example) and neighboring countries (Kuwait, Jordan, Syria, Saudi Arabia, and Iran). These ports have made significant progress over the past two decades while performance and efficiency in Iraqi ports have declined as the result of economic sanctions and wars. Overall, Iraqi ports have experienced no noticeable improvement domestically or internationally.
2. The current depths of shipping lanes and docks ranges from 6 to 10 meters—inadequate to receive the largest container ships and loads. This is why current ports remain secondary ports. Moreover, transportation costs remain relatively high and noncompetitive as compared to those of the other ports, leaving Iraqi businessmen dependent non-Iraqi ports for their imports.
3. Ports also lag behind in management and operations, as they lack modern electronic systems and have failed to keep up with the latest global developments in this field.
4. As noted, the many sunken ships in the shipping lanes affect all shipping into and out of Iraqi ports.
5. There is a shortage of marine equipment (excavators, towboats, ships, cranes, lighting ships, survey boats, pollution control boats, lead ships, and water and fuel tankers). There is also a shortage of specialized port equipment and cargo-handling equipment, and to the extent it exists, it is old.

6. There is little government investment directed toward port activity or needs. Between 2004 and 2008, total investment in this activity was no more than 178,000 million dinars; of that no more than 30 percent was spent. In addition, the private sector is reluctant to invest in implementing port infrastructure projects.
7. The staff in this sector are low-skilled and there is a not an efficient ratio of technical to administrative staff. There is also a large surplus of labor that negatively affects performance efficiency.

Vision

Main and secondary ports meet the nation's import and export needs; are able to compete with the ports of neighboring and nearby countries; and act as a starting point for Iraq's dry channel linking Asia, Europe, Turkey, and Syria.

Objectives

1. General objectives
 - Increase the capacity of existing ports and shipping lanes
 - Utilize the available unused capacities of existing ports, which total about 3 million tons annually, and reduce reliance on the ports of neighboring and nearby countries for Iraq's foreign trade by increasing the capacity of current Iraqi ports
 - Transition to constructing major ports capable of receiving the largest ships; reduce transport costs to make Iraqi ports competitive with alternative ports; and equip one of them with the requirements necessary to act as a dry channel
 - Strengthen the private sector's role in implementing, operating, and providing port services.
2. Quantitative objectives
 - Increase the design capacity of Iraqi port docks to plan target levels by 2014 (as shown in table 38)
 - Construct the large port of Al-Faw during the plan period (as shown in table 39)
 - Remove sunken vessels in shipping lanes as well as those close to docks during the plan period (as shown in table 40)

Table 38

Current Design Capacities for Iraqi Port Docks and 2014 Target Levels Under the Strategic Development and Modernization Plan

Port name	2010		Docks expected to be added during the five-year plan (2010–2014)	2014	
	No. of docks	Capacity thousand tons/year		No. of docks	Capacity thousand tons/year
Umm Qasr	22	7,500	19	41	14,000
Khor Al-Zubair	12	6,400	13	25	10,650
Al-Magal	6	1,500	8	14	3,600
Abou Flous	3	500	-	3	750
Total	43	15,900	40	83	29,000

Table 39

Targeted Quantitative Objectives for Construction of the Large Port of Al-Faw

Description	2018	2038
Container docks	No. of docks	1011 – 22
	Containers/year	3,000,000 7,000,000
General cargo docks	No. of docks	67 – 22
	Tons/year	10,000,000 40,000,000

Table 40

Quantitative Objectives for Ports Activities to Lift Sunken Vessels 2010–2014

Authority	2010	2011	2012	2013	2014	Total
Umm Qasr	3	2	1	2	2	10
Khor Al-Zubair	1	2	2	2	2	9
Khor Abdullah Channel	1	1	1	2	2	7
Shatt Al-Arab	3	3	2	2	2	12
Removal of 8 sunken vessels using the Japanese loan	8					8
Total	16	8	6	8	8	48

Means of Achieving the Objectives

- Construction of the large port of Al-Faw
- Allocation of the funds necessary to develop, expand, and modernize existing ports or open them to investments
- Implementation of procedures to enhance performance, modernize operating methods, and remove obstacles to activity, using the following means:
 - Contracting with a global consulting firm specialized in providing advice, proposals, and solutions to increase the efficiency and performance of the General Company for Iraq's Ports, including in its role as regulator and monitor of private sector performance, so it can compete with companies in neighboring and nearby countries
 - Providing maritime service needs to the oil ports (Basra and Omaig ports) and the liquid gas port in Khor Al-Zubair
 - Deepening, excavation, and establishment of marine channels leading to the port and establishing television and electronic control systems for ship and vessel movement
 - Upgrading ground handling equipment to achieve the requisite cargo handling capacity
 - Upgrading and enhancing the marine unit fleet that provides marine services to ports, provided this upgrade includes offshore excavators, towboats, signal ships, lead ships, passenger boats, connection boats, and workboats
 - Introducing modern electronic port management and operation systems
 - Preparing a comprehensive plan to train and qualify port staff, develop new qualified staff, and implement a training institute in the ports

- Recovering all sunken vessels from shipping lanes in Khor Abdullah, Khor Al-Zubair, Shatt Al-Arab, and Shatt Al-Basra
- Developing and modernizing shipyards and boat slips in ports, completing projects under construction, and constructing new shipyards that meet ship repair requirements
- Modernizing ports' provision of housing, water, and public services to importers, exporters, and port workers
- Reconsideration of surplus workers and staff.

As Iraqi ports are located at the edge of the Arabian Gulf, any proposal to amend the fees and prices of services provided by ports and maritime agencies must be crafted in a careful and studied manner, taking into account the fees charged in neighboring and nearby countries' ports, so that Iraqi fees are competitive and attractive.

The Private Sector's Role

The private sector can play a major role in constructing and operating some port infrastructure, as well as providing services. It is possible to open the door to the private sector to run basic container docks. If the private sector is reluctant to participate in constructing infrastructure, the state should do so rather than leaving the matter pending. It should then open the door to the private sector in the fields of operation and service provision.

Currently, in terms of port activity, private sector participants are involved in unloading and shipping in their capacity as unloading contractors. They are also involved in implementing bids for projects generally, and the maintenance of some tools and equipment.

Through investments, the private sector can participate in some projects and work as follows:

1. Construction of the large port of Al-Faw
2. Construction of 13 multipurpose docks in the Umm Qasr port, with a capacity of 3,750,000 tons/year
3. Construction of 4 container docks in the Umm Qasr port, with a capacity of 2,000,000 tons/year
4. Construction of 13 multi-purpose docks in the Khor Al-Zubair port, with a capacity of 4,250,000 tons/year
5. Investment in the Maamir dock in Al-Faw, with a capacity of 100,000 tons/year
6. Administration, operation, and development of the Al-Magal and Abou Flous ports
7. Provision of services such as departure and docking, as well as provision of services to ships in the port
8. Management of port docks, particularly container docks.

7.1.2.5 Maritime Transportation Activity

Reality

Iraq currently has three ships. It is hoped that new ships will be added through the purchase of existing ships or the manufacture of new ships as needed. As maritime transportation activity is both important and lucrative, the goal is to support the sector to create a nucleus for an Iraqi maritime fleet. Once this nucleus is created, fleet expansion would be funded from the revenues and profits generated by the ships within this fleet's nucleus.

Work is currently underway to sign joint transport agreements with international maritime transportation companies to transport Iraq's imports and exports, as well as create job opportunities and training to Iraqi executives.

In river transportation, work is almost at a standstill because of the security situation, water scarcity, shallow river depths, and the need to dredge them. There are also obstacles in river waterways due to the remains of bridges damaged by wars, as well as construction debris associated with temporary floating and service bridges. Reviving this activity will require resolution of the issues cited above.

The General Company for Maritime Transportation has 2,420 employees responsible for management and operations even though its activities have been suspended and work by executives has been stopped. There are also a number of surplus employees that were hired after 2003 and constitute a burden on the company's budget.

Challenges

1. The need for relatively large investments (at the outset only) to form the nucleus of a new Iraqi fleet of container transport ships and various cargo transport ships
2. Building ships on demand takes time and requires the provision of special and appropriate needs.

Quantitative Objectives

Quantitative objectives for maritime transportation activity include providing the ships necessary to transport Iraq's commodity imports and exports, particularly grain and food, and creating the nucleus of an Iraqi commercial fleet. Table 41 shows the number, types, and capacities of ships that would be purchased under the five-year plan (2010–2014) for maritime transport and maritime agencies.

Table 41 Quantitative Goals for Maritime Transport and Maritime Agencies During the Five-Year Plan (2010–2014)

	Needs	Capacity/ number	Number needed	Ship distribution by plan year				
				2010	2011	2012	2013	2014
Maritime transport	Pouring ships	50,000 tons	8	2	1	1	2	1
	Multipurpose ships	1,000–20,000 tons	2		1		1	
	Passenger transport ship	1,000 passengers	1		1			
	Container transport ships	750–1,000 containers	2	1		1		
Maritime agencies	Maritime transport boats with a 50 passenger capacity	4		1	1	1	1	
	Self-powered fueling ships with a 1,000 ton capacity	2		1			1	
	Self-powered maritime ships with 1,000 ton capacity	2			1	1		
Total		8		2	2	2	1	

The Private Sector's Role

Entry by the Iraqi private sector into the field of maritime transport is very limited at this time. Ownership is limited to small vessels because of the huge investments required to build large ships, the cost of crew and personnel wages, and the vast competition from the neighboring countries' fleets and firms.

This activity is crucial to supplying the country's needs, particularly in terms of food, grain, and military supplies. It is also very profitable. Accordingly, entry by the foreign private sector into maritime transport activities should preferably be in the form of joint ventures. As noted, it is necessary to form a national fleet of ships and vessels to meet the nation's essential needs and to benefit from the profitability of this activity.

7.1.2.6 Civil Aviation Activity

The civil aviation activity includes the activities of the General Establishment for Civil Aviation and the General Company for Iraqi Airways. The activities of the former include airports throughout Iraq; the activities of the latter entail air transport using the company's aircraft.

Reality

Generally, the activities of the General Establishment for Civil Aviation involve civil aviation in Iraq, civil air traffic management operations, and internal and external commercial air transportation operations.

Iraq now has six international airports, in Baghdad, Mosul, Basra, Irbil, Sulaymaniyah, and Najaf respectively. Work is in progress to renovate and modernize the Baghdad, Mosul, and Basra airports.

Baghdad International Airport consists of three buildings (Samarra, Babel, Nineveh). Each has a capacity of 2.5 million passengers annually and includes six air bridges. The airport has two runways for aircraft landing and take-off, one of 4 km x 60 meters,

the other of 3.3 km x 45 meters. There are two bypasses, the first 4 km x 45 meters, the second 3.3 km x 30 meters. There is an area for aircraft parking. The airport also includes buildings for air traffic control, communications, firefighting, operators, and storage areas, and a building for car parking. The airport is equipped with all the devices that ensure air traffic safety and provides services for travelers.

Basra International Airport consists of one building with a capacity of 2 million travelers annually and five air bridges for aircraft parking. The airport has one runway of 4 km x 60 meters, a bypass of 4 km x 45 meters, an area for aircraft parking, and buildings for air traffic control and communications. The airport is equipped with all the devices that ensure air traffic safety and provides services for travelers.

Mosul Airport consists of one building with a capacity of 500,000 travelers annually; a runway 2.8 km x 45 meters; an area for aircraft parking that accommodates three aircraft; and an air traffic control and communications building. The airport is equipped with all the devices that ensure air traffic safety and provides services for travelers.

Sulaymaniyah International Airport is an international airport categorized as CAT 1. It has both air and ground facilities. The air facilities consist of a runway 3.5 km x 45 meters, a parallel bypass of 3.5 km x 30 meters, secondary bypasses, and a parking area for three aircraft. The ground facilities consist of

a one-story travelers' building with an approximate capacity of 350,000 travelers/year and a fuel depot.

Irbil International Airport is an international airport with both air and ground facilities categorized as CAT 1. The air facilities consist of a runway of 2.8 km x 30 meters, an area for parking five aircraft, and secondary bypasses. The ground facilities of the airport include a small, one-story travelers' building with an approximate capacity of 150,000 travelers/year, a fuel depot, buildings for firefighting trucks, ground equipment, and power supply.

Najaf International Airport consists of a travelers' building with a capacity of 3,000,000 travelers/year, an area for parking four aircraft, and a runway 3 km x 45 meters.

Table 42 shows the activities of the General Establishment for Civil Aviation for the years (2002–2008), revealing low efficiencies during the period 2003–2004 and the rapid restoration of efficiencies in the subsequent years, reflecting the growing demand for air transportation.

Details	Years						
	2002	2003	2004	2005	2006	2007	2008
Number of travelers	426,520	22,162	66,898	243,980	442,017	461,849	585,967
Number of trips	4,329	436	1,870	3,686	3,235	6,389	7,933
Labor force	1,254	1,254	1,333	1,381	1,461	1,523	1,490
Revenues (million Dinars)	518	544	1,635	9,583	9,890	12,949	22,074
Expenditures (million Dinars)	1,772	1,335	5,654	41,553	43,143	31,298	21,054
Training outside Iraq	106 sessions	-	51 sessions	9 sessions	7 sessions	12 sessions	56 sessions
	369 trainees	-	341 trainees	64 trainees	36 trainees	52 trainees	179 trainees
Training inside Iraq	58 sessions	-	55 sessions	124 sessions	82 sessions	24 sessions	146 sessions
	270 trainees	-	236 trainees	459 trainees	383 trainees	191 trainees	191 trainees

Iraqi Airways is considered to be the national carrier. It was established as an independent entity in 1988; however, it was first instituted in 1946 under the administration of the Iraqi Railway Department.

In 2002, as a result of the economic sanctions, international transportation was limited to relief flights to Syria and pilgrimage flights. Internal transportation was limited to Basra–Mosul flights, transportation of local goods for companies, and civil flights to conduct Basra and Mosul airport operations.

In July 2004, the airport in Baghdad was handed over by the multinational forces, and began rebuilding and operating in September 2004. However, operation was limited to Amman, Damascus, and incidental flights.

In 2005 the company building in Baghdad International Airport was rehabilitated and four Boeing aircraft were leased. Sulaymaniyah airport was rehabilitated using company staff, and lines to (Sulaymaniyah, Irbil, Dubai, Istanbul, Cairo, Beirut, Tehran) were opened.

In 2008, Iraqi Airways had two owned and three leased aircraft. The number of flights that year was 3,494 international flights and 1,916 local flights. There were 120,282 incoming travelers on international flight and 57,764 on internal flights; the number of travelers on international departure flights was 113,226, and 56,306 on internal flights. This year also saw a marked improvement in civil aviation activities, as Iraq opened lines to Turkey and the Scandinavian countries. It is hoped that other new lines will connect to Athens, Paris, and London. It is also hoped to restore additional Iraqi Airways activities after an agreement is reached with Kuwaiti Airways.

Data	Years		
	1979	1988	2002
No. of Trips	-	6,311	1,230
No. of Travelers	688,022	695,538	198,362
Cargo quantity (tons)	16,118	24,752	80,184

2008 was also marked by Iraqi Airways obtaining the air investor certificate (A.O.C.), opening new offices in Iraq for the Iraqi Airways Company, determining a code for Najaf International Airport, upgrading the company's fleet with government-owned

Infrastructure

and other, leased aircraft, and a cooperation agreement with Boeing related to a modern information system.

Despite the relative improvement in civil aviation during 2008, the sector still requires substantial additional development to become a profitable international and internal air carrier, particularly in controlling aircraft scheduling and reducing ticket prices.

Civil aviation needs development and support in various ways. The activity represents Iraq in the eyes of the world. It is also the gateway through which the world can come to Iraq. Therefore, attention given to it should be at an appropriate level.

During the upcoming five-year plan, and for the purpose of promoting religious tourism, Iraq is expected to start implementing Middle Euphrates International Airport, which will be in the province of Karbala and is centered between Karbala, Hilla, and Najaf provinces. Its impact may extend to Diwaniyah and Samawah provinces.

Table 43 shows the number of flights and passengers (departures and arrivals), and the quantities of goods transported on board Iraqi Airways during the years 1979, 1988, and 2002. The table shows that there was little growth in passenger transport during the period 1979 to because of conditions imposed by the Iraq-Iran War. Growth then declined during the period 1988 to 2002 because of the economic embargo, including an embargo on air transportation activities.

Table 44 shows the number of Iraqi Airways' internal and international flights, arrivals, and departures for the period 2004–2008. It shows rapid growth in demand for air transport between 2004 and 2006 becoming stable in 2007 and 2008. This stability may be attributed to the limited number of available aircraft and the advanced age of existing aircraft.

Challenges

1. The slow pace of implementing the rehabilitation of the existing airports
2. Lack of a new and integrated air fleet; currently a limited number of aged owned and leased aircraft
3. Failure to resolve the Kuwaiti case
4. An increased number of non-specialist employees hinders company performance and financial results

5. Noncompliance of some Iraqi Airways management methods and operations with international requirements.

Vision

High-level management and a new Iraqi air fleet with new aircraft.

Objectives

1. General Objectives

- Rehabilitating Existing Airports
- Constructing new airports in areas of high demand and tourist attractions, particularly religious tourism
- Rebuilding the air fleet
- Developing current staff and creating new young cadres
- Strengthening the role of Iraqi Airways as a national carrier
- Meeting the growing demand for transport by Iraqi Airways.

Quantitative objectives

Table 45 shows the quantitative objectives of the civil aviation activity during the plan years 2010–2014.

Year	Number of aircraft		Number of travelers	
	Arrival	Departure	Arrival	Departure
2010	7,453	7,453	719,965	679,257
2011	9,912	9,912	1,072,748	964,928
2012	13,183	13,183	1,598,395	1,370,198
2013	17,533	17,533	2,381,609	1,775,468
2014	23,319	23,319	3,548,597	2,521,165

The quantitative objectives for rebuilding the Iraqi air fleet are to provide:

- 18 passenger planes
- 5 long-range planes
- 13 medium and short-range planes
- 5 long-ranges, large-capacity cargo planes.

Year	International transportation			Internal transportation		
	Number of flights	Departure	Arrival	Number of flights	Departure	Arrival
2004	305	9,917	10,555	-	-	-
2005	1,782	70,898	61,936	826	20,333	20,023
2006	3,266	145,323	128,675	1,412	37,473	37,222
2007	3,331	116,719	109,314	1,565	57,527	57,010
2008	3,494	113,226	120,282	1,916	56,306	57,764

The quantitative objectives for number of travelers (international and internal) and goods (imported and exported shipments) expected to be transported by Iraqi Airways during the five-year plan (2010–2014) are shown in table 46.

	2010	2011	2012	2013	2014
International transport (travelers)	367,680	514,752	773,752	1,083,252	1,516,552
Internal transport (travelers)	79,037	102,748	133,572	173,643	225,735
Imported shipments (tons)	39,513	55,318	77,445	108,423	151,792
Exported shipments (tons)	252	353	494	692	969

The Role of the Private Sector

In infrastructure, the private sector can play a role in:

1. Construction of civilian airports (both air and ground facilities) by private sector investors
2. Construction by the state of airport air facilities (runways, bypasses, air traffic control towers, aircraft parking areas, and so on), while making construction of ground facilities (travelers' halls, restaurants, cafeterias, markets, garages, and the like) available to the private sector, which would implement them by investing in areas of high economic and technical potential, such as religious tourism

In operations, the private sector can make contributions independently or through joint operations. In services, it can play an important and effective role. For example, the role of the General Company for Iraqi Airways could be limited to transport of travelers and luggage on aircraft and marketing of that service. The private sector could then provide services in fields such as the following:

- Aircraft maintenance
- Services to aircraft at the airport (electricity, air conditioning, cleaning)
- Cargo shipments.

7.2 Communications Sector

The communications sector includes the following activities:

1. Communications activities (including switches, networks, and messaging)
2. Mail
3. The internet and information technology.

7.2.1 Communications Activity

Reality

Given the important role played by the communications sector in civilian and military life, the infrastructure of this sector has been subjected to lethal wartime blows that have led to its almost complete destruction. The declining security situation and acts of terrorism and sabotage since 2003 led to the cessation of infrastructure maintenance and rehabilitation in hot spots and unsafe areas, particularly in the telephone ground network.

In addition, the creation of the Media and Communications Department and the withdrawal of most powers and responsibilities from the Ministry of

Communications, and their transfer to the Media and Communications Department, led to delays in implementing a clear communications policy during the period 2003–2009. The plan was clear in this field for the quality of the proposed projects, and the continuous changes in setting priorities.

Year	Number of switches	Total number of telephones (in thousands)	Post offices	Mailboxes
2002	285	1,183.3	314	44,218
2003	279	1,128.3	-	-
2004	278	1,198.2	282	47,395
2005	285	1,235.8	285	49,094
2006	288	1,278.2	286	55,028
2007	292	1,306.1	288	55,227
2008	296	1,525.2	355	53,627

In 2002, Iraq had 285 electronic switches distributed across all provinces. There were approximately 1183.3 thousand telephone lines, and the telephone penetration per 100 people across Iraq was 4 percent. In 2007, the number of switches rose to 292 and telephones increased to 1,306.1 thousand. Telephone penetration per 100 people rose to 5.1 percent for Iraq in general and 7.3 percent for the province of Baghdad. The number of post offices in the same year was 351 across all provinces. The number of mailboxes was 55,227, as shown in table 47.

As far as the activities of the international network service (Internet) which is a very new service in Iraq, the number of open service centers was 19 in 2001, 55 in 2003, and 26 in 2006. The number of open service centers for the private sector was 30 in 2003, 15 in 2005, and 5 in 2006. The current reality of the cell phone network is that, despite this technology not arriving in Iraq until 2003, the number of participants has increased greatly. The number of participants in all cell phone networks reached 15,420,500 in 2008, and network coverage ranged from 30 percent to 90 percent of the population—likely driven by the affordability of SIM cards, the disruption of landline service, and citizens' desire to acquire cell phones—a new cultural phenomenon—and benefit from their features. However, the level of cell phone service declined in the latest period, and

Infrastructure

cell phone companies took no concrete measures to improve service.

Cell phone service is still below the required level, and more efforts are required to secure its efficiency, whether for the country's agencies or for its citizens.

To take advantage of Iraq's geographical location and to strengthen its role as a link between east and west, north and south, work is underway to link Iraq to the neighboring countries by a network of axes and optical fiber cables.

As the communications sector has become an important and profitable sector, it can contribute significantly to the state's revenues. The field is also wide open to the private sector to participate in constructing and operating several of the sector's projects through partnership contracts or through complete investment, with the state supervising and regulating activities.

The general framework adopted by the communications strategy in Iraq for the coming period is consistent with the World Summit's conclusions as regards the information-based society; the general Arab strategy with respect to communications and information technology 2007–2012; the regional plan of action to build an information-based society in ESCWA member countries; and the Millennium Development Goals (MDGs).

The following data, issued by the CSO in March 2009, shows the national indicators for monitoring the MDGs:

- The number of fixed telephone lines and cell phones per 100 people
- The number of personal computers used per 100 people

Table 48 shows the indicators, their values for the base years, and the target values for 2015. Note the decline of telephone penetration in 2007 to 5.1 percent, down from 5.6 percent in 1990. This may be the result of widespread use of cell phones, ownership of personal computers, and use of satellite television.

Indicator	Base number	Base Year	Current number	Year	Target for 2015
Number of fixed telephones per 100 persons	5.6	1990	5.1	2007	11.2
Number of cell phones per 100 persons	0	1990	39.1	2007	40
Proportion of families that own personal computers	3.6	2004	7.4	2007	10
Proportion of families that use satellite	32	2004	88.3	2007	100

Challenges

- Inability to perform the maintenance work on the telephone ground network in hot spots
- Collapse of the communications network infrastructure and the age of its equipment
- Limited use of allocations to this activity for purposes of implementing projects

Vision

Implementation of a qualitatively advanced communication and information technology infrastructure and upgrade of the level of communication services to international standards, thereby ensuring quality and providing world-class services that keeps up with global developments. The implementation of e-governance is an additional important facet of the vision.

Objectives

1. General Objectives

- Expanding fixed telephone lines in the urban and rural areas, and high rates of universal access and universal services
- Providing an appropriate infrastructure for the application of e-government services
- Reducing the disparity in cell phone proliferation between urban and rural areas
- Increasing distribution of computers
- Increasing access to the Internet
- Reduce the costs of using telecommunications, including the Internet, as a proportion income, making prices affordable to a larger segment of society, especially school and college students
- Improving the quality of communications and Internet services
- Expanding the use of broadband services at appropriate price
- Improving and expanding communication bands for international gateways
- Optimizing use of frequencies, control over international cell phone traffic, and provision of Internet services gateways.

2. Quantitative Objectives

Table 49 shows the infrastructure indicators for information technology, communications, and gateways. Note that some of these figures are ambitious as compared to national indicators for monitoring achievement of the MDGs. That is the case for the number of telephone lines, number of cell phone subscribers, and families who own a computer.

Means of Achieving the Objectives

In addition to securing the investment required to achieve activity goals—through government investment or private or foreign investments—the following will support achieving

activity goals:

1. Supporting the communications and media regulatory authority and strengthening its executive abilities to apply rules and guidelines
2. Creating an enabling environment by instituting laws and regulations for the communications and information sector, including the Ministry of Communications law to restructure the ministry to include information technology functions as part of its responsibilities;
3. Strengthening the role of the authority to create a fair and transparent competitive environment for all parties to encourage investment and activate the private sector's role; seeking to protect consumers and simplify the procedures for issuing telecommunications services licenses
4. Transferring the developed expertise by entering into strategic partnerships with international companies providing telecommunication services
5. Ratifying the agreements for intellectual property rights and preventing illegal reproduction of software, artistic, and intellectual products.

Indicator	Present status	Target status
Number of fixed telephone lines per 100 persons	5%	25%
Number of cell phone subscribers per 100 persons	40%	100%
Number of computers per 100 persons	1%	5%
Number of Internet Subscribers per 100 persons	-	20%
Number of broadband Internet Subscribers per 100 persons	-	10%
Proportion of families that have computers	5.6%	20%
Proportion of families that have access to the Internet at home	2.8%	10%
Per capita of international Internet bandwidth		
Percentage of the population covered by cell phone service (coverage includes most of the regions)		100%
Cost to access the Internet (20 hours per month) in US\$ as a percentage of annual per capita income	8%	4%
Cost of using a cell phone (100 minutes per month) in US\$ and as a percentage of annual per capita income	5%	3%

The Role of the Private Sector

The communications sector is well-suited for the private sector to play an important and broad-based role in. It is quite profitable, provides rapid returns, and faces increasing demand for services, including:

1. Cell phone services
2. Landline phone services
3. Wireless phone services
4. Internet services

7.2.2 Postal Activity

Reality

Despite the progress in mail services in Iraq, and the good quality of service provided in past decades in light of the poor and limited phone service, there is a lack of modern means of communications such as cell phones and the Internet. Even so, the reality is that current postal service in Iraq is quite limited, not very reliable, and at times almost nonexistent.

Challenges

1. Mail development projects not included in the priorities of the communications sector
2. Slow incorporation of modern, advanced communications systems in mail operations
3. Weakness of the available capabilities and traditional work methods
4. Lack of user confidence in the level of services delivered.

Vision

To rebuild mail activities to provide quick and reliable services.

Objectives

1. Improving the quality of postal services, particularly the traditional services, and introducing new services
2. Developing mail services internally and with other countries to become an international postal service
3. Increasing the proportion of mail distributed to homes and institutions
4. Integration of postal sector activities within the national economy and government activities to implement e-government, electronic trade, and ATMs and other applications.

Means of Achieving the Objectives

1. Separating the mail activities from communications to create an independent entity, initially; considering, at a later date, prominent role for the private sector
2. Developing a clear strategy for directions to accelerate postal activities
3. Developing an action plan, including for human capacity, to upgrade the postal service infrastructure to realize the greatest benefits from communications and information technology to improve services and link them electronically
4. Realizing the maximum benefit from communications and information technology and other banking technologies in improving services permitting citizens to save money with increased confidence
5. Introducing a strategic partner into the postal service directorate; generating savings by introducing modern administrative and technical capabilities and expertise, as well as new technological systems that improve service

efficiency and quality

6. Addressing the need for the postal service and savings capabilities to function on a commercial basis and be able to compete in a free market environment, reducing dependence on government support
7. Encouraging the private sector to invest in developing international mail centers in Iraq and an express mail service capability.

7.3 Storage Sector

Reality

Storage is a strategic infrastructure component, ensuring food security for the general public, especially in grains. This sector includes silos and grain storage areas for wheat, barley, and rice, currently under the authority of the Ministry of Trade/the General Company for Grain Trade.

The number of grain storage silos in the provinces of Iraq is 45, with capacities ranging from 10,000 to 50,000 tons for vertical and dome silos.

As the wars in which Iraq was engaged threatened food security, it is now crucial to secure a good stock of the primary grains.

Storage capacities were developed in 2008, and reached around 4.5 million tons of wheat and barley, 350,000 tons of rice, distributed throughout most of Iraq's provinces. The provinces with the greatest storage capacity are Nineveh, Salahuddin, Baghdad, and Kirkuk. The lowest storage capacity (wheat and barley) is in Sulaymaniyah, where there is no capacity. Storage capacity in the provinces of Karbala, Muthanna, and Dhi Qar is no greater than 40,000 tons.

The storage capacity for the strategic rice crop is concentrated in Wasit, Basra, Baghdad, and Najaf, as shown in table 50.

Provinces	Storage capacities of the silos and warehouses of the General Company for Grain Trading (wheat and barley)				Current roofed storage capacities for the rice crop (tons)
	Bins	Bunkers	Terraces	Current storage capacities (tons)	
Nineveh	353,000	446,200	91,500	890,700	42,750
Dohuk	105,000	23,000	-	128,000	-
Irbil	112,000	114,800	-	226,800	7,500
Kirkuk	20,000	330,100	40,000	390,100	7,500
Salahuddin	235,500	436,200	22,000	693,700	22,100
Sulaymaniyah	-	-	-	-	-
Anbar	10,000	172,000	-	182,000	12,350
Diyala	160,000	129,800	-	289,800	40,000
Baghdad	362,500	232,600	-	595,100	57,450
Wasit	42,000	134,000	17,000	193,000	9,350
Najaf	66,000	137,900	-	203,900	40,400
Qadisiya	15,000	128,100	-	143,100	17,300
Babel	93,000	129,300	-	222,300	14,200
Muthana	10,000	24,500	-	34,500	15,000
Karbala	10,000	-	1,000	20,000	5000
Dhi Qar	20,000	9800	13,500	43,300	1,100
Maysan	10,000	85,400	-	95,400	7,200
Basra	125,000	-	-	125,000	53,950
Total	1,749,000	2,533,700	194,000	4,476,700	353,150

All storage capacities, in all of the forms shown in the above table, are insufficient to store what is locally produced and what is imported. For example, total Iraqi wheat imports in 2008 were 3.5 million tons, and what was produced by farmers was 650 thousand tons. Locally-produced rice totaled 200,000 tons and what was imported totaled 102 million tons. Accordingly, there is a need to add new storage capacities to meet the populace's needs, to secure strategic stocks of the main grains, and to compensate for obsolete silos.

The problems and challenges

1. The age of some silos and their need of rehabilitation
2. Ineffective silo management and operation methods.

Vision

Safe and sustainable storage methods to ensure availability of the main crops (wheat and rice).

Objectives

1. General Objectives

- Securing strategic storage of sufficient wheat and rice for at least six months
- Constructing new silos and new storage places for wheat and rice.

2. Quantitative Objectives

Table 51 shows the proposed storage capacities to be added during the five-year plan 2010–2014, broken down by province.

Province	Current grain silo storage capacities (tons)	Province's 6-month need for grain (wheat + barley) (tons)	Proposed silo storage capacities (ton)
Kirkuk	20,000	77,142	120,000
Salahuddin	10,000	79,380	100,000
Anbar	10,000	91,074	120,000
Wasit	42,000	72,444	100,000
Qadisiya	15,000	70,962	120,000
Mathana	10,000	44,610	60,000
Karbala	10,000	61,764	80,000
Dhi Qar	20,000	116,154	120,000
Maysan	10,000	64,998	80,000
Basra	125,000	165,672	120,000
			+
	In Umm Qasr silo		120,000

7.4 Water and Sanitation

7.4.1 Policies in the Area of Water and Sanitation Services

All previous strategies and development plans have stressed the importance of these two services and their direct links to human life and health, and paid special attention to improving and distributing them to all provinces and rural areas. Drinking water policy has not been limited to providing sufficient water quality and quantity, but also has focused on very low, subsidized prices. Accordingly, providers of drinking water and sanitation services were steadily developed along with material and human resources such that Iraq's capabilities ranked high in the region. In 2008, in urban areas, 95 percent of the population has access to safe drinking water, and in rural areas, 75 percent.

The percentage of the population who have access to sanitation services is 75 percent for the urban areas, and 50 percent for the rural areas. However, the war and embargo-driven deterioration that has hit the remaining sectors, impacted negatively upon completion of the programs for one of the most important services related to human health. The level

of services provided to the citizens decreased to 48 percent, not to mention adversely effects on the quality and quantity of water supplied. This showed an obvious decline and a high proportion of failed plans at the level of the various cities and rural areas. The goal of universal coverage in the areas of water and sanitation services is to handle each area separately. The plan would start with the current reality, and define the vision, objectives, and means of achieving the objectives. The plan would also identify the provinces that are not under the auspices of the city and territory of Baghdad. It is worth noting that it was not possible to prepare an analysis of the Kurdistan region and its provinces because the ministry did not receive any data about the territory at the time plan documents were prepared.

7.4.2 Water Services

7.4.2.1 Water Services in Provinces Other than Baghdad

Reality

This sector suffered dramatic neglect after 1991 for reasons previously mentioned, which resulted in a decline to a low level of service provision, both quantitatively and qualitatively. Water is produced and processed by the Ministry of Municipalities and Public Works for 14 provinces and the districts and areas within the province of Baghdad. The population covered by this service numbers approximately 22 million; the number receiving service is 17.8 million. The number of projects currently is 245, in addition to 2,128 water units with different production capacities distributed across all provinces and rural areas. The quantity of water produced per day is 7.2 million cubic meters, and the amount of the current shortage is 2.6 million cubic meters, thus the shortage is 21 percent and the percentage of the served population is 79 percent for the year 2008 as noted in table 52.

There has been significant development in providing this service since 2004, including a steady increase in the actual production of drinking water and a steady decrease in the total shortage from 34 percent in 2004 to 21 percent. These were driven by allocation of 10,250 trillion dinars between 2004 and 2008 to construct new projects or rehabilitate existing projects affected by the war.

Drinking water policy, as noted, is to subsidize the service and charge only a token price. Below are some of the results of this policy.

- The continued existence of considerable disparity in service levels between urban and rural areas. In urban areas, the shortage in drinking water availability has declined to 10 percent. The shortage in rural areas has remained quite high, at no less than 36 percent.
- The continued existence of considerable disparity in drinking water shortages among provinces: 15 percent in Nineveh, 30 percent in Basra, 28 percent in Maysan, 26 percent in Qadisiya, and 20 percent in Dhi Qar.

Province	Number of active projects	Capacity (m ³ /day)	Number of working complexes	Capacity (m ³ /day)	Total capacities (m ³ /day)	Population per 2007 estimates	Population Served	Shortage percent
Nineveh	39	778,827	77	128,160	906,987	2,901,809	2,466,537	15
Kirkuk	14	479,746	134	105,600	585,346	918,288	808,093	16
Baghdad	10	237,080	186	234,752	471,832	2,897,473	2,346,953	19
Diyala	25	286,963	134	153,600	440,563	1,610,828	1,320,878	18
Salahuddin	19	270,200	148	246,048	516,248	1,237,059	1,136,594	18
Babel	18	245,920	173	282,104	529,024	1,707,508	1,400,156	18
Najaf	9	224,560	86	121,952	346,512	1,117,624	90,527	19
Karbala	7	233,310	107	222,864	456,174	924,085	776,231	16
Wasit	19	181,100	229	239,232	420,332	1,097,949	812,482	26
Anbar	21	372,418	155	241,368	613,786	1,542,152	1,295,407	16
Maysam	13	68,600	159	224,192	292,792	845,498	608,785	28
Muthana	6	124,260	36	62,208	186,468	636,297	538,126	17
Qadisiya	13	198,773	173	169,792	368,565	1,018,072	753,373	26
Dhi Qar	19	109,140	118	258,720	367,860	1,666,932	1,333,545	30
Basra	13	201,800	213	536,800	738,600	1,952,030	1,366,241	30
Total	245	4,012,697	2,128	3,228,392	7,241,089	22,073,604	17,858,649	11

Challenges

1. Lack of budget for water projects, both in the investment budget for new projects and the operating budget for current projects to ensure the needs of the operations such as fuel, sterilization materials, and maintenance
2. Low water levels in the rivers that supply the projects, caused by low levels of water coming from the countries upstream of the Tigris and Euphrates and their tributaries, and the lack of rain in recent years
3. Aging water lines, which leads to increased water loss and pollution of the water received by the consumer
4. The difficulty of the procedures and the length of time required for municipal authorities to allocate land for water projects and encroachments by other parties
5. Operational problems caused by continuous power interruptions, insufficient fuel to run project generators, and lack of engineering and technical staff
6. The excessive price policy that supports service delivery and its negative impact on long-term economic performance.

1. Bringing service to areas not previously serviced
2. Providing safe drinking water that meets all international standards for all uses in the urban and rural areas
3. Ensure that the water processed is of high quality and meets international standards
4. Reducing the water shortages in all Iraqi provinces
5. Reducing service level disparities among provinces as well as between rural and urban areas.

Means of Achieving the objectives

1. Completing and constructing 92 projects in all provinces, funded locally by the investment budget
2. Ensuring adequate water quotas are allocated for new and existing projects from the source they depend on
3. Ensuring availability of operational requirements such as fuel, electricity, engineering and technical staff, and a continuous supply of filtering and sterilizing materials
4. Reducing water waste through rehabilitating the transportation and distribution networks, and increasing consumer awareness of various ways to reduce water consumption
5. Gradually removing subsidies for providing this service, based on consumption levels, but continuing subsidies for the poor whose consumption is less than a certain limit to be determined by the water authorities
6. Constructing water desalination projects in the provinces that suffer from high salinity, especially the southern provinces

Vision

Ensure safe drinking water that meets international standards is accessible by all provinces' residents in rural and urban areas.

Objectives

Reducing the number of people with no access to safe drinking water from water projects or water reservoirs to 10 percent in urban areas and 26 percent in rural areas to avoid shortages and ensure that drinking water of sufficient quality and quantity through other means such as:

- Continuing capacity building programs, developing the staff in accordance with modern technologies for implementing water projects.

7.4.2.2 Water Services in Baghdad

Reality

Baghdad's drinking water is produced by 8 purification projects and 44 water reservoirs. Purified water from the projects is distributed to the complexes, which then pump it to the network associated with these reservoirs, which are in various areas of Baghdad. There are also nine small pumping stations that serve the residential complexes.

Most of these projects are old and their economic life has ended. However, the mayorality of Baghdad has been rehabilitating them to increase their capacities to 942 million cubic meters per year. As of 2008, their actual capacity was 788 million cubic meters per year.

The plans for water production in Baghdad were completed in 1982, based on a daily per capita consumption of 500 liters/day and taking population growth into account three.

These plans included constructing the Alrusafa water purification project, with a capacity of 9,000 cubic meters per day, constructing 16 underground tanks on both sides of Karkh and Alrusafa, and networks of major pipeline carriers, in addition new pure water systems in new communities.

A portion of this plan was completed in the 1980s. As a result, pure water processing rates improved for several years. However, economic sanctions caused a decline in investment programs in the 1990s. Moreover, Baghdad's water authorities had to rely on emergency systems to address immediate problems. It did so by reinforcing connections using unproven or otherwise inadequate methods. This led to processed water shortages in Baghdad, and particularly the Al-Rusafa district, in the summer, reaching 1.25 million cubic meters, or 35 percent. The per capita consumption rate decreased in Al-Rusafa to 110 liters/day after a 1987 peak of 300 liters/person/day throughout Baghdad. Water quality consistently declined along with water availability.

After 2005, Baghdad's water department activated previous plans and developed additional plans to improve services and to accomplish its goals. As a result, three underground storage tanks of varying capacities were constructed in the Al-Rusafa district. The department also directed the implementation of Alrusafa water project—the first stage with two lines and a capacity of 910,000 cubic meters per day. Additional projects included the first expansion of the East Tigris project, with a capacity of 225,000 cubic meters per day, and the second expansion, with a capacity of 180,000 cubic meters per day, and construction of the Sadr water project, with a capacity of 90,000 cubic meters per day, to cover the shortage in the Alrusafa area, which amounts to 1.25 million cubic meters per day.

There was a lack of appropriations for water projects in Baghdad during the period 2004–2009, and the little funding received

was not fully utilized. Indeed, the rate of implementation of scheduled projects was no higher than 70 percent during the best years. As a result, most of water projects have not been completed.

Challenges

The problems and challenges facing the water sector in Baghdad are the same in the other provinces.

Vision

Secure safe drinking water that meets international specifications, and enough for all the city inhabitants.

Objectives

- Increasing the per capita share of drinking water to 200–300 liters/person/day
- Ensure a high quality water supply in accordance with international specifications
- Ensure adequate stocks of water to supply the city sectors when water projects stop.

Means of Achieving the Objectives

- Completing construction of Alrusafa water project in two stages, with a capacity of 910,000 cubic meters per day
- Directing the implementation of the plan to construct the remaining three stages of the Alrusafa project to produce 3,165 million cubic meters per day
- Constructing a new purification project for the areas that are far from the main project services
- Continuing construction of small purification complexes for the areas suffering from severe shortages
- Constructing 10 new underground tanks, and expanding tanks that are currently operating
- Constructing new laboratories and expanding existing ones
- Extending the pure water networks to the areas that are not currently served
- Renewing the old and damaged water networks to reduce waste and obtain high quality water
- Make consumers aware of the differences between drinking water and the raw water used for irrigation and other purposes
- Gradually removing subsidies for service, based on consumption levels, but continuing subsidies for the poor, and those who consume less than a certain limit determined by the water authorities
- Continue capacity-building programs and developing staff according to modern technologies for implementing water projects.

7.4.3. Sanitation

Sanitation services have been and remain below the required level. They were not given the necessary attention, despite their importance, in successive development plans, which led to a decline in the number of people served. The 2005 Iraq environmental survey showed that 25.7 percent of the people were served by the sewer systems, 51.2 percent were served by a separate treatment system (septic tank), and 23.1 percent were not served by either. The survey also showed that there are 38 central processing stations and a small processing station for sewage, of which 14 are central processing stations, 24 small processing stations. Of the total, 31.6 percent of the central processing stations and the small processing stations were operational, 31.6 percent of the central processing stations and the small stations were partially operational and 36.8 percent were idle.

The total design capacities of the central processing stations and the small processing stations amount to 1,038 million cubic meters per day. The capacity of the central processing stations was 97.1 percent, while the capacity of the small processing stations was 2.9 percent; the actual capacities were no more than one-third of the design capacities. The survey also showed that 75 percent of the provinces that have sewage systems that suffer from leakage, constituting dangers to the environment and health because most were constructed more than 20 years ago. This leads to exuding, sprinkling, and leakage of sewage into the drinking water network, which in turn leads to water pollution and the threat of serious diseases such as cholera and viral hepatitis.

7.4.3.1 Sanitation services in the provinces and Baghdad's suburbs

First: Reality

Sanitation projects, as noted, were and still are below the required level. The percentage of population in the provinces, with the exception of the outskirts of Baghdad and the Kurdistan region, was about 26 percent in 2009. Lack of care in this sector contributed to polluting the environment and became a real danger to the health of citizens, as most sanitation water is dumped in rivers and streams used for drinking water by many residents of the villages and rural areas which are not served by the portable water networks. Table 53 shows the number of projects and residents served.

Huge investments were allocated to sanitation in the various provinces, with the exception of the city of Baghdad, reaching 750 billion dinars for the period 2004–2008. High drainage rates of 90 percent were achieved, despite which sanitation services remained limited and infrastructure deteriorated. As a result, there was no noticeable improvement in these services.

Challenges

1. The large deficit in coverage of the urban population and the total absence of coverage in the rural areas, and the need for huge financial resources to increase coverage and quality of service
2. The age of the existing sewer drainage networks and the need to maintain and develop it

Province	Design capacity	Number of people served	Number of sewage water stations	Number of pumps	Network length (km)
Nineveh	17,820	61,500	5	14	51
Kirkuk	3,500	9,000	2	5	26
Saladhuddin	27,000	82,000	16	62	345
Diyala	21,600	22,610	1	-	74,691
Anbar	7,000	35,500	6	12	125
Baghdad outskirts	3,000	12,000	13	10	7,500
Babel	12,000	55,000	4	22	128
Karbala	41,000	165,000	7	14	224
Najaf	42,000	180,000	19	17	125
Diwaniya	12,000	50,000	-	31	175
Wasit	-	-	-	-	-
Muthana	1000	4,000	5	5	16,277
Dhi Qar	18,000	95,000	14	11	13,617
Maysan	30,000	75,000	31	68	120
Basra	118,100	1,000,000	65	98	866,436
Total	354,020	1,846,610	194	369	84,529,413

3. The serious environmental pollution caused by the discharge of untreated water into water resources, particularly the presence of sanitation water in drinking water networks close to the intake of drinking water projects
4. The reluctance of skilled and unskilled workers to work in sanitation for social reasons
5. The continuous and significant horizontal expansion of Iraqi cities and towns, which maximizes the cost of service and hampers the increase of coverage percentage
6. Lack of fuel and operational supplies such as specialized mechanisms, equipment, and so on
7. Problems using and allocating project sites and the use of typical traditional methods and designs without modernizing them.

Vision

All provinces covered by sanitation services and the percentage of those served exceeds the Millennium Development Goals of 10 percent, with river waters managed to meet international standards.

Objectives

1. Increase the percentage of those who are served by sanitation networks to 35 percent in the provinces, with the exception of the city of Baghdad
2. Treated water dumped in rivers conforms to international specifications.

Means of Achieving the Objectives

1. Implementing 48 projects distributed over all provinces

according to need, population density, and current coverage percentage

2. Rehabilitating old sanitation networks and replacing their damaged parts
3. Allocating investment amounts within the plan for the expansion of rainwater networks
4. Enhancing the capabilities of the central laboratories and sewage laboratories in the provinces to secure the necessary tests to ensure dumped water is treated per international specifications
5. Implementing new projects in the cities according to population density, groundwater levels, and implementation stages, from the higher levels to the lower levels (province, judiciary area, district)
6. Reviewing the standards of city planning and horizontal housing and transitioning to vertical housing
7. Granting incentives to sewage workers to reduce their reluctance to work in this field
8. Ensuring operational requirements in a sustainable manner
9. Continuing capabilities-building programs and staff development according to modern technologies in implementing sanitation projects.

7.4.3.2 Sanitation Services in the City of Baghdad

Reality

Of Baghdad's population, 75 percent are served by the sanitation networks. There are three active projects, with different capacities. The percentage of incoming sewage in the city exceeds its treatment capacities. Some of the overflow goes untreated to the discharge places, causing environmental damage and negatively affecting the health of citizens and even threatening their lives. In addition, the age of these networks makes them susceptible to leakage and overflow into drinking water networks, (which are in no better condition), causing drinking water pollution that further threatens the citizens' lives and health. Table 54 shows the sanitation projects in the city of Baghdad.

Challenges

The problems and challenges faced by sanitation activities in the city of Baghdad are not much different than those that face the provinces, with the exception that coverage in Baghdad is up to 75 percent of the city's population.

Vision

Secure sustainable sanitation services in all areas of Baghdad and ensure that water dumped in rivers is treated in accordance with international specifications.

Objectives

1. Increase the level of service coverage from 75 percent of the population of Baghdad to 100 percent in 2014,

Project	Design capacity (m ³ /day)	Incoming to the project (m ³ /day)	Served areas
Old Rustamiya project	175,000	225,000 – 250,000	The areas located west of the army channel from the Adhamiya region to Rustamiya project
Rustamiya project third expansion	300,000	325,000	The areas located east of the army channel from Alshaab region – Sadr city – the municipalities
Karkh project	205,000	625,000	The project treats the sanitation water of the areas located on the Karkh side

surpassing the relevant Millennium Development Goal

2. Improve the environmental impact of this activity, reducing the pollution it creates by increasing capacity to treat sanitation water and providing sewer network services to the areas that are currently not served
3. Make use of the gases that result from the process of treating sanitation water, such as methane, to generate electric power, and use byproducts of sanitation water (sludge) by converting it into pavement stones or fertilizer
4. Convert sanitation water to water suitable for agriculture and irrigation after treating it using modern and advanced technologies.

Means of Achieving the Objectives

1. Implementing 10 new projects in the city of Baghdad and completing projects currently under construction, and allocating the investment funds for them
2. Rehabilitating old sewer networks at the end of their design life using modern technology (for example, the hidden excavation method), and increasing the capacity in line with population growth in the city
3. Implementing new networks for the unserved areas in the city to improve the environmental situation
4. Promoting and developing the capabilities of the central laboratories to perform the necessary tests to ensure dumped water is treated according to international specifications
5. Ensuring operational requirements are met in a sustained way
6. Continuing the capabilities-building program, developing staff according to modern technologies in the implementation of sanitation projects.

Chapter Eight

Public Services



Public Services

8.1 Education

According to the principles of the 2005 constitution of Iraq, the state is committed to providing the opportunities of education equally to all Iraqis. In the past two decades, the entirety of the education system has deteriorated. A serious effort is required to heal the wounds and hasten the reforms that will achieve the larger aims of economic reform.

8.1.1 Reality

8.1.1.1 Educational Stages

Early Childhood

The state realizes the importance of education in this level of life as a pillar that raises the standard of educational of the later levels. One of the compulsory MDGs, approved by the constitution of 2005, is expanding early childhood development educational programs—the base for building education.

Despite the growth in the number of children who attended kindergarten (4.3 percent), there is no noticeable progress in absorption of children ages 4–5 years at this level. The percentage of coverage increased only from 5.4 percent to 5.6 percent, because of the limited increase in the number of the kindergarten— at a rate of 0.6 percent compared to the increase in the number of teachers at a rate of 1.8 percent.

Elementary Education

Some development in the absorption of children aged 6–11 occurred, with a coverage rate of 85.6 percent increasing to 87 percent for the period 2001/2002 and 2007/2008. This indicates an inability to achieve full compulsory education. There was a growth rate of 3.9 percent in the number of children who attended elementary schools, in addition to a growth rate of 7.2 percent in the number of teachers for this level and a decrease in the student–teacher ratio from 21:1 to 18:1. The number of overall schools has increased by 4.6 percent.

Secondary Education

The percentage of coverage of education at the secondary level decreased to 44.3 percent from 56.6 percent. The 6.9 percent increase that occurred in the number of those attending this level is mainly the result of the increase in population. There was a growth in provision at this level that included a growth rate of 12.4 percent in teachers, and a decline in the student–teacher ratio from 17:1 to 14:1. The total number of teachers has increased by 4.9 percent.

Vocational Education

The percentage of coverage for people in vocational middle school education decreased from 3.9 percent to 3.2 percent; there was a 0.5 percent decrease in the number of those attending this level. There was an increase in provision of 11.3 percent of teachers, which led to a decrease in the student–teacher ratio from 10:1 to 6:1. The number of vocational schools has increased by 2.9 percent.

Teacher Training Institutes

There was a 6.2 percent decrease in the number of those who attended teacher training institutes during the research period. On the other hand, there was an increase in training provision that included an increase of 26.3 percent in the number of teachers, which led to the student–teacher ratio decreasing from 26:1 to 13:1 and the number of institutes increasing by 3.1 percent. Growth in this area is higher than that in other areas of education; there is a high level of interest in these institutes, especially for females.

Higher Education

The percentage of population coverage at this level (18–23) decreased from 10.2 percent to 8.3 percent; there was a 0.5 percent decrease in the number of those enrolled. However, there was an increase of 12.5 percent in the number of teachers. This led to a much lower student–teacher ratio—from 22:1 to 10:1, in addition to an increase in the number of colleges and institutes of 17.4 percent, resulting from the horizontal and vertical expansion of this level during 2001/2002–2007/2008.

There was an increase in the number of the governmental and private universities, and colleges, institutes and technical colleges, as the number of universities increased from 17 to 19 between 2003/2004 and 2007/2008 in addition to the Iraqi Commission for Computers and Informatics and the Iraqi Council for Medical Specializations.

The number of government colleges increased from 160 to 201 and the number of private colleges from 13 to 19. In technical education, the number of institutes and colleges has remained the same; 27 institutes and 9 colleges during the same period. Despite the improvement in various university campuses, especially between 2007 and 2009, the campuses, including classrooms, laboratories, and other facilities, still suffer from overcrowding because of limited space, including in the Technical Education Commission's institutes.

8.1.1.2 Education Facilities

Governmental funding and performance levels have not reached the required level (from a financial, executive, and organizational perspective) to correct discrepancies and eliminate inadequacies in educational facilities, supplies, and so forth. This has increased inadequacies in educational facilities and increased the number of schools that need refurbishment or are about to collapse from overuse, such as serving more than one shift in same facility. The percentage of educational facilities used for two shifts in 2007/2008 is 35.8 percent at the elementary level, 42.1 percent at the secondary level, 23.5 percent at the vocational level, and 49 percent at teacher training institutes. Facilities used for three shifts comprise are 4.5 percent at the elementary level, 3.4 percent at the secondary level, and 1.5 percent at the vocational level for the same year. The data in table 55 show that there is a continuous increase, reflecting a deficiency gap—the inability of the rate of school growth to match the increase in demand.

Table 55 The Deficiency in the Number of Educational Facilities for the Years 2004/2005-2007/2008

Academic year	Number of schools	Number of educational buildings	Educational deficiency gap	Percentage	Schools about to collapse	Percentage	Schools in need of comprehensive refurbishment	Percentage
2005/2004	15,754	11,800	3,954	%25	1,537	13%	2,683	23%
2005/2006	16,857	12,126	4,731	28%	1,925	16%	2,843	23%
2007/2006	17,390	12,182	5,199	30%	1,898	16%	3,041	25%
2008/2007	17,913	12,597	5,316	30%	1,878	15%	3,076	25%

Despite the efforts directed at educational facility construction and refurbishment, the deficiency gap increased from 25 percent in 2004/2005 to 30 percent in 2007/2008, the result of a growing rate of demand for schools, the increase in the percentage of attendance in schools, the growth of population groups who are school-aged, the spread of education in different urban and rural areas, the reduction in drop-out rates, and the large number of outdated educational facilities. These all combined to widen the gap between what is required of schools and what can be provided in terms of facilities. More effort and more financing than is available are needed to narrow this gap, end insufficiencies, and address the multiple shift problem. As well, the deteriorating condition of educational facilities exacerbates the problem: a high percentage of schools are unsuitable for use or have buildings about to collapse (15 percent of all school buildings) or need comprehensive refurbishment (25 percent of all school buildings), making them unable to endure the pressure and density of multiple shifts. This picture becomes clearer when we know that the age of the majority of these buildings has exceeded their life expectancy or that they were built during previous decades without meeting required stability regulations. This is in addition to the shortage of facilities (laboratories, sport fields, classrooms, computers, and so on), and the fact that many schools are built of clay. These types

of schools represent yet another significant problem: there are 656 such schools distributed in most provinces, with 26.4 percent of them in the province of Dhi Qar— more than in other provinces. It is followed by Salah ad Din, Ninawa, Kirkuk, Ad Diwaniyah, Wasit, Maysan, Diyala, Al-Anbar, and Babel, and they are followed by Baghdad, Al Basrah, and Al-Muthanna. These schools are concentrated in Iraqi villages, rural areas and remote areas, and do not exist in Karbala and An Najaf.

There are some schools with supplementary buildings made of clay—84 buildings in all, 80 percent distributed mostly in the province of Babel, 8 percent in the province of Al Muthanna, 7 percent in Diyala, and 4.8 percent in Karbala.

8.1.1.3 Spending on Higher Education

Allocated funds for higher education continued to decline during the years after the fall of the previous regime. However, Table 56 shows that the overall education sector's budget increased (except for the Kurdistan region) from 605 billion dinars in 2004 to approximately 2.5 trillion in 2008, increasing from 3.2 percent to 5.6 percent of the budget. Regarding the investment budget, the share of the education sector was very low and did not exceed 3 percent in the best case in 2007, and decreased to 1 percent in 2008. In higher education, the highest

Table 56 Development of Expenses for Higher Education Sectors in Iraq (Except Kurdistan) for the Years 2004–2008 (millions of Iraqi dinars)

Budget	2004	2005	2006	2007	2008
1. Current budget	19,026,800	28,431,168	39,062,163	39,062,163	44,190,747
2. Investment budget	1,118,300	7,550,000	9,272,000	12,665,305	15,671,227
3. Total	20,145,100	35,981,168	50,963,161	51,727,468	59,861,974
4. Current budget for education (except Kurdistan)(1/4)	605,135	1,367,696	1,589,720	1,928,112	2,470,319
5. Percentage	3%	5%	4%	5%	6%
6. Investment budget for education (except Kurdistan)	27,990	13,483	22,000	366,000	150,000
7. Percentage (6 ÷ 2)	3%	0%	0%	3%	1%
8. Investment budget	-	368,541	-	10,061,305	11,671,227
9. Investment budget for higher education (except Kurdistan)	-	-	-	258,971	200,000
Percentage (8 ÷ 7)				3%	2%

Source: Ministry of Education and the Ministry of Higher Education and Scientific Research, Planning Departments

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percentage was 2.6 percent of the total investment budget of 2007. This reflects the low priority given to investment in higher education.

8.1.1.4 Education and Social Variables

Violence

Wars and crises have left deep psychological scars in Iraq and create serious challenges to the educational process—represented, inter alia, by a high percentages of dropouts, especially among females, low educational standards, and weak qualifications among graduates.

Gender Gap

In most areas of Iraq, females do not have the same access to education as males, at all levels: they represent 43 percent of the total number of students for the academic year 2007/2008. Many practices and traditions, such as marrying girls off at a very young age, play a role in their lack of presence in schools. Other key factors in limiting opportunities are poverty and the limited number of girl's schools in rural areas. This encourages fathers to prefer to educate males, not females. Most of those influenced by this factor are in remote areas, isolated, or otherwise marginalized areas. Moreover, in most cases, females tend to study the arts and literature, whereas males tend to study science and technology. This makes females unable to compete with male peers in the labor market.

Guaranteeing the Quality of Female Graduates

The education sector has seen some positive developments, the result of the opportunities for anyone of either gender to pursue education, especially higher education and graduate studies.

The increase in the numbers of students enrolled at all educational levels without appropriate infrastructure and educational staff, has negatively affected the quality of education and its ability to keep up with international changes and the requirements of globalization.

Despite the absorption in private education of a number of elementary and secondary school students (especially in urban areas), private education, like public education, is encountering many hurdles. The shortage of facilities and educational supplies is probably the most important of them. Therefore, many secondary graduates are not qualified for admission to universities and are also unqualified for the labor market.

Justice and Equality of Opportunity

The studies conducted by the Central Department of Statistics and Informatics have shown that there is a clear inconsistency in educational levels among provinces, and between the rural and urban areas. This inconsistency has been a significant challenge to development. The weakness of education infrastructure is clearly visible in quality and quantity in remote rural areas and sporadically in poorer urban neighborhoods.

8.1.2 Challenges

8.1.2.1 Rise in Illiteracy Rates

The levels of illiteracy in Iraq reached a noticeable high during the past two decades along with a decline in the levels of reading and writing as the percentage of illiteracy to 28 percent of the total population aged 10 years and older. These percentages clearly vary between rural and urban areas, and between provinces. The increase in illiteracy levels contributes to reducing Iraq's rank on World Bank's Human Development Index.

8.1.2.2. Significant Deficit in Educational Facilities

The structural inability of premises to absorb students and the inability to offer educational opportunities are two of the main reasons that drove waves of students to flee the educational system, resulting in discrepancies in opportunities for education similar to the discrepancies in economic and social opportunities among provinces. Therefore, the lack of justice in distribution of education opportunities caused by making education available to all has hindered the ideal allocation of available resources and led to decline in the internal efficiency of the system. Moreover, there is a further obstacle in lack of mobility from one educational level to the next: for every three elementary schools, there is only one intermediate school (2006/2007 data). This makes the advance of graduates from one level to the next dependant on availability of facilities, not on ability, which drives some families to send their children to geographically remote schools that increase education costs.

8.1.2.3 Low Availability of Educational Opportunities

The number of school-age students (6-23 years) enrolled in schools decreased by 58 percent in 2007/2008. The dropout levels were 2.4 percent at the elementary level and 2.8 percent at the secondary level, with variations according to province, gender, and environment. This weakness was exacerbated by the failure to apply the provisions of the Law of Compulsory Education at the Elementary Level and failure to ensure that children attended and continue their studies. These factors were in addition to the influences of poverty, the poor economic status of the family, and the practice of child labor. In higher education, the percentage of dropouts reached 3.1 percent during the academic year 2007/2008. This is considered an acceptable indicator.

8.1.2.4 Limited Funding

The education sector does not receive sufficient funding to satisfy the requirements of comprehensive reform. This issue should be among the top priorities of the development plan. Furthermore, most of the financial allocations (94.4 percent) are currently paid as salaries; with the going towards other things such as capital investments. More funds must be allocated to improve the type and quality of education. As well, the expense distribution data at the various educational levels indicate inefficient spending—in addition to a tendency to favor higher education over lower levels, favor urban areas over rural areas, and males over females. This is obvious in the services that are offered to these groups.

8.1.2.5 Academic Curricula

Despite efforts since 2003 to develop courses for all levels of study and to provide education necessities (libraries, laboratories, modern teaching techniques, smartboards, roving laboratories, electronic library, computers and their accessories) to a considerable percentage of schools and institutions of higher education, there is still a need to develop study courses and provide associated supplies to keep up with international developments.

8.1.2.6 Administrative and Educational Capabilities

The shortcomings in the abilities of administrative and educational staff are the result of their limited access to updates and developments in their fields or professions. This is in turn the result of few available and ongoing training opportunities. The weakness of teacher training institutions and programs, and the staff's lack of motivation and efforts to develop, polish, and renew their skills also play a role.

8.1.2.7 Poor Quality of Education

Education in Iraq has suffered from severe deterioration due to the decrease in spending, the lack of supplies, the collapse of infrastructure, and overcrowded schools. These are compounded by the continuing prevalence of classical teaching methods that focus on lectures, memorization, and failure to stress analysis, deductive skills, and the spirit of initiative and creativity—all of which fail to optimally encourage student engagement.

8.1.2.8 Lack of Harmonization and Coordination between Graduates and the Job Market

The lack of coordination between educational institutions and the labor market has resulted in the lack of coordination between approved study, practical training programs, the needs of the labor market, and the requirements of the economic system, especially among vocational training programs.

8.1.3 Vision

Development of truly enabling conditions that contribute to raising educational levels, pursuant to standards that ensure quality; and establishment of an educational system that provides the foundation that enables an individual to be independent and develop the creative abilities necessary for independence, to achieve sustainable development objectives and create a cooperative environment that strengthen the values of good citizenry.

8.1.4 Objectives

The most important objectives are the following:

Kindergartens

- Achieve an enrolment ratio of 60 children/1000 of the population ages 4-6 years by 2013/2014
- Achieve the ratio of 130 children/kindergarten by 2013/2014
- Achieve the ratio of 14 children/teacher by the year 2013/2014.

Elementary

- Admit 98 percent of children at age 6 who are included in compulsory education and supervise their continuation until they finish their education or reach the age of 15
- Absorb 98 percent of the population aged 6 –11
- Maintain the ratio of 18 students/teacher by the target year.

Preparatory

- Enrollment of 97 percent of elementary level graduates to the preparatory level

Secondary

- Achieve the ratio of 350 students/school by the target year
- Achieve the student/teacher ratio of 14:1 by the target year.

Vocational Education

- Accept 15 percent of the graduates of the preparatory level at the vocational preparatory level by the target year
- Maintain the ratio of 6 students/teacher or trainer by the target year
- Maintain the student/teacher ratio of 14:1 by the target year.

Teacher Training Institutes

- Achieve an acceptance ratio of 2 percent of the graduates of the preparatory school
- Achieve the student/teacher ratio of 17:1 by the target year
- Gradually transfer to training educators at university levels.

Higher Education

- Maintain levels of current enrolment of the total number of the graduates of preparatory academic education, and 9 percent of the graduates of the professional education that is 14.6 percent of the technical diploma, 71.8 percent of the university education and 19.2 percent of the technical colleges
- Keep the student/teacher ratio at the university level at 12:1, and at the technical teaching level at 17:1 .

Eradicating Illiteracy

- Eradicate illiteracy in the age group of (15-45) years by the target year
- Achieve the ratio of 30 students/center by 2014

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- Achieve an improved ratio of enrollment at youth schools of those aged 10-14 years— 13,324 students with a percentage of enrollment of three percent
- Achieve the ratio of 20 students/teacher by 2014.
- Achieve a ratio of 19 students/teacher by the year of the objective
- Achieve the ratio of 107 student/school by the year of the objective
- Add 4,497 teachers in 2013/2014, an average annual increase of 750 teachers.

8.1.5 Quantitative Needs

Kindergartens

- There will be a need for additional 437 kindergartens in 2013/2014, an average annual increase of 73 kindergartens.
- The number of the children who enroll by the target year will be 133,049, an average annual increase of 22,175 children.
- There will be a need for an additional 56,908 teachers by the target year— an annual increase of 9,484 teachers.
- There will be a need for an additional 2,615 schools by the target year—an annual average increase of 436 schools—to meet the student increase of 663 per school and to replace clay schools at an average of 111 schools per year (424) and to eliminate the three-shifts schools at a rate of 71 per year (1,676) and eliminate 50 percent of two-shift schools at a rate of 279 schools per year.

Secondary

- The number of students who will enroll at the secondary level will increase to 1,847,112.
- The need for additional teachers by the target year will be 17,191 at a growth rate of 2,865 teachers per year.
- There will be a need for an additional 913 secondary schools by the target year, with an annual average increase of 162 to accommodate the increase in the number of students (10) per school and to replace clay schools with an average of 2 schools per year, (83) and to eliminate the need for 3 shifts with an average of 14 schools annually, (763) with an average of 127 schools annually to eliminate 50 percent of double shifts at schools.

Vocational Education

- The number of students who will enroll in vocational schools will increase to 72,188 by the target year.
- There will be a need for an additional 870 teachers by the target year.
- There will be a need for an additional 73 schools by the target year.

Teacher Training Institutes

- The number of students who will enroll in teacher training institutes by the target year will be 78,972, an annual increase of 13,162 students.
- There will be a need for an additional 471 teachers by the target year, an annual average increase of 78.
- There will be a need for an additional 54 institutes by the target year, an annual average increase of 9.

Higher Education

- The number of students who will enroll in universities will be 308,745, at technical institutes 42,958, at technical colleges, 61,647 by the target year, an annual average increase of 51,457 students at the university level, 7,160 at institutes, and 10,274 at technical colleges.
- There will be a need for additional 2,030 teachers at universities, an annual average of increase of 338 teachers, and a need for an additional 2,058 teachers at technical institutes, an annual average increase of 343 teachers.

Eradicating illiteracy

- There will be a need for additional 90,000 teachers by the target year.
- There will be a need for additional 60,000 centers by the target year.

Youth schools

- There will be a need for an additional 207 teachers by the target year, an annual average increase of 34.
- There will be a need for 25 schools by the target year, an annual average increase of 4.

8.1.6 Means of Achieving the Objectives

1. Conducting evaluation studies of the efficiency of primary and university education programs in Iraq
2. Adopting a wide range of planning and finance options for the processes of education and training
3. Developing and implementing educational support programs that constitute investment programs that allow all partners, regardless of their components, to support this sector at all levels
4. Issuing and ratifying suitable legislation for educational sectors, strategic plans and basic services for schools, institutes, universities and teacher service centers
5. Developing guiding judgment and responsible plans in the field of education
6. Supporting and strengthening the system of managing educational information
7. Responsibly carrying out different semi-sector policies like social gender, developing early childhood education and information and communication technology

8. Encouraging the private sector to invest in field of education under supervision of competent authorities
9. Initiating the process of course reform to develop related skills and achieve competitive education on the national and international level. The private sector can also play an effective role in curriculum building to guarantee their development in accordance to the requirements of the labor market
10. Achieving balance between education and the requirements of the labor market will require applying an acceptance policy that depends on the following considerations:
 - The averages of the population growth, the percentages of demand on higher education within an education plan in accordance with the comprehensive economic and social plan and the labor force plan to provide the market with qualified laborers in addition to new demand of the market itself.
 - Adopting an acceptance policy that takes into consideration the capacity of universities and institutes as a guide in drafting current acceptance courses the principle "Not everyone who completes the preparatory level must study at university."
 - Taking into consideration the role of the private sector in the development process and the role of domestic and foreign investment in the foreseeable future, and providing it with skilled staff
 - Building the acceptance policy in higher education on cooperation and coordination between the Ministry of Higher Education, the Department of Technical Education, and the Ministry of Education to guide graduates of preparatory education towards higher education
 - Supporting the independence of universities to enable them to draft their educational policy and show their specialties in a way that strengthens their interaction with the local society
 - Being open to international universities and entering mutual agreements to follow academic curricula developments with the objective of developing the curriculum at Iraqi universities and the Department of Technical Education to elevate them to the level of established international universities.

8.2 Health Sector

Health conditions in Iraq are considered some of the worst in the region. Indicators over the past twenty years show that the health of the population has seriously deteriorated. The survey of the life standards in 2004 shows that Iraq ranks low compared to other countries in the Middle East in attaining the development objectives issued by the United Nations. We also find a serious deterioration in these indicators compared to previous statistics.

The health system includes all preventive and treatment organizations, including prenatal health centers, school infirmaries, fixed and roving health centers, laboratories, pharmaceutical companies, and others that are directly and

indirectly linked to the citizens' health. It is no secret that Iraq has encountered extreme threats to health because of wars, blockades and the decline of human, financial, and technical capabilities in the sector, along with environmental deterioration and the destruction of infrastructure and the deterioration of citizen's economic capabilities. All of these conditions have led to an increase in deaths, a decline in health services, and increased psychological and financial burdens on citizens.

8.2.1 Previous Policies

Most of the plans and strategies before 2003 were characterized by their orientation toward central planning and implementation. The governmental sector remained dominant throughout all the previous decades, with only a marginalized role for the private sector. The Ministry of Health remained the only main provider of health services. Though these strategies have recognized preventive care's importance, they did not prioritize healthcare center roles because wars and crises made sufficient supplies unavailable.

Iraq has witnessed an increase in the averages of non-contagious diseases such as heart disease and diabetes. Moreover, there has been an increase in pollution, resulting in the spread of cancer. Despite the decrease in death rates of newborns and children under five in the 1970s and 1980s, after 1990 these increased because of wars and the economic blockade. The levels of health services provided to citizens seriously declined, qualitatively and quantitatively, because of decreased spending on health, poor planning, and the unfair distribution of health organizations and their staff in Baghdad and provinces. The training of medical and health staff was neglected, so they became isolated from the world and unable to gain modern knowledge and expertise. This caused mass overseas migration of educated Iraqis.

8.2.2 Reality

The Ministry of Health has adopted a health system that depends on primary health care as a foundation that includes providing quality health services as the primary service level; guaranteeing the integration of those services with the second level (public hospitals) and the third level, specialized centers. This will be achieved by using the family healthcare system in health centers and using the health visitor system, which introduces the bundle of fundamental health services to health centers, including monitoring and exams for women and children. These services are also provided through mother-and-child hospitals.

8.2.2.1 Institutions and indicators

Primary health centers have a labor and delivery room and an emergency room. Approximately 250 primary health care centers were created after 2003. Between 2003 and 2008, that number increased by 2.8 percent and the indicator of a main health center for each 10,000 citizens reached approximately 34,911 in 2008; the level of services provided and their quality was approximately three times less than the required level. The number of main health centers was 782, the indicator of a subsidiary health center managed by health professionals for each 5,000 citizens was approximately 58,460, and the number of the subsidiary centers was only 467. The gap between the

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target and reality is wide. This requires increasing allocations and efforts to achieve the required number of centers.

Regarding the distribution of health centers among provinces, there is a clear discrepancy from one province to another. This reflects an unjust distribution of services. While there are no more than 171 centers in the capital, Baghdad, which has more than 6 million inhabitants, and we find that this number increases in the northern provinces. For example, Al Sulaymaniyah has 387 centers but less than one million inhabitants. According to this indicator, the indicator of a health center for every 10,000 citizens reached 41,741 in Baghdad, making it the most deprived province because of its high population density. It is followed by Wasit, where this indicator reached 28,123 and Al Diwaniyyah, with 25,800.

The sufficiency and efficiency of health services provided is demonstrated in table 57, which shows their decrease for the years 2002-2007 as the average of doctors (specialist and non-specialist) for every 1,000 citizens was less than one (0.006), and the ratio of doctors/nurses was (1:0.4), also less than one. The ratio of doctors/nurses (male and female nurses) was (1:1.2). This ratio does not meet the required ratio of (1:4). There is also an increase in the ratio of inhabitants/hospital and the ratio of inhabitants/popular clinic. The percentage of bed occupancy is high, but it did not reach the required 90 percent.

On the other hand, data on psychological health for 2006-2007 show that one-fifth of Iraqi families are prevented from meeting basic health needs, with rural areas more deprived than urban areas, averaging two-and-a-half times more than urban areas. The percentage in rural areas was 39.2 percent and in urban areas was 15.3 percent.

Surgeries performed in hospitals, of all types (minor, medium, major, highly selective) were approximately 700 thousand surgeries in 2008 compared to 560 thousand surgeries in 2007. Many highly selective surgeries (nervous system, brain vessels, implanting and analyzing bone marrow, open heart surgery, children's surgeries) are performed; there were approximately 81 thousand operations like this annually (table 57).

8.2.2.2 Reproductive Health and Family Planning

The high number of births taking place under the supervision of specialized healthcare staff is a positive indicator in the field of pre-natal health; it increased from 50 percent to 89 percent between 1990 and 2006. Births in health facilities for the years 2007 and 2008 increased from 62.3 percent to 64 percent. This reflects an increase in the levels of health awareness. The fifth visit of pregnant women to primary healthcare centers reached 30 percent for the years 2007 and 2008; the target was 90 percent. This means that the gap is still great between reality and what must be achieved in the years 2009-2013 according to the Ministry of Health strategy. The most important reason for the low percentage of visits the demographic change that resulted from migration between regions.

Fertility rates are still high compared to other countries, at 4.3 in 2006 (4.0 births in urban areas), and 5.1 in rural areas. The percentage of births in urban area hospitals is higher than in

rural areas, at 70 percent and 55.1 percent, respectively. It reached the highest percentage among educated mothers (higher education and secondary education), at 76.6 percent, compared to 46.8 percent for uneducated mothers. This shows the role of education in increasing awareness and healthcare for women.

3 Figure means that the health center meant to serve 10,000 thousand people serves 34,911 people.

8.2.2.3 Mortality of Children under the Age of Five

The decline in child mortality rates for children under five in Iraq has continued since 1990, from 62 per 1000 live newborns to 41 (2006). It continued its decline to reach 35 per 1000 live newborns in 2007 and 34 per 1000 in 2008. Despite the continuous decrease in these percentages, they are still high compared to some Arab countries. In the United Arab Emirates, the child mortality rates for children under five was 11 per 1000 live newborns, and in Qatar it was 11.5 per 1000.

Infant mortality has continually declined since 1990, from 50 per 1000 births in 1990 to 35 in 2006, 30 in 2007, and 29 in 2008. The percentage of infant mortality was 85 percent for children under five years old. These compare with 11 per 1000 in Kuwait, 26 per 1000 in Saudi Arabia and Jordan, and 15 per 1000 in Syria.

8.2.2.4 Maternal Mortality

Reducing maternal mortality is a fundamental developmental objective. The objective was to reduce maternal mortality by 75 percent for the period of 1990-2015. In Iraq, maternal mortality was 117 per 100,000 live newborns in 1990. This rate decreased to 84 in 2006, still high compared to the rates in the United Arab Emirates at 0.001 per 100,000 live newborns, in Saudi Arabia 1.8, and in Jordan 41.

8.2.2.5 Life Expectancy at Birth

Life expectancy at birth in Iraq is low, at 58.2 years in 2006, down from 65 years in 1987. This is attributable to the deterioration of health and nutrition. It is considerably less than in neighboring countries: 77.3 years in Kuwait, 71.9 years in Jordan, and 73.6 in Syria.

8.2.3 Challenges

Despite some achievements in the past few years, the health sector is still facing many problems and challenges resulting from the exceptional circumstances of Iraqi society. The poor health of inhabitants has had negative effects on efficiency and productivity in the labor force for the entire country. The healthcare system continued to suffer from a gaping lack of financing, which had direct negative effects on the nature of the services provided and the scarcity and insufficiency of medical supplies. Huge numbers of patients are treated in Iraqi hospitals, exceeding facilities' capacity many times over. Yet bed occupancy in hospitals, approximately 65 percent of capacity, is low. There are other challenges related to the non-utilization of information technology in medical cases. All these challenges have made work conditions in the healthcare field unstable. The most prominent challenges that the medical sector faces are noted below.

Table 57 Key Health Services Indicators for Iraq 2002 - 2008

Indicators	2008	2007	2006	2005	2004	2003	2002
Civil Hospitals	62	60	64	68	63	65	69
Government Hospitals	159	156	155	156	155	152	143
Total Hospitals	221	216	219	224	218	217	212
Public Clinics	334	338	349	389	385	402	345
Total number of Beds	31,794	30,941	29,975	28,492	29,339	28,430	27,249
Number Admitted to Hospitals	2,027,537	1,780,719	1,869,562	1,869,060	1,924,787	1,664,059	1,703,705
Number of Patients	18,215,749	18,871,426	51,984,775	51,100,834	52,275,414		56,487,631
Total Doctors	16,721	16,299	16,518	16,788	16,022	14,747	11,024
Total Dentists	3,859	3,517	3,545	3,659	3,290	2,785	2,182
Total Pharmacists	4,399	3,358	3,448	2,977	2,531	2,313	1,634
Total Medical Professionals	24,979	23,174	23,511	23,424	21,843	19,845	14,840
Total Nurses	7,307	7,184	6,623	6,193	5,600	5,521	3,966
Total Nursing Professionals	34,823	32,833	33,332	30,137	24,763	21,068	12,533
Total in Health Professions	74,081	96,534	73,355	69,444	65,615	60,239	30,328
Number of Pharmacies		3,994	3,927	3,967	3,743	3,700	3,538
Number of Laboratories	634	598	598	599	538	631	486
Number of Ambulances	1,759	1,919	1,520	1,001	838	283	
Physicians per 1000 persons	0.6	0.6	0.6	0.6	0.6	0.6	0.4
Doctors to Nurses	0.4	0.4	0.4	0.4	0.3	0.4	0.4
Doctors to Nurses	2.1	2.1	1.8	1.8	1.5	1.4	1.1
Nurses per 1000 persons	1.2	1.1	1.2	1.1	0.9	0.8	0.5
Population to Hospitals	125,324	137,417	131,554	124,835	124,493	121,383	120,589
Population to Clinics	82,924	87,817	82,551	71,884	70,492	65,523	74,101
Bed Occupancy Rate	47.5	57.1	49.8	50.2	52.4	45.3	44.1

Table 58 Annual Allocations and the Percentage of Spending in the Health Sector for the Years 2005-2008 (millions of Iraqi dinars)

Year	Health	Spent amount	Percentage of spending percent
2005	38,000	-	-
2006	31,542	-	-
2007	98,250	28,280	28.8
2008	142,263	79,533	55.9
Total	310,055	107,813	34.8

- Limited resources for the health sector: the percentage of spending on the health sector was 4.9 percent of total governmental spending for the years 2002-2006—a low percentage and insufficient when compared to the recommendations of the International Health Organization that developing countries spend approximately \$34 per individual on healthcare. This has burdened the country with an elevated percentage of sick people and shortage of medical services.
- This is in addition to the continuous concern regarding the inability to provide required medical supplies, to raise level of medical care and achieve the developmental objectives of the Millennium Development Goals. Table 58 shows the average annual allocations for the medical sector and the percentages of implementation.
- Shortage of health organizations (hospitals, main and subsidiary health centers, and so on)
- Shortage of health and medical staff, and of organizations that provide health services
- Destruction of health sector infrastructure
- Inequal distribution of health services among provinces and between urban and rural areas
- Demographic changes in regions due to migration, a serious challenge to the practice of health policies
- Lack of a clear and approved demographic policy Unstable and unplanned increases in population that strain medical services

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9. Problems related to water, electricity, sewage, discharge of medical and nonmedical waste and pollution of the environment
10. One fifth of Iraqi families are deprived of basic health needs; rural areas are more deprived than urban areas
11. Applicable legislations and laws are old and not orientated toward health care reform
12. Weakness in legislations and laws that are related to environmental care
13. Weak citizen participation resulting from dissatisfaction with services provided
14. Limited role of the private sector in providing health services.

8.2.4 Vision

A healthcare system that adopts primary healthcare as a foundation, including health services to satisfy individuals' needs according to international health standards to the extent possible.

8.2.5 Objectives

The five-year development plan for the health sector aims at building an integrated and effective system that relies on public health fundamentals to ensure the health of the country. This is done by supporting the work of providing public health care and primary healthcare to reduce the rate of sickness and death for all groups in society in general, and children and mothers in particular, including the eradication of contagious diseases and control of non-contagious diseases.

Health policies in Iraq today aspire to reconstruct the system of health services from a treatment system to an alleviative and preventive one that will reduce the burden of endemic diseases. These policies and programs should work on achieving the following objectives:

1. Reducing the patient/doctor ratio, increasing the number of beds according to the population, seeking justice in the distribution of health organizations between rural and urban areas, and increasing the number of organizations performing specialized medical tasks and providing them with the necessary equipment and supplies
2. Expanding and developing current health organizations by 50 percent
3. Establishing advanced health organizations in all provinces to increase the number of beds in health departments by 41 percent
4. Expanding primary healthcare services by increasing the numbers of health centers to cover the needs of health departments in Baghdad and other provinces by 20 percent
5. Increasing the number of specialized health centers to cover the needs of provinces for specialized services (specialized surgeries – preventive diagnosis) by 50 percent.

8.2.6 Means of Achieving the Objectives

1. Developing high-quality infrastructure and services
2. Building partnerships between the private and public sectors, supporting integration between them at all levels of construction, continuity, and efficiency
3. Controlling contagious diseases, controlling hepatitis, and eradicating neonatal tetanus
4. Expanding the range of available health services by establishing new organizations, especially in rural areas, implementing substitute projects, roving health centers, environmental study teams, commissions for evaluating the health of local societies, and so on
5. Integrating activities of formal health organizations and informal organizations and societies such as the Society of Prenatal health, Protecting the Family, women's organizations, and municipality councils to specify realistic needs and the possibilities of finance and participation
6. Developing nursing institutions and colleges, encouraging enrollment, developing medical institutions and increasing the number of graduates in addition to establishing more medical colleges, developing their courses, and modernizing them
7. Using all publicity media to deepen citizens' health awareness
8. Advancing health education provided by educational organizations, civil society organizations, and municipality councils through courses, symposiums, and publications
9. Developing national pharmaceutical industries, protecting them, and providing technical and scientific supplies in cooperation with all related formal and informal departments and organizations
10. Strengthening the capabilities of the health practitioners such as doctors, assistants, and managers, by providing specialized training and expertise to help improve the system
11. Developing a health card system to make it part of comprehensive insurance for citizens
12. Attracting migrated professionals who can participate in developing the system
13. Providing advanced technology for diagnosis and treatment
14. Developing a system for health insurance in the context of a comprehensive system of social insurance
15. Adopting a system of comprehensive quality management that guarantees effective planning, performance measures, and continuous improvement of performance
16. Finding a research and study system suited to health and environmental problems and giving an effective role to the private sector to integrate with the public sector in providing health for all
17. Caring for school health and environments and supporting coordination with educational organizations to promote school health

18. Guaranteeing the safety of food, health, and the workplace.

8.2.7 Development Indicators in the Health Sector

Indicator	Reality /2008	2009	2010	2011	2012	2013	201	Objectives
Health center (in the rural areas)	-	-	100	200	300	400	500	500 health centers for those who have no health services
Non-specialist doctors/citizen	0.8	0.9	0.96	1	1	1	1	Non-specialist doctor/ 2,000 citizens
Non-specialist doctors	11,512	12,788	14,000	15,000	16,000	17,000	18,000	18,000
Specialist doctor/professional bed for lying down	6.1	6.1	6.3	6.5	6.6	6.8	7	Specialist doctor/7 beds ready for lying down
Dentist/citizen	7,177	7,286	7,022	6,409	5,827	5,368	5,000	Dentist/ 5,000 citizens
No. of dentists	3,859	3,859	4,124	4,654	5,272	5,890	6,508	6,508
Dentists/citizen	0.7	0.7	0.76	0.82	0.88	0.94	1	One/5000 citizen
Pharmacists/citizens	6,206	6,206	6,282	5,928	5,562	5,256	5000	One pharmacist /5000 citizens
No. of pharmacists	4,399	4,399	4,610	5,031	5,523	6,015	6,507	6,507
Pharmacist/citizen	0.8	0.8	0.84	0.88	0.92	0.96	1	1,132,254
Health professional/1000 citizen	1.4	1.4	1.8	2.2	2.6	3.1	4	4
Nursing staff/bed	1.1	1.1	1.2	1.5	1.6	1.8	2	2 staff members/bed
Bed/1000 citizens	1.1	1.2	1.3	1.3	1.4	1.4	1.5	2.5 beds / 1,000 citizens
Ratio of bed occupancy percent	47.5	47.5	52	56.5	61	65.5	70	70
Friendly hospitals for children	32	33	43.4		5.8	37.2	38.6	40
Infant death rate per 1000 live newborns	35	35	43.4		33.8	33.2	32.6	32
Percentage of underweight children, under age five (%)	9.1	9.1	8.7	8.3	8	7.6	7.2	7.2
Maternal death rate 100,000 live newborn	For 2006-2007 84	84	82.8	81.6	80.4	79.2	78	
Percentage of malnourished (%)	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Percentage of one year old children who are immunized against measles (%)	80	80	82	84	86	88	90	100
Percentage of births supervised by specialized health staff	For the year 2006 89	89	90.2	91.4	92.6	93.8	90	
Ratio of using condoms to the usage of contraceptive	For 2006 1.1	1.1	1.8	2.6	3.4	4.2	5	
Percentage of citizens liable to the danger of malaria who take effective precautions against malaria and treating it	For 2006 18.3 treatment 7.4 prevention	18.3	34.5	51	67.3	83.6	100	
Percentage of infection with malaria per 100,000 of citizens	For 2008 0.03	0.03	0.02	0.02	0.01	0.01	0	

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Percentages of relationship with tuberculosis per 100,000 citizens	78	78	70.6	62.8	55.2	47.6	40	
Death rates related to tuberculosis per 100,000 citizens 87	11	11	10	9	8	7	6	
Percentages of discovered tuberculosis cases that were treated under the supervision within the frame of the treatment system for a short term under control (%)	For 2008 87	87	87.6	88.2	88.8	89.4	90	
Percentage of coverage with the fifth visit of the pregnant mother for the primary healthcare (%)	30	32	40.7	53	65.3	77.6	90	90
Discovering the cases of tuberculosis (%)	43	43	84.3	53.8	59.2	64.6	70	70
Percentage of immunization coverage for pregnant women	80	80	82	84	86	88	90	90
Percentage of immunization coverage for the women within the age of fertility	29	29	39	49	60	70	80	80
Average of spread of AIDS among women whose age is between 15-24 per 100,000	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

8.3 Housing

Proper housing is a right of every person and a basic need that should be obtainable in both rural and urban areas within a healthy environment with integrated services and facilities. This is ratified by International conventions and national constitutions, including the Iraqi constitution. Housing is not only a right and a basic need; it plays an important role from an economic point of view and in ensuring societal prosperity. In general, investments in housing represent 20-30 percent of total fixed capital formation in the countries that have effective housing programs.

In the countries that have a surplus of financial and human resources, or unutilized resources, investment in housing becomes one of the means of utilizing these resources and transferring them to productive resources—an important means for the continuity of the national economy. Since external investments in housing is low compared to investments in other sectors, investments in housing become of great importance to activate sectors related to housing such as the construction and engineering industries. Moreover, it generates employment opportunities that can help reduce Iraq's unemployment rates.

8.3.1 Previous Housing Policies

National interest in housing in Iraq dates back to the beginning of the 1950s, when many studies were drafted at the country

level. The most prominent are the studies of Doxy Ades, a Greek organization, in 1956, the general housing schedule of Paul Servis¹, a Polish organization, in 1975, a study of the housing policy made by a group of Iraqi researchers in 1986, and the 1998 strategy of the comprehensive spatial development of Iraq until 2000. These studies, in addition to others, have tried to identify the housing reality and needs in Iraq, its provinces, and its rural and urban areas. It also tried to estimate the housing deficiency and the financial requirements to provide housing in the medium term and long term. All these studies indicated that there is a housing deficiency and need that are increasing with time, estimated by the Doxy Ades study to be 453,000 housing units in 1956, and by the Paul Servis study to be 3.38 million housing units, and by Iraqi researchers to be 402 million.

Despite this early interest in housing studies and schedules, and interest in national development plans to achieve the aim of providing a housing unit for every family, there has been no strategy or comprehensive national policy for housing till now. The exception is the general housing schedule drafted by Paul Servis², which is close to a comprehensive strategy. Instead of a comprehensive housing policy, the state adopted a group of partial policies and procedures that since the 1960s contributed to the current demographic credit in urban areas only and in

¹ The names of these companies may not be accurate because they are transliterated from Arabic into English (translator).

all the provinces of Iraq. The policies and procedures can be summarized by the following:

1. Providing residential housing plots of land with subsidized prices, especially for civil servants and some other sectors
2. Providing credit facilities conditional loans to build the housing units for a period of (20-30) years with the value of these facilities reaching approximately 80 percent of the total cost of the housing unit
3. Exempting rental housing units from taxes for a certain period and then imposing low taxes on them and on transferring ownership of the housing properties
4. Providing domestic and imported construction materials at subsidized prices
5. Providing supportive services that are related to housing at very subsidized or nominal prices. This has reduced the costs of building housing units and enabled the group of employees and those who have limited income of building their housing units.

These partial policies increased levels of housing production between 1975 and 1985 to approximately 50,000 units annually with an annual growth average of 0.07 percent—more than the annual average of the growth of the population of Iraq. The cessation of these supportive and stimulant policies in the middle of the 1980s was due to the financial pressures that the state was under as a result of the Iraq/Iran war. The wars and the economic blockade have had negative effects on the economic performance of the housing sector, especially in housing production. The share of the construction sector in the gross domestic product went from 6.5 percent in 1989 to 0.47 percent in 1996. This situation became worse during the period of economic blockade (1991-2003) and this has contributed to transforming the housing issue from a housing deficiency to a housing problem to a housing crisis. This situation contributed to reducing the number of housing units built between 1989 and 1996 by 97.5 percent compared to the height between 1975 and 1985. The total annual housing production of the entire country did not exceed several thousand housing units per year.

The reconsideration of the housing sector and its inclusion in the Oil-for-Food program in 1996 has helped in a limited way in achieving some improvement in the housing market. Between 2000 and 2004, approximately 200,000 housing units were built through re-supporting the housing sector by providing housing lands and construction materials subsidized by the state, in addition to loans to some groups, especially the military.

There was great attention given to the housing sector by the National Development Strategy between 2005-2007 and 2007-2010, in the form of dedicating approximately 28 percent of total investment spending to the housing sector. This spending is proportionate first, with the averages of capital formation of this sector within the overall national economy, and second, with the size of the problem; the housing deficiency is very large. Despite this interest, investments between 2004 and 2009 were 5.5 percent in 2004 and only 1 percent in 2009.

This reflects the inability of government investment to counter the problem and indicates the necessity of depending on the domestic and foreign private sectors to confront this problem.

8.3.2 Reality

The need for housing was not satisfied by the aforementioned offer, which was encumbered with many different burdens, including the severe shortage of urban land suitable for construction; the severe shortage of funding; the deterioration of housing credit due to the lack of investment in housing maintenance; and the lack of a legal and legislative structure to stimulate the private sector to produce sufficient houses to satisfy the needs of the increasing population and compensate for improper housing credit that had exceeded its economic lifespan.

The estimates of housing deficiency and housing needs in different studies, and the results of economic and social studies completed recently indicate the need for 1 million to 3.5 million housing units by 2015. Moreover, regardless of the assumptions that were used as a basis for these studies and estimates to specify the suitable typical unit for housing and evaluate the existing circumstances, the following summary of facts is pertinent:

1. The housing credit in Iraq is estimated at 2.8 million housing units
2. There is a large housing deficiency and a great need for providing housing units—no less than 1 million in the best case. For the purposes of this plan, the national housing policy in Iraq that was launched by the United Nations Human Settlements program in September 2009 will be adopted
3. 27 percent of families do not have houses and the average house occupancy is higher than the acceptable average of 1.37 families per unit and 2.23 individuals per room
4. 10 percent of families and 11 percent of citizens occupy housing units that lack the minimum health and environmental conditions that must be available in any proper house
5. There is severe variation in the levels of satisfying the need for housing in different provinces
6. The deprivation indicator in 2007 reached 28.7 percent, with percentages of deprivation from 35-45 percent in the provinces of Dhi Qar, Maysan, Al Qadisiyyah, Karbala, Babel, and Al Sulaymaniyah. The following provinces have registered the lowest level of deprivation in the field of housing: Al Anbar, Kirkuk, Diyala and Salah Al din, where the deprivation indicator was 4-21 percent.

The problems of deficiency, house overcrowding and unsuitable housing in rural areas were deeper than what they are now in the cities and small villages because previous housing policies for rural areas did not include privileges and facilities extended to urban areas. More than 46 percent of inhabitants of rural areas suffer from high housing deprivation.

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8.3.3 Challenges

Iraq will encounter serious challenges in housing in the next years, many of them inter-related. This requires dealing with them comprehensively, as one bundle. The main challenges in housing are as follows.

1. A large problem in the available land for housing regarding:
 - Severe shortage of land suitable for construction in urban areas, especially in the major cities
 - The limitation of available capital to fund housing, whether from the state or the banking system that currently rely mainly on giving loans to build housing units against mortgages
 - The limited the number of investors and companies in the housing sector, especially those who aim to serve low- and middle-income groups and areas with few inhabitants
2. The exacerbation of the problem of sporadic houses and illegally built houses, even inside the major cities, and the absence of any serious measures even to stop this phenomenon or improve and redevelop the houses in the sporadic housing areas
3. A severe deterioration of housing structures in the old cities and lanes with traces of Iraqi heritage and the absence of serious procedures and plans to protect, redevelop, or renew them according to their condition
4. The social preference of Iraqi families to live in single housing units, not in vertical houses (buildings). This deepens the problem of providing housing land without transgressing on arable lands, especially around metropolitan areas.
5. The large housing deficiency—a need for approximately 2 million housing units in urban areas by the target year
6. The need to renew and redevelop most of the housing credit in rural areas, as most of them are built of non-durable materials and are unacceptable types of housing
7. Deterioration of the situation of housing credit due to the limited capabilities and shortage of investment in maintaining houses
8. The absence of a permanent system for managing land that transforms the land regularly for this purpose and the reliance on the method of jurisprudence and periodical decisions to distribute land to certain groups and classes
9. The incomplete legal and organizational structure that governs the investments of the private sector
10. The increase in the number of families who cannot obtain proper housing and the absence of programs and procedures to transform these families to potential consumers of houses in the housing market
11. The massive size of groups targeted with free housing (martyrs and political prisoners) which could exhaust most of the investment capabilities of the state in the housing sector within the term of the plan
12. The limited offer of construction materials that are produced

domestically and imported with good specifications compared with the expected need if an ambitious housing program is initiated.

8.3.4 Vision

Providing housing to the largest percentage of individuals and families to increase the options Iraqis have for type and location of housing.

8.3.5 Objectives

1. Improve the capability of home owners to improve and expand their existing houses
2. Raise the efficiency of producing houses and reduce their costs
3. Provide proper housing to the largest possible number of the families all over the country
4. Decrease overcrowding and occupancy to acceptable limits
5. Reduce the variations in levels of housing saturation between the different provinces, on one hand, and between urban and rural areas on the other
6. Increase the government's capability to confront the needs of special groups and the classes that cannot obtain proper housing
7. Improve the quality of new houses including the efficiency of using utilities and their environmental effects.

8.3.6 Means for Achieving Objectives

The Role of the Public Sector

The public sector must focus on preparing the housing studies and plans; controlling the quality of housing production, cost, and service; guaranteeing that housing offers are consistent with demand; and coordination among competent parties providing services and infrastructure for housing areas; and paying special attention to the needs of fragile groups, especially those with special needs, in addition to dealing with the legal, administrative, and technical obstacles to the growth of housing production in accordance with demand.

The Role of the Private Sector

The massive size of the challenge and the diverse needs of those who want housing make participation from different parties in housing production necessary. Inhabitants of urban areas need high-density houses in the form of multi-storey buildings that are usually built by large construction companies with substantial capital. At the same time, there is large demand for single family homes that can be satisfied by a larger group of construction organizations. Traditionally, most of the houses in Iraq are built by small contractors who work for a single client who designs and funds the house. The housing policy must provide suitable circumstances to enable all these groups to perform their roles in satisfying demand for housing. The private sector will remain the biggest provider of housing and the source for policies to the small, medium, and

large construction and building companies in the sector. At the same time, there should be a focus on the deprived groups of inhabitants and/or remote areas that have no capacity to attract private investment. It is also necessary to transform a number of public companies of the Ministry of Construction and housing to joint stock companies that specialize and have experience in producing houses

Funding Housing

Reforming the funding system for housing is an urgent issue. More development and expansion are required in the main funding organizations to enable short-term, medium-term, and long-term funding for developing, renewing, expanding, and buying housing.

Since housing is a long-term investment and can be used to stimulate economic activity, it is necessary to make resources flow into this sector efficiently so that all low-income groups can access it. It is also necessary for commercial banks to play an important role in the issuance of funding and to be capable of entering commercial funding activity, from which they have been absent till now. The new system for funding must aim to fund the commercial bank and the national fund for housing as secondary institutions for funding that can buy and sell current mortgages instead of offering direct loans to borrowers.

The Role of Local Administration

Local government is also responsible for realizing decentralization and taking a principal role in using land, infrastructure, and housing production for deprived groups and those with special needs and in providing the flow of resources efficiently to secondary cities and rural areas.

Managing Lands

Developing the systems for managing rural land more transparently and systematically is critical, as there is a great need for increasing the offer of reasonably priced land in rural areas and their surroundings. Demand for land for housing exceeds the ability of the public and private sectors together to satisfy it. This creates a challenge for state, regional and local governments. To achieve this aim, it is necessary to assert the following:

- Transfer from a highly centralized to decentralized land and urban planning regime
- Provide infrastructure for land dedicated to housing around the cities that are undeveloped
- Transfer to vertical housing to reduce pressure for land
- Diversify the sizes of plots used for housing to increase access to those with low incomes
- Increase orientation toward constructing new cities or subsidiary cities that lie outside the major cities to establish suburbs, especially if they have economic value.

Infrastructure

It is necessary to prepare comprehensive infrastructure for all future housing areas before commencing development work,

and to abandon previous styles of housing prior to providing infrastructure to the developed areas.

Managing and Maintaining Housing

A large percentage of housing in the old areas and in the center of the cities is not in good condition and in need of reconstruction; otherwise, it is unsuitable for occupancy. It is necessary to provide sufficient funding to reform and rehabilitate this housing; any new funding system must include funding for this purpose. Supporting systems of municipal and other local control and follow-up with increased attention to housing maintenance and longevity, especially rentals suffering from maintenance problems is essential.

Housing and Construction Materials

Iraq has the capability to satisfy its needs for essential materials, especially cements, building blocks, concrete masses, plaster, ceramic, Al-Kashi² and pre-made commodities like windows, plumbing supplies, electrical equipment, and the like. The production of these materials is below the required level; implementing the housing program for the term of the plan will require more production to handle demand. It is necessary to promote manufacture of these materials, develop their quality, reduce their production cost, and make them environmentally friendly. To support the housing program and participate in its success, it is necessary to support private sector factories and stimulate them to increase production, productivity, and quality, and to privatize public companies that produce construction materials and complete their qualification processes.

Sporadic Housing

Historically, Iraq enjoys a low level of expansion of such housing, but because of wars, blockades, and poor security after 2003, there was an expansion of illegal houses, sometimes caused by the return of refugees and emigrants. While types of illegal housing vary, all types are illegal either because the inhabitants do not have the rights to use the land or because the buildings were purchased without the approval of appropriate parties. Urgent attention is required to stop this serious phenomenon and to removing infringements according to a studied plan.

Legislation

The new policies and changes in the roles of the main actors in the housing sector demand new laws and an expansion of the housing legislative framework, especially in the field of urban administration and housing on the regional and local levels. There is also a need for new types of housing production, such as the wholesaling of land from the public sector to private sector and mixed companies. The other principal pillar for developing the new framework and new laws is in regulations and legislation for funding, to guarantee lenders can acquire assets in the event of default. This demands a comprehensive new law that includes mortgages, ownership, and resale of guarantees.

8.4 Tourism and Heritage Capabilities

Tourism, with its background of historical and cultural heritage,

² Al-Kashi is a decoration that contains a mixture of art, decoration and Arabic calligraphy in Iraq (translator).

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plays an important role in the economic, social, and cultural development in many advanced and developing countries. The statistical evidence, economic indicators, and sector history show that tourism will be one of the most important pillars of 21st century economy, along with wireless communications and information technology. The statistics of the international travel and tourism councils show that the tourism sector participates directly and indirectly in more than 10 percent of the International gross domestic product and in creating international capital and tax returns. For example, religious tourism in Saudi Arabia reached 12 percent of GDP and in Lebanon, in normal circumstances, reaches 10 percent of GDP. The role of tourism is also evident in exports with active tourism. The percentage of exports from tourism in the U.S. has reached 12 percent, in Spain 30 percent, in Austria 33 percent, and in Mexico 20 percent.

In addition to its important role in supporting and strengthening the national economy, tourism has developmental roles and advantages in other economic, social, cultural, and environmental contexts:

- Tourism has a double effect (tourism multiplier) that results from the success of tourism-related industries and services—estimated to number 50
- Labor is a compound industry that can use this advantage to deal with problems of unemployment and operation
- It is important to develop tourist regions, especially those that lack effective economic institutions compared to their tourism potential, as a way to develop these (often) rural regions
- Tourism contributes to developing religious, historical, and cultural sites, as these are popular attractions
- Tourism attracts foreign investment, as it provides good returns
- Finally, tourism stimulates civilized cultural exchange among different cultures.

8.4.1 History and Previous Policies

Despite Iraq's tourism assets and potential, this sector has not gained the necessary attention in the past decades, especially after the wars, sanctions, and blockades of the 1980s and 1990s. The sector has further and severely deteriorated after 2003 because of the unstable security conditions.

Interest in tourism in Iraq came later than when other countries developed their tourism assets. Until the middle of the 1950s, it was no more than a random phenomenon, restricted to areas in the north and limited to affluent social groups in the summer only. Even when tourism was organized in Iraq, activity was irregular because of lack of organization, irregular investment and governmental or private sector support.

From 1940 to 1956, tourism was managed by various Iraqi committees for summer resorts while the Department of Resorts and Tourism was being established. In the 1970s, interest in tourism increased and the General Organization for Tourism was established. This period became the golden

age of Iraqi tourism, as the state had a financial surplus and considerable resources were allocated to the sector and many attractions and first-class hotels in several areas were developed, especially in Baghdad, Al Basrah, Mosul, Karbala, An Najaf, Al Habaniyyah and Mosul. The private sector was encouraged to invest, especially in the field of hotels, as easy loans were available. This increased the number of hotels in Iraq to approximately 1,500 in 1980 and 1,900 in 1990.

The developmental plans in that period focused on establishing infrastructure that would serve tourist areas, especially in the provinces in the north. This had a noticeable effect on attraction in the developed areas.

A comprehensive tourism plan was created in 1975, to be implemented over ten years, but circumstances prevented that. The achievements in tourism in the 1970s were not widespread or comprehensive enough make the industry competitive in the region, especially considering the restrictions imposed on outbound tourism by Iraq's regional neighbors. Tourism in Iraq therefore remained internal.

This General Organization for Tourism was minimized to become the General Department for Tourism toward the end of the 1980s, then cancelled in 1988 and its works, participants, premises, and facilities divided among several ministries and departments. A department for tourism was subsequently established again, and in 2001 the General Department for Tourism was administratively and financially attached to the Ministry of Culture. This change in the structure and formation reflects lack of awareness of tourism's importance, economically, socially, and culturally, and its marginal role within the entire development process during the past period.

At the end of the 1990s, a narrow opportunity for religious tourism was opened. The state maintained direct control of all activities, contrary to the principle of providing tourists with full freedom. The blockade and Iraq's low standard living also had negative effects on industry performance. For example, the number of hotels fell to 850 in 2000, and deterioration continued after 2003, when many premises were destroyed, robbed, or exploited by foreign forces. In addition, the number of hotels reached even lower levels, never exceeding 500 hotels in 2004. Moreover, the national strategic development plan for the years 2005-2007 and 2007-2010 did not show noticeable interest in rehabilitating the industry, focusing "the top-level priority" on the reconstruction of the oil, power, and main social services sector.

The state's ownership of tourism assets was at that time restricted to first class hotels, which were transformed in 1990 into joint stock companies, 51 percent owned by the private sector. Thus, most of tourism activity is practically in private sector hands, with the state responsible for planning, supervision, control, and follow-up.

The low interest level to date was not restricted only to tourism; it included the cultural and administrative sectors in general, as this side has not received the required attention, especially because it is one of the state's responsibilities. The private sector is not expected to participate in this activity, especially in reviving heritage, developing historical and archaeological areas,

maintaining them, and establishing cultural premises such as museums, theaters, libraries, and cultural centers. This makes it necessary to give the five-year plan great importance.

8.4.2 Reality

The policy of restricting foreign tourists and the restrictions imposed on the entry of foreign tourists into the country, whether for religious, recreational, civil, or cultural tourism, noticeably reflects the lack of investment and interest in this activity. Moreover, consecutive wars, economic barriers, and poor security after 2003—in addition to the deterioration of Iraqis' economic status—have limited the country's abilities and spending priorities on tourism and entertainment. This has narrowed the field of local tourism. Therefore, despite the expansion of activity, tourism has suffered a noticeable decline in the past few years in addition to its original limitations.

This can be noticed from the following:

- The withdrawal of private investment in the tourism sector, and the decrease in the number of hotels to 784 in 2008 after reaching a height of 1,900 in 1990. That is in addition to the low percentage of first class hotels among the total number of hotels. Furthermore, their locations are concentrated in the provinces of Baghdad, Al Basrah, Ninawa, Kurdistan, Karbala and An Najaf, whereas most of the other provinces have shortages of good standard hotels.
- The low rate of hotel occupancy, which does not exceed 20-30 percent due to security conditions that are still below the required standard necessary to free the flow of interior and exterior tourism. The provinces of Karbala and Al Najaf are exempt from this as the averages of occupancy are relatively high because of an increase in religious tourism after 2003, in addition to the economic and constructional revival that is currently underway in the region, and Al Basrah due to its commercial location and the return of a considerable percentage of foreign Iraqi trade to its ports.
- The poor economic performance of the industry despite its original modest size. For example, the portion of tourism in the GDP did not exceed 0.1 percent after reaching its highest level in 1986, when it was 0.77 percent. Moreover, operation within direct and indirect tourist activity showed a noticeably low percentage as it reached 20 percent compared with the nineties. Like tourism, the cultural and artistic movement in Iraq also experienced a severe setback after 2003 due to the migration of a considerable number of thinkers, educated people and artists. This brain drain phenomenon started in the eighties and has since created a huge cultural and artistic vacuum. It will require much effort to revive it.

8.4.3 Tourism and Heritage Capabilities

Iraq has most of the requirements for successful tourism. It is one of the few countries in the world that has a varied cultural mixture and ample natural resources, in addition to the ability to provide supplementary support services.

Regarding natural attractions, considered the most important, there is great variety in the region of Kurdistan where there are mountains, woods, valleys, plains, waterfalls, and water spaces. In the west of Iraq, there is awe-inspiring natural desert and semi-desert. In the south, there are swamps rich in wildlife (Al-Ahwar) in addition to the surroundings of the Tigris and Euphrates and their tributaries; their convergence in Shat Al-Arab that makes it a fertile environment for tourism. Iraq is rich with an urban, heritage and cultural variation as it is the cradle of the Sumerian, Acadian, Babylonian, Assyrian and Islamic civilizations that are distributed in the different areas and regions in Iraq.

On the religious side, there are shrines of prophets and Imams in addition to the tombs of Al Albait³ (peace be upon them), and the Awliya'a⁴ and pious people in all the areas of Iraq. Moreover, there are very old monasteries, churches, and temples, especially in the province of Nineveh.

On the environment and health side, there are important therapeutic tourist attractions in several provinces. Iraq is rich with biological diversity, especially in the western hills region; as indicated in the analysis of the agricultural sector. International organizations indicate that Iraq has a respectable level of international biological diversity.

After providing supplementary requirements for tourism, Iraq is well qualified to offer good capacity for hotels and qualified and specialized hotel services in addition to infrastructure, basic services, and a banking system consistent with international standards, to support different types of tourism such as natural, cultural, historical, therapeutic, and environmental tourism throughout the country. This represents a base from which to spread the fruits of tourism development in all areas and provinces and enable the areas that have limited resources other than tourism to utilize this side to develop tourism and related activities.

8.4.4 Problems and Challenges

Tourism and cultural and heritage activity in Iraq are encountering a set of challenges that must be dealt with if Iraq is to be capable of launching effective and efficient tourism and cultural activities. These can be summarized as follows:

1. Limited financial resources allocated to these activities by the state, the refusal of domestic and foreign private sectors to invest in this activity until now because of security conditions, and the termination of support pursuant to Law No.353 of 1980, which caused a withdrawal of tourism investment
2. Weak and under-developed support services such as infrastructure (airports, roads and fast vehicles, hotels, and entertainment services), especially in the attractive tourist areas such as archeological and religious sites and summer resorts
3. Banking services that are inadequate to meet international standards

³ Al Albait are certain descendants and relatives of the Prophet Mohammad (peace be upon him).

⁴ Awliya'a are certain holy religious characters who are believed to be spiritually very close to God in Islam.

Public Services

4. Under-developed administration and procedures, such as granting visas and receiving tourists at the border posts, that are unnecessarily difficult
5. Low awareness in the country of tourism opportunities and the lack of methods to promote and market tourism
6. Migration of trained professional staff and the shortage of professional centers to train substitute staff
7. Lack of private or joint stock companies in tourism and cultural companies; those that exist are limited to investors who cannot meet the large investment requirements
8. Many museums and archeological, heritage, and cultural sites were destroyed or robbed in 2003 and a considerable portion of Iraqi heritage was lost
9. The lack of rehabilitation and reconstruction of most of these sites until now
10. Inadequate protection of archeological sites and their continuing vulnerability to vandalism
11. The multiplicity of parties responsible for tourism, cultural, and archeological activities. There is an overlap in the tasks and responsibilities of the Ministry of Culture, the State Department for Tourism and Archeological Affairs, and the Department of Tourism in tourism activity. There is also an overlap in the authorities of the councils of the provinces and the Ministry of Culture in the field of archeological and cultural activities.
12. Absence of a specific, long-term strategy for developing tourism, heritage, and cultural activities
13. A database of tourism, heritage, and cultural information.

8.4.5 Vision

1. Developing and creating a competitive tourism industry that can be marketed to neighboring and overseas countries to participate in the diversification of Iraq's economic base
2. Maintaining the historical heritage of the country, developing and utilizing it efficiently as a tool for developing national and international tourism, and advancing Iraq's position as important in the world's cultural and historical heritage
3. Maintaining the cultural and artistic identity of Iraq, rebuilding it, developing its attractions and re-attracting Iraqi innovators to the country.

8.4.6 Objectives

1. Support Iraq's important position in international cultural and historical heritage
2. Maintain Iraqi cultural and artistic identity, reconstructing and redeveloping it
3. Create a tourism industry that can compete with neighboring countries
4. Raise the standard of economic performance of the sector through increasing its participation in GDP and balance of payments, generating employment opportunities to

make it an effective participant in the diversification of the economic base of the country, and reducing unemployment and poverty, especially in remote tourist areas

5. Invest in the religious, historical, and natural assets throughout the country for tourism and cultural development
6. Give the private sector a leading role in tourism and in managing and operating archeological and cultural premises
7. Provide the attractions and services that attract foreign tourists, especially by providing high-quality services such as accommodation, transport, and advanced banking services
8. Integrate tourism and archeological and cultural activities by achieving balanced and coordinated growth of each and among all, as each complements the other.

8.4.7 Means of Achieving the Objectives

1. The state should continue setting strategies, plans, and programs, supervising and controlling this activity, preparing descriptions and designs or approving them
2. Continue provision of financial allocations for infrastructure that supports tourism and cultural and archeological activities, especially in connecting tourist and archeological sites with roads and providing them with electricity and other fundamental services. These are in addition to establishing and developing museums in all provinces, protecting and developing archeological sites, performing preventive maintenance on the sites, establishing libraries, theaters, cultural, and artistic centers and rehabilitating damaged sites
3. Support the private sector and stimulate it to take full responsibility for direct and indirect tourism activities, management of the archeological and cultural sites, marketing them, and establishing funds to support the tourism investment
4. Encourage foreign investment in tourism independently or through partnerships with the domestic private sector, as this activity needs huge investments that may not be available solely through the domestic private sector. This will help develop skills in managing the tourism premises and using the latest techniques in tourism promotion.
5. Complete the infrastructure, develop the supplementary services required for tourism and simplify the processes for admitting foreign tourists
6. Develop the small industries connected with tourism such as crafts and heritage professions
7. Develop tourism management and human resources to work in the industry, including service workers
8. Revive and rehabilitate archeological and cultural sites that were destroyed or vandalized in 2003
9. Continue efforts to reacquire Iraqi cultural artifacts that were smuggled out in 2003

10. Protect archeological sites from infringements by establishing ongoing supervision
11. Deal with the increase in underground water levels in some archeological sites
12. Encourage the return of the Iraqi innovators
13. Establish institutes and training centers and train staff who specialize in tourism and archeology according to every area's tourism requirements
14. Be open to the world and benefit from the expertise and teaching institutes of advanced countries in the field of tourism and the heritage of neighboring Arab countries who have experience in the field
15. Develop tourism, publicity and media and market Iraq's archeological sites and civilization
16. Reconstruct the organizations responsible for tourism and archeological and heritage activity to guarantee the unity of taking decision and the non-distribution of responsibilities between more than one party in addition to solving the overlapping of authorities between the central and local parties.
17. Set long-term plans for tourism and heritage and cultural development on scientific bases
18. Build a computerized database of tourism and heritage and archeological activity.

Chapter Nine

Social Status



9-1 Gender and Society

The issue of women is among the most important and integral to the social fabric of Iraq. Iraq's crises have directly and indirectly taken tolls on families, and women in particular. Cultural and social factors, limited teaching and training opportunities, low education levels, and limited skills all restrict women's work opportunities and their ability to compete for work and obtain jobs. This is a requisite for satisfying family needs and guaranteeing social status that is not being met. Furthermore, there is a portion of women who work in informal economic activities that do not appear in the formal records. Some women practice economic-viable activities in their homes, but these activities suffer from being ignored or disrespected because they interfere with routine housework.

The insecure environment has negatively affected women's personal freedom and made them withhold participation in many aspects of public life. Their personal security is also negatively influenced. Despite the continuous work of nongovernmental organizations, research centers, studies, newspapers, and the continuous support of the international organizations promoting awareness and spreading the concept of gender equality, there is still a noticeable deficiency in attitudes toward women.

The Iraqi state since its establishment has been keen, with varying degrees of clarity in policies and procedures, on creating opportunities for Iraqi women to enroll in formal organizations (education, health, training centers and so on). But, they have neglected, intentionally or unintentionally, the fact that the ability to enroll is not restricted to technical procedures. It is a process of changing the culture of discrimination and building the culture of equality and justice, with all its values and psychological and legal dimensions.

9-1-1 Reality

9-1-1-1 Women and Social Variables

Crises, poverty, and wars are some of the factors that hinder progress for women and children, generating accumulated dangers in all Iraqis' lives, especially the poor and the marginalized groups—including women who support their families (11.5 percent of the total number of the married women). As millions of emigrants, the poor, and the marginalized cannot deal with the dangers inherent in crises that affect their resources, any strategy that seeks to help them will need to strengthen its capabilities to manage dangers and enable people to adapt. This should be done without causing long-term suffering due to the crisis-driven cracks in the social fabric. This is the required condition to achieve permanent advancement in development.

9-1-1-2 Women and Economic Activity

It is possible to summarize the current status with a concise sentence: women's paid economic activity is limited when compared with male's activity. There are many reasons for this, as many researchers believe, and we will refer to them later. Any neglect of women jeopardizes development and represents a violation of their indivisible rights.

Age group	Males	Females	Males & Females
15-19	46.7	4.7	25.6
20-24	75.4	10.8	42.9
25-29	92.4	16.5	54.3
30-34	39.9	18.1	56.4
35-39	95.5	19.5	57.7
40-44	92.5	21.3	56.8
45-49	91.0	18.9	52.0
50-54	80.0	12.4	42.3
55-59	59.2	10.4	34.9
60-64	46.1	6.9	26.6
65 and over	20.0	3.0	10.5

Women form half of Iraqi society, but their numbers have no value if they have no social status. Though women have achieved noticeable advances in several fields—education, social work, and others—their economic activity is still low.

Table 60 shows that relative gender differences are large in all age groups, and seem higher among those who are over 25. But the picture will be different if we look at the unemployment average between the genders. It is higher among males than females except for 2006, as shown in table 61.

It is obvious that women's unemployment averages are low in the rural areas compared with the urban areas. In 2003, their average unemployment in the urban areas was 22.3 percent against 7.6 percent in the rural areas. In 2004, it was 22.4 percent against 3.1 percent. The fact that should not be ignored is that the level of women's work is high in the rural areas, but their work is invisible to professional, social, and economic measures. In urban areas, the picture is different to a great extent; the more discriminatory aspects of traditional culture give way to a more open environment, with greater recognition of the rights of women and children. Moreover, the available employment opportunities vary, giving women more choices in selecting a job.

Sex	Males	Females	Males and Females
2003	30.2	16.0	28.1
2004	29.4	15.0	26.8
2005	19.2	14.2	18.0
2006	16.2	22.7	17.5

The influence of the traditional culture is general in society, but deeper in rural areas, and more related to women's education. There are opportunities that were in most cases more available to males than females as regards the averages of enrollment, regular school attendance, or the averages of success or failure. That also includes the specializations in which females attempt to obtain skills and certificates. Consequently, this is applicable to the opportunities available in the labor market. For example, the average enrolment at the elementary stage for females is 81.2 percent against 87.2 percent for males. The gap increases in the middle stage (21-41 years) to 40.1 for males against 33.3 percent for females. The differences also are visible between rural and urban areas.

It is also important to note that the averages of enrollment also decrease among poor families more than among rich families. A study of women who support their families showed that an education qualification is an essential factor for limiting the labor market and it is one of the distinguishing bases for entry, which are generally acquired from experience in lower levels of work that don't require qualifications. The study also showed that there is a correlation between education level and fixed-income jobs, and any change in the education levels of the family has a positive effect on their positions in the other fields. When we look at the percentages of deprivation of education in general, we find that they are higher for females (47 percent) than for males (28 percent).

9-1-1-3 Women and Decision-making Centers

Though Iraqi laws prohibit discrimination that prevents women from occupying leadership or other authoritative positions, and gives women the right to equal pay for work equal to men's, social and cultural factors may undermine these good intentions.

Collected data indicates that the number of women in decision-making positions may have increased after 2003; there were 342 women in various ministries at the end of 2005—342 general managers, 86 deputy general managers, 33 consultants or general supervisors, and 8 undersecretaries. Women were 2 percent of the judges and there were 6 women in the position of minister in the interim cabinet and 5 ministers in the current cabinet.

9-1-1-4 Equality in Obtaining Resources

One of the requirements of achieving development is guaranteeing women's access to resources necessary for production— land, loans, income, inheritance. This is an essential factor in enabling them to participate in development. Access to resources means the ability to use and control them, and to make decisions concerning them; they are the economic resources.

The Iraqi Constitution of 2005 guarantees the right of possession to all Iraqi citizens without discrimination on the basis of sex. Despite that, men and women do not enjoy an equal ability to access fundamental resources and services, as women in general have fewer financial assets than men and families headed by women have fewer assets than those headed by men. This includes the rights of possessing land or housing and managing assets and businesses. The discrepancy in assets is

because of the difficulty of women participating in public life.

Acknowledging women-led projects is an effective strategy for building the free economy, and also a means of supporting equality. However, there are few suitable opportunities because of family pressures on women. As well, microloan projects, to a great extent, are monopolized by men. This is not because of traditions that hinder women's participation but to women's inability to obtain the loans because of the guarantees required by the banks. Both men and women suffer from this.

9-1-1-5 Challenges

The most important challenges to Iraqi women are:

1. The increase in the percentage of illiterate women in the rural and urban areas—which is noticeably high in rural areas
2. The lack of women's awareness of their rights and their inability to demand them even when they are aware of them
3. Many women connect their careers with the idea of marriage that has priority over their study and careers. This thinking is a result of the traditional family style of raising children
4. Traditional cultural discrimination against women is still the most influential factor. Cultural or familial concerns about a girl have become a justification for marrying her off or preventing her from continuing her education
5. The percentage of enrolment of females in education, particularly in poor families, is low. Therefore, it is possible to say that traditional culture, poor education and family poverty all affect the professional situation of women
6. Displacement and migration have made women more isolated inside their homes, in addition to the burdens that they have because of those exceptional circumstances.

The challenges women face in the job market are no less important, though the women are not always as isolated, including:

- The challenges of the traditional culture to women working, which keep
- Women's participation in the private sector low because of principles and traditions that put limitations on their roles.
- The negative attitude toward women working outside their homes and the cultural preference to prepare them instead for the traditional roles of marriage and maternity.
- The traditional thinking of the Iraqi family regarding work for females is to prefer government jobs even if the salaries in the public sector are lower than the private sector's.
- The increase in the number of women in the marginal labor market or the irregular market. Their activities in this field lie in the middle between the formal employment and working for the private sector.

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9-1-3 Vision

Preparing developmental opportunities and enabling conditions that create more options for women, build their capabilities, and provide them with an environment that is characterized by equality and justice.

9-1-4 Objectives

1. Make women capable and include them in the process of development
2. Implement qualitative changes in a prevailing culture based on gender discrimination by means of concentrated efforts in several fields, such as education and employment, by parties that can influence people's orientations and interpretations.
3. Adopt a national strategy that takes the initiative to raise the standard of women to make them capable, encourage equality between the two sexes, and reduce the variation in values between the governments on one hand and the rural areas and cities on the other hand
4. Reform the economic and legal institutions to ensure equality in rights and opportunities for men and women (family laws, protection from violence, property ownership, employment, political rights, and inheritance).

9-1-5 Means of Achieving the Objectives

1. Amending laws and legislation to support equality and participation, and devalue discrimination
2. Giving the public freedom of opinion, encouraging discussion and dialogue, running campaigns raising awareness and changing the image of women in the media
3. Reforming the education system and curricula to give more opportunities to change society's traditional view on violence against women
4. Including concepts that support the value of equality and equal opportunity in human rights programs and promote this as a culture that confronts discrimination
5. Expanding credit opportunities and facilities and increasing the loan amounts available within a national plan to encourage the women's initiatives
6. Supporting the work of the civil society women's and other organizations by strengthening their organizations to play an important role in establishing and spreading the culture of gender equality
7. Position equality as a civilized demand that does not diminish men's rights but supports the principle of gender partnership as the way to deal with life's affairs
8. Preparing the national employment plan according to the principle of actual workplace requirements
9. Expanding training programs and training women in all specialties and fields that produce income and are consistent with national developments needs

10. Expanding the umbrella of social security to provide all groups, especially women, sufficient security
11. Supporting the integration of social and economic policies affecting women's work
12. Making training programs more than just technical by adding components that build character, promote civilized values, and encourage initiatives, renewability, self-confidence, and the desire to participate
13. Supporting the important economic role of women in the transformation to a market economy to make her the new partner in development in Iraq.

9-2 Youth

The young (15-24) are among the most negatively affected groups in by the circumstances that assail Iraqi society. They suffered the terrible hardships of wars and conflicts; they were used to provide a livelihood during the wars; and they are the ones who have been locked into the predicament of unemployment since 2003. The youth are the hope of every society, they will be its productive and executive power, but at the same time, they are a source of great danger when they do not have employment opportunities and respectable life opportunities.

Youth want not only work opportunities, but the opportunities of life (education, training, work, entertainment, health, and more). Their demands are the demands of society itself. Weakness in fulfilling these distinct demands leaves Iraqi society vulnerable to danger. The experiences of many countries show that when war ends, thousands of young fighters confront crisis when looking for new jobs. This crisis is exacerbated when the state is slow in finding suitable opportunities to contain it or to provide the youth with at least minimum services.

Iraq's youth problem can be summarized by saying that they form a very high percentage of the demographic pyramid, as they do in many developing countries. However, Iraqi youth have suffered from multiple problems— having been victims of irresponsible policies that pushed them through the hell of war, and then failed to find sufficient and suitable employment opportunities for them, then tried to place them in the framework of a normal public life. Furthermore, no policies have given them training, preparation, health and cultural services, and so on. In the 1990s, youth centers were neglected and the ministry responsible for youth was disbanded. With the spread of poverty, marginalization, long hours spent idle, and the withdrawal of training, the phenomenon of delinquent behavior expanded among the young as psychological and social defense against failure in public life. This has caused an increase in the number of prisons and rehabilitation centers and an increase in psychological diseases related to frustration, poverty, and other rightfully distressing conditions.

9-2-1 Reality

The number of the young in Iraq is unprecedented—20 percent of citizens are within the 15-24 age group. With the increase in fertility rates in the country, the percentage of the young is expected to increase in the next three decades. The most

prominent demographic characteristics of youth in Iraq are:

In 2008, the number of young was 6.1 million female and male youths. The number is expected to be 7.5 million in 2015. Current and expected increases in the number of youth are closely related to fertility and mortality rates and to the sizes and flows of migration. The data in table 62 show that the relative percentage of youth will continue to increase over the next two decades before it starts to stabilize, and then decline. The percentage of males in the aforementioned group was 20.2 percent in the same year compared with the percentage of females which was 19.8 percent with a gap of 0.04 percent.

The percentage of youth among citizens of working age (15-64 years) was 43.5 percent in 2008. The percentage of urban youth among total urban inhabitants is approximately 19.8 percent, less than their percentage in the rural areas, which is approximately 20.3 percent of total rural inhabitants for the same year. The decline is the result of security conditions and the compulsory displacement of citizens in most of the provinces and cities.

From a purely economic point of view, the sharp increase in the number of male and female youth in Iraq and their overall percentage present economic policy challenges: the need to provide them more educational services, infrastructure facilities, and proper work opportunities. On the other hand, their numbers represent a latent capability that can be invested in national development programs.

The new economic and social changes, in addition to the changes in communications, have provided the young with opportunities to mature and achieve at a relatively early age compared to previous generations. At the same time, many essential needs go unsatisfied, especially among the unemployed. Furthermore, some groups have encountered difficulties getting married and establishing families, while

others encounter limited opportunities to participate in free discussions and developing linkages with older generations. Therefore, it is not unreasonable to see the suffering of many youth as the result of isolation and a cause of their attraction to extremism and violence. It is important, therefore, for any future social strategy to guarantee opportunities for the youth to participate fully in the process of development and to target them with these strategies.

9-2-2 Challenges

The youth are the change-makers and a positive force when they live in an environment that allows normal mental, psychological, and physical maturation and that provides employment opportunities, participation, and security. But youth can also be the source of many hazards when they find themselves in an environment characterized by threat, violence, unemployment, and marginalization.

Ignoring the situations of youth and marginalizing them increases their likelihood to engage in delinquency and crime with serious social consequences—and the possibility of engaging with terrorism imported from abroad. The result is an unstable and unsafe environment that enormously deters capital and foreign investment and leads to lost opportunities for development and reconstruction.

As well, the lack employment, especially for new graduates in the sciences, causes the educated young them look for opportunities abroad, increasing the migration of valuable Iraqi minds—a noticeable waste of human resources.

If we examine the challenges that are considered barriers to an effective investment policy to employ youth and reducing their unemployment numbers, we find the following as the most important challenges:

Age group	2005	2010	2015	2020	2030	2040	2050
0-14	11,808	12,803	13,457	14,039	15,108	15,570	15,370
percent	41.8	40.7	37.5	34.9	30.9	27.4	24.0
24-15	5,614	6,273	7,446	8,291	9,126	9,849	10,346
percent	19.9	19.9	20.8	20.6	18.7	17.3	16.2
25-64	9,851	11,375	13,842	16,350	22,432	27,772	32,608
percent	34.9	36.2	38.6	40.6	45.9	48.8	51.0
65 and over	964	1,016	1,141	1,548	2,242	3,736	5,668
percent	3.4	3.2	3.2	3.9	4.6	6.6	8.9
Total	28,237	31,467	35,886	40,228	48,908	56,927	63,992
percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat the 2008 Revision, (<http://esa.un.org/unpp/p2k0data.asp>)

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1. The absence of suitable employment policies that can create new opportunities for the unemployed—due to the weak role played by the private sector and the deterioration of its organizational efficiency
2. Low levels of investments that limit the capabilities to create new ways to deal with unemployment
3. The absence of a comprehensive national policy targeting youth, resulting in the provision of obsolete and useless services
4. The multiplicity of organizations that offer services to youth, and the absence of coordination and wasting of effort
5. The limited political and social roles given to youth
6. Fear of the future associated with unstable political and economic conditions— increases in living costs, the level of unemployment, and so on cause many youth concerns about their career and future life
7. The weakness of the qualifications and experience of the specialized staff that is responsible for managing youth organizations from an administrative and technical perspective
8. The weakness of the relationship between the youth organizations and clubs with the councils of the provinces
9. The quantitative and qualitative shortage in sport and entertainment facilities for youth, males and females, and the variation in the abilities of the provinces to provide them
10. The limited financial resources allocated for youth activities and their low rank in the federal budget of the state
11. The lack of sufficient land for creating new youth projects
12. Weakness in athletic performance accompanied by lack of the cultural, technical, and scientific skills that complement performance.

9-2-3 Vision

Training the young, helping them overcome social challenges and participate effectively in building society.

9-2-4 Objectives

The developmental dimensions of the plan focus on achieving the following:

1. Concentrating governmental efforts to develop the capabilities of the youth to enable them to participate effectively in the developmental process and putting them in the framework of the public life
2. The ideal balance between the needs of the state and the needs of the youth
3. Increasing the effectiveness of the program of developing the youth through adopting an integrated course to connect the objectives of the program together.

The circumstances resulting from Iraq's myriad crises and rapid changes call for the adoption of responsive and effective developmental plans, strategies, and policies for youth. They need to be included within the entire developmental, political, and social activities and to increase their representation and participation in developmental formation. This can be achieved through the following:

1. Deepening the concept of gender equality among youth to ensure a constructive relationships between males and females
2. Training the youth to participate in setting their own policies and programs in all the fields of development
3. Developing youth leadership to enable them to play roles in the process of development
4. Developing the current social policies according to the renewable needs to guarantee effective participation of civil society in solving the problems of the youth
5. Establishing many youth and entertainment centers in a way that guarantees the education of youth; keeping them busy with beneficial and constructive activities
6. Including migrant and displaced youth and working on providing employment opportunities that achieve a respectable life for them.

9-2-5 Means of Achieving the Objectives

1. Diagnosing youth problems objectively and comprehensively through deep studies and building a comprehensive and updateable database
2. Creating a set of comprehensive, correlated, and integrated goals and objectives for youth, both they are organizational and individual
3. Finding all suitable ways to include youth in the life of their societies through opportunities to enable and employ them; building awareness of preventive and treatment programs
4. Meeting the needs of youth to facilitate their building of families
5. Finding educational and cultural facilities for youth who cannot enroll in schools
6. Studying the education problems of the young, especially in the middle and preparatory stages
7. Developing training centers according to the requirements of the labor market, in a way that provides wide opportunities for youth to participate society
8. Supporting the role of the youth in cooperative activities, in a way that provides new employment opportunities
9. Establishing psychological and social centers that can help solve youth problems
10. Adopting programs that support the culture of dialogue, achieving peace, and rejecting violence

11. Arming the youth with the knowledge, skills, and orientations that can help in finding peaceful solutions and support the culture of coexistence with others
12. Continuing to support the roles of the family, school, and local society in bringing up the youth correctly, to prevent the occurrence and growth of youth drifting away from the values and standards of society
13. Developing training centers that currently exist in the ministries by increasing the number of trainers and making the professions taught consistent with the requirements of the state and the labor market
14. Increasing the number of job centers, especially in the provinces
15. Making the youth aware of the necessity to participate in civil society
16. Increasing the awareness of, and deepening the role of the family in taking care of the youth and guiding them.

9-3 Vulnerable Groups

Dealing with these groups is one of the most important issues for the public and the partners who are concerned with development, not least because it affects the likelihood of achieving development objectives.

The vulnerable groups include orphans, homeless children, disabled people, old people, widows, divorced women, single mothers, those who are subject to compulsory displacement, and more. These groups face problems and challenges that include a high level of poverty and various forms of deprivation. Moreover, they are always vulnerable to shortage of supplies or losing opportunities to adapt to shocks.

These groups have become a large percentage of the Iraqi social picture. However, social services for them have become almost idle or limited in many areas. This has led to an increase in marginalization, poverty, alienation, and unstable families, and to diseases that result from the spread of the cities and the poor districts (randomly built districts) which contain hundreds of thousands of newcomers on a daily basis. Many areas exhibit serious problems that threaten the social fabric and the future.

The traditional security nets (charity, endowments, the extended family, the tribe, local society, and religious institutions) were helping to limit problems, especially for vulnerable groups such as disabled people, orphans, beggars, the homeless, and so on.

One of the positive important steps to decrease marginalization is the adoption by the state and its development partners of a strategy to reduce poverty, through which the state aims to guarantee the fundamental rights of children within the frame of acknowledged and approved international rights. It also aims to build the capabilities to create a level of the labor force on the local level for vulnerable groups that have competitive capabilities by adopting programs and policies to make them capable and continuously build those capabilities.

9-3-1 Reality

9-3-1-1 Persons with disabilities

Though the CSO has implemented important surveys of the number and distribution of disabled persons, those numbers and their different groups are not available yet. Comprehensive data on citizens are expected and necessary to answer many questions that we cannot today find a definite answer for. Moreover, there is a need to issue a law to make possible compensation to those disabled in wars and to victims of violence and terrorism who are not employed by the state. Additionally, action must be taken to address certain diseases spreading in Iraq, like cardiac diseases, diabetes, and the incurable diseases that may cause a form of disability like paralysis, the inability to move or speak.

9-3-1-2 Widows and Orphans

There are large discrepancies in estimates of the numbers of widows and orphans. The scan of the circumstances of living showed that eight percent of the total number of women who were included in the study, from the different age groups of the sample were widows against 55 percent who were married. Regarding the victims of the incidents that followed 2003, there are also a number of different estimations.

The report of the United Nations on human rights in Iraq in 2006 has shown that women and children are still paying a high price as a result of domestic disputes, violence, and terrorism and that the number of orphans and widows is increasing continuously. Some estimates show that the number of orphans in Iraq might be more than 4 million and they are huge burdens for their caretakers and society in general.

If we consider the difficulties and the continuous economic challenges that face the Iraqi families, it is typical to find the marginalized continuously suffering from pressure to contribute to family income though unemployment remains high and employment opportunities are limited.

9-3-1-2 Social Status

Helping the orphans work in the streets must begin by dealing determining how families meet their fundamental financial needs without relying on children's work. The programs and policies to reduce poverty should target and help the very poor families to send their orphans who work to school.

9-3-1-3 Displaced Families

All the facts indicate that Iraqi displaced families, inside and outside Iraq, are still suffering. Their suffering and difficulties they encounter are mainly in the countries of emigration as many family's savings are depleted because of the high cost of living and the lack of work opportunities. Those families have lost their main source of support because of circumstances in the countries of emigration.

9-3-1-4 Children

Children (those under 18) form approximately half of the population of Iraq. They have been the victims of terrorism, violence, and crises. The problems facing children were

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exacerbated after 2003 as they continuously faced the dangers of the attacks and violence while suffering from unmet fundamental needs such as social protection, medical services, education, food, water, and sanitary services. Many children are also victims of mistreatment.

The crises that struck Iraqi society and caused the increase in vulnerable groups have made many children liable to fall in the trap of delinquency. Children in Iraq, as in all conflict zones, are the victims mostly liable to violate the law. For example, many children are cruelly treated by their families: approximately 5 of every 6 children at the ages 2-14 years were victims of the mistreatment by their mother, guardians, or a family member.

Many Iraqi families depend on one or more child to work in the streets to satisfy financial needs. Despite laws that require children to enroll at schools, the crises have forced many families to work outside the home. The indicators show that most of the working children belong to poor families and work in different areas of the cities, selling simple and easy-to-move commodities.

9-3-2 Challenges

1. The inertia of the formal service and non-service, organizations. The surrounding circumstances have exposed the fragility and weakness of their structures, performance, visions, and strategies. This has had negative effects on their policies, plans, programs, initiatives, and interactions with the public, and on the degree of their actual to the challenges that they encounter, especially with the fragile groups. This has severely restricted their effectiveness in national and civil society
2. The absence of a comprehensive vision to improve the social situation and to stop relying on partial, limited, scattered policies and procedures that are not connected, either among themselves, or to the larger development effort
3. The public sector's continued focus on spending on the social sector's material infrastructure and its increased spending on the material requirements for operating these facilities. This enables them to implement their tasks according to modern international standards.
4. The absence of coordination and integration among the effective members of the social and the public and private sectors
5. The distressed social situation that has led to the disappearance of opportunities to enable Iraqi society to develop its tools in a rational and meaningful way, and deprived it of the chance to formulate its priorities
6. The absence of programs specializing in aiding vulnerable groups
7. The social policies that lack clear visions for programs for these groups.

9-3-3 Vision

Working to enable vulnerable groups, giving them new

opportunities to merge into society, and providing them with the required care to help them play positive roles in development.

9-3-4 Policies

With the failures, consequences, and challenges threatening vulnerable groups in Iraq today in the background, the social policy must rely, in its details and general lines, on a comprehensive vision that can contain the relationships among sectors that deal with them. Education, and the cultivation process that is included in it, is not separable from the process of enabling and investing human resources, for example. As unemployment is one of the sources of poverty, social security nets are one of the important mechanisms to provide opportunities for the vulnerable groups that live in the bottom rungs of society, as are the living guarantees provided by social securities. This comprehensive vision arises from the fact that society is a single, indivisible entity.

All these indicators, and others, indicate that the burden on social policy in Iraq will be heavy. Therefore, nontraditional procedures that rely on a new concept of the social work should be applied. These should take into consideration the fact of a state that is no longer centralized whose comprehensive reach has decreased in favor of municipalities or local governments in the provinces. The future social policy in Iraq should be based on the following rules:

- Balancing what is formal and what is voluntary in finance, participation, evolution and criticism
- An active role for civil society organizations
- More openness to international and western expertise and assistance
- Relying on the results of scientific research rather than individual effort
- Stressing the role of local councils and municipalities in identifying the needs of their local societies, setting their plans, and financing their programs.

Future options for growth should adopt social policies that take necessary measures to remove the traces of crises and improve the quality of life, creating opportunities for productive labor and setting high standards for education and healthcare as a means of productive investments and the creation of the conditions and requirements for achieving security.

9-3-5 Objectives

The basic fact that is always present before those who set policies and make decisions is that we live in a society that suffers from crises—and the circumstances of the crises have lasted too long. Therefore, planning for the future and setting practical programs that are ready to be implemented in one day is not possible. Consequently, some of the phenomena that were caused by these circumstances or exacerbated because of them will continue. This includes some deprivation indicators like low income, the increase in families that are supported by women, and more. This indicates that there is a need for programs and projects that reduce the traces of the crisis.

The available option today is for the government to work, in cooperation with development partners, on implementing programs and projects that can reduce the burdens of vulnerable groups. The social security networks represent a mechanism to protect some groups that lack capabilities to participate in social life. We can identify the following most important aims within the frame of the aforementioned:

1. Treating the serious traces and burdens that resulted from the crises and had a role in marginalizing thousands of widows, orphans, disabled persons, and more
 2. Enabling vulnerable groups, through training, qualification, and awareness, to merge in society, and including them in social responsibilities and long-term development plans
 3. Achieving balance and justice in providing services and infrastructure for these groups and in all fields
 4. Activating civil society and the municipality councils to be part of the social security networks
 5. Adopting programs that achieve mutual interests and benefits and building social peace and partnerships that can reduce the psychosocial, social, and economic pressures on vulnerable groups
 6. Protecting the displaced families whose numbers have become great as the result of social problems and hard circumstances
 7. Adopting an effective system for social aids
 8. Creating a new doctrine for social work that takes into consideration the transformation from relying almost completely on the state (the official organizational frames) to rely on an effective role for unofficial societies and organizations (voluntary work), the role of individuals and groups in local society (the village, region, and the like). This doctrine will form the necessary standpoint for future social policies
 9. Working on creating a participatory citizen who participates in decision making, procedures, and their implementation, by finding activities that include citizens in social work programs—social work being an expression of mutual responsibility.
3. Developing programs in which Iraqi parties and international parties will participate, for example, offering loans to establish small projects that produce income such as the projects implemented jointly by the Ministry of Labor and the International Labor Organization. Regarding these loans, certain groups such as women who support their families, war prisoners, the unemployed (especially the youth), persons who were disabled in wars, and the like should benefit from them
 4. Supporting the organizations and establishments in civil society that are linked to the most vulnerable groups, especially widows, orphans, the homeless, and women taking care of orphans. It should also be noted that the support should be related to the concept of enabling, and free from the concept of emergency aid
 5. Forming or establishing a supreme national department for social work that includes sub-departments such as a department for caring for orphans, a department of public participation in fighting crime, and the like. It is important to connect this department with an effective formal party such as the cabinet.
 6. Developing the current condition of the organizations for social care with the different groups and classes they serve through evaluative studies that diagnose their problems and the possibilities to develop them
 7. Setting bases for a social contract between the state, the private sector, and the organizations of the civil society that aims at providing enabling opportunities and supporting the capabilities of these groups in their capacity as a party that cannot be ignored in the process of reconstruction and long-term development, including training and loans
 8. Developing organizations that offer accommodations to deal with orphans, violence, homelessness, beggars, disabled persons, old people, and others in need, including asserting the importance of voluntarily participation in the activities of these organizations, technically and financially
 9. Increasing the salary of social protection network participants to make it consistent with increases in the cost of living
 10. Studying the situation of endowments (awqaf) in a way that guarantees activating their services and distributing their resources in accordance with the aims of the strategy of social advancement
 11. Finding new finance resources that reflect the participations of individuals and groups in the programs of the security networks such as the lottery, theatrical and artistic shows, competitions, and so on
 12. Including disabled persons in the processes of decision making and in all the levels that are related to their affairs.

9-3-6 Means of Achieving the Objectives

Setting new social policy for the organizations of state and civil society will definitely make these organizations encounter new needs that demand new options. The following are examples of possible options:

1. Reviewing the implemented social legislation and implementing the amendments that are consistent with the changes that occur in reality
2. Developing some programs and procedures that were (and some still are) applicable today, like social care funds, (zakat funds) and social solidarity funds, within the framework of a national assistance fund benefiting from the experiences of some Arab countries such as Jordan and Egypt

9-3-Poverty

Poverty has been one of the most important challenges accompanying development in Iraq over the past three decades. It affects the depths of organizational structures and threatens the social fabric and the mechanisms of its solidarity.

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Addressing poverty in Iraq has not been allocated the attention required because of the situations, policies, and variables at play in during the past four decades. Having witnessed relative stability during the 1970s, the challenges started to affect the structure of organizations as well as economic and social situations in Iraq after the country entered the tunnel of war with Iran in the 1980s. This was seriously exacerbated by the situation after the Second Gulf War and imposition of the international blockade in 1990. The situation became worse because of the crises that accompanied the changes in the political situation in 2003 and the violence, terrorism, and destruction of the hierarchy of organizations that accompanied them. The continuation of these crises for a long time has left its mark throughout Iraq—and the worsening poverty levels might be the most prominent one.

Despite some achievements in the past few years, many challenges and principal obstacles are still threatening security in Iraq. Approximately one-quarter of the population is living in poverty and deprivation as a result of the crises and the loss of security and stability. This was accompanied by a severe discrepancy in income levels, inequality between males and females, and visible differences in the levels of deprivation between the regions and the provinces, as was shown by many surveys in the past few years.

The Iraqi state has inherited the burden of accumulative poverty in addition to the new factors that support the continuity of those problems—unemployment, health problems, shortcomings in education and other services, the withdrawal of social work, low personal incomes, erosion of the value of the national currency, and increased inflation rates, in addition to deterioration of the conditions suitable for development and reconstruction, with the growing violence, conflict of interests, corruption and so on. All of these inputs show that inequality and poverty remain among the most important developmental challenges that the Iraqi government is trying to confront with available means in its five-year plan for the years 2010-2014.

9-4-1 Characteristics of Poverty in Iraq

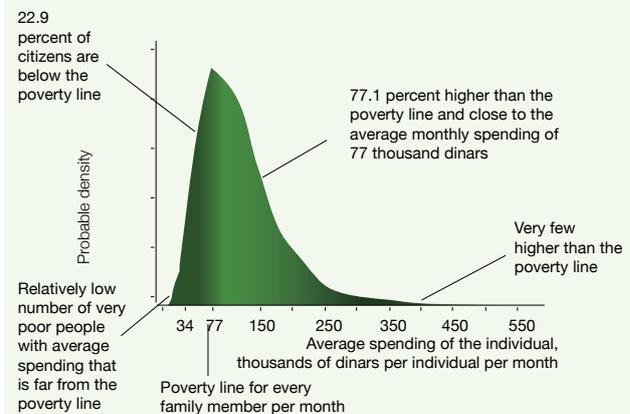
National Poverty Line

The starting point in any strategy to reduce poverty—and the fundamental condition of its success—is to identify those in need, where they are concentrated, in order to target them. The document of the strategy for decreasing poverty that was issued recently by the CSO, in cooperation with the World Bank, and which was approved by the cabinet in November 2009, indicated that 22.9 percent of citizens, or approximately 6.9 million Iraqis, are below the poverty line⁴ (figure 10).

The poverty gap⁵ in Iraq was estimated to be 4.5 percent. This means that the consumption of most Iraqis is close to the poverty line and the relative improvement in their incomes or the increase of their share of governmental spending on public services can rescue them from poverty, but the size of the gap is severely different among the provinces, as is shown in the figure below.

On the other hand, the distribution of individuals according to their average spending indicates that most of them are around the poverty line, and only few are away from it. For those who

Figure 10 Poverty Line and the Distribution of Average Monthly Spending



are near but not at the line, this means that if a high percentage of them experience a decrease in income (loss of jobs, loss of the one who supports them, the illness of a family member) or an increase in their consumption requirements, they may be expected to fall under the poverty line.

High Percentage of Poverty in Rural Areas

The distribution of poor people differs between rural and urban areas. While 70 percent of the citizens live in the urban areas, half of the poor are concentrated in rural areas. This suggests that the economic and social conditions in rural create an environment that generates poverty. This conclusion is supported to a certain extent by a high fertility rate: the growth rate is 3.5 percent annually in rural areas compared with 2.7 percent in urban areas.

The economic activities of the poor people in the rural areas are concentrated in agriculture, hunting, forests (56 percent), and construction and building (14 percent). They practice professions that do not need high skills and education such as handcrafts (17 percent) and basic professions (15 percent). Of laborers under the age of 10, 56 percent work without a fee, most of them are women, and approximately two thirds of them are in poorest groups.

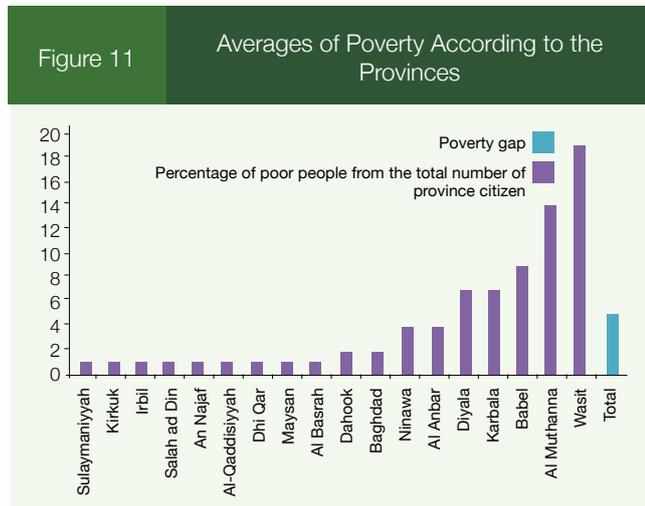
Discrepancy in Poverty in the Provinces

The provinces differ in their poverty rates and their gap. While 40 percent or more of citizens of some provinces are poor (Al Muthanna 49 percent, Babel 41 percent, and Salah al Din 40 percent), the percentage of the poor in other provinces is less than 10 percent, with the provinces in Kurdistan serving as the prime example. The poverty gap also is larger in provinces with

⁴ The poverty line was identified by the strategy for reducing poverty as 77 thousand dinar/individual/month.

⁵ The poverty gap is the size of the gap between the income of the poor and the poverty line. It is calculated with the monetary units that are sufficient to raise the standards of consumption of all poor people to the poverty line. It is calculated as a percentage from the total value of the consumption of all the citizens when the level of the consumption of each one is on the poverty line.

a high rate of poverty. As well, 13 percent of poor people are concentrated in Baghdad only and approximately 11 percent are in Al Basrah. In the rural areas, the poverty rate is high in Al Muthanna (75 percent), Babel (61 percent), and Wasit (60 percent).



Dispersion in Family Income and Spending

There is a large difference in income and spending between poor and non-poor families, especially in income. CSO data indicates that the richest one-fifth of families earns 43 percent of Iraq's total income, while the poorest fifth earns only 7 percent of total income in Iraq. The dispersion seems less sharp regarding spending: the share of the richest families is 39 percent of total family spending while the share of the poorest families is 9 percent.

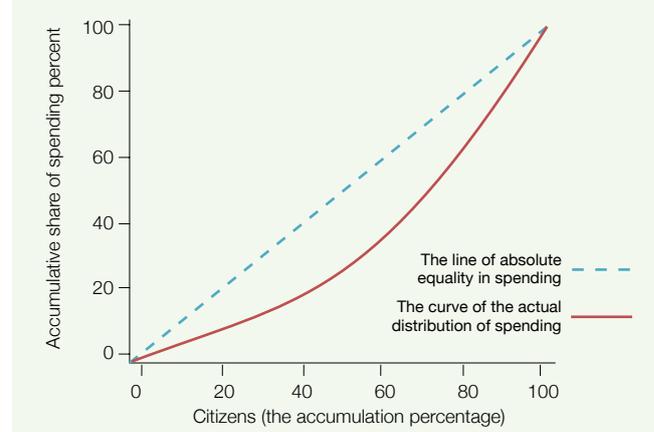
By applying the Gini coefficient, which is considered the most common in measuring dispersion, we find that the dispersion between the poor and the rich in Iraq is low when compared with the rest of the countries in the world. If we compare the value of Gini coefficient with the values of that coefficient for 128 other countries (for which we have coefficients), Iraq rank 18th, as the value of its coefficient is 0.309 compared with 0.344 for Egypt, 0.353 for Algeria, 0.377 for Yemen, 0.383 for Iran, 0.388 for Jordan, 0.395 for Morocco, and 0.437 for Turkey. The Lawrence curve shows the differences in income. The more this curve comes closer to a straight line, the fewer disparities will exist.

Weakness of the Relationship between Poverty and Unemployment

CSO's data from the comprehensive battery of social and economic surveys administered to families in Iraq in 2007 shows that there is a weak correlation between poverty and unemployment. While the poverty rate was 39 percent in rural areas and 16 percent in urban areas, unemployment in rural areas was 13.36 percent and in urban areas 15.17 percent. This means that poverty is most likely to be correlated with income from labor for those who work— who represent 89 percent of the labor force in rural areas. This is due to low productivity. The correlation of poverty with the high fertility rate and the social, economic, and environmental characteristics

Figure 12

Lawrence Curve of Spending in Iraq for 2007



of rural areas is more than its correlation with unemployment. This is indicated by low average of participation in economic activity, as 57 percent of citizens of working age are outside of the economic activity field (they do not work and they are not looking for a job). Regarding women, the percentage is 87 percent.

On the other hand, it is not possible to deny the relationship between poverty and low employment. The results of the employment and unemployment surveys for 2008 showed high unemployment related to limited work hours for workers 15 and over: 23 percent for males and 53 percent for females; 21 percent in urban areas, and 43 percent in rural areas.

9-4-2 Challenges

Alleviating the Negative Traces of Economic Reformation on the Poor

The Iraqi government has adopted an orientation toward the market economy since 2003. Since that year, it implemented a bundle of reformations that have led to a noticeable improvement in individual real income—a direct result of the ability to control the inflation rate and fix the value of the national currency. However, some of these reforms have had negative effects on poor people. For example, the policy of reducing governmental support for oil products caused an increase in average family spending per month on accommodation, water, and fuel from 13 percent in 1993 to 29 percent in 2007, doubled family monthly spending on transportation from 5 percent (1993) to more than 10 percent (2007) because of the increase in fuel prices. This shows the importance of adopting procedures that consider poor people and reduce the negative effects of reforms on them. One of the most important procedures that was actually applied was the establishment of the social protection network system and its implementation started in 2006.

Maintaining Security and Stability

Though the deterioration of security has negative effects on all citizens, their effects are more damaging to the poor because of their lesser capabilities to deal with circumstances like loss of income, increased prices, and scarcity of commodities.

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The negative effect on their loss of jobs and material assets is also visible. Undoubtedly, the ability to reduce poverty remains limited while instability is increasing; it is causing economic and social situations that are unhealthy for the security for the citizens.

Guaranteeing “Good Governance”

Creating the proper environment to implement the strategy requires the government to set “good governance” as the top priority in governing, establishing organizations, managing the economy, improving the performance of public administration, and fighting corruption—in addition to other procedures that guarantee the improvement of the political, economic, and social environment, improved efficiency of government performance, improved decision-making mechanisms for setting policies and establishing and developing organizations that support economic growth.

Means of Achieving the Objectives

Higher income from work for the poor

Income from work is the main source of income of poor people. The decrease in this income is one of the causes of poverty. Therefore, the strategy aims to increase productivity, create employment opportunities, and ensure easy access to loans for the poor by:

1. Providing factors to increase the productivity of agricultural work for the poor
2. Setting lending programs for activities that give income for the poor
3. Establishing a system to review the minimum daily wage rate according to the variations in the national poverty line
4. Establishing effective job centers that are easy for the poor to approach and work with
5. Providing governmental support for initiatives of civil society to support the poor
6. Establishing or activating evening crafts centers and quick training programs for the poor for professions that produce income especially for the poor.

Improving the health standards of the poor

The plan aims to improve the health and the care and services that are given to the poor, with a stress on preventive health services and treatment health services. These policies include improving primary healthcare services, extending potable water and sanitary sewage services to poor areas, increasing the coverage of these areas with the activities of the extended immunization program and the positive health programs and improving the nutritional status of the poor by

1. Providing improved healthcare services to the poor that are easy to access
2. Increasing health awareness in poor areas to control dangerous behavior and contagious and non-contagious diseases
3. Setting a government program to extend potable water and sanitary sewage services to poor areas
4. Supporting coverage of poor areas with the activities of the extended immunization program
5. Improving the nutritional status of the poor
6. Setting programs to support positive health for the poor.

9-4-3 Objectives

The plan aims to achieve the objectives consistent with the strategy for alleviating poverty and with national efforts to achieve the millennium development objectives. In light of what has been achieved in improving food security indicators, child and maternal mortality, and school enrollment since 2004, if we assume that implementation of the five-year plan has begun and the political situation and security are stable, it is expected the plan will reduce the national poverty rate by 30 percent compared with the 2007 rate. To achieve this, the plan must adopt strategic objectives as follows:

1. Higher income from work for the poor
2. Improving the health standards of the poor
3. Expansion and improvement of education of the poor
4. Better housing environment for the poor
5. Effective social protection for the poor
6. Fewer discrepancies between men and women

Expansion and improvement of education of the poor

The enrollment rates at the post-elementary level show large differences between the poor and the non-poor, and the rural and urban areas. For example, the enrollment rate of the poor at the middle stage is only half that of the non-poor. The results of the social and economic scan in Iraq showed that this difference is attributed to the carelessness of the family or the individual—45 percent of the reason—followed by absence of a school (18 percent), and social reasons (12 percent). This suggests low awareness of the importance of education and the inability of the educational system to provide sufficient schools and supplies.

This objective can be achieved by the following:

1. Issuing a law regarding, and instructions for, compulsory primary education—and activating it, especially in rural and poor areas
2. Giving priority to establishing elementary, intermediate, and preparatory schools in poor areas
3. Amending the law and instructions for the protection network and connecting it with registration of children of included families for primary education
4. Improving the efficiency of education in poor areas and urban and rural areas
5. Implementing procedures and activities to reduce the number of illiterate people
6. Preparing and applying courses to connect professional education with the labor market, especially in the agricultural and rural sectors.

Better housing environment for the poor

The poor suffer from the problems of the environment in which they live. These include low housing standards, overcrowding, pollution, and unsuitable infrastructure. Electricity cutoffs are still happening continuously and for long hours—16 hours per day in some places. Though most houses are connected to the public water network, the percentage of poor families that are not connected is more than double the percentage of non-poor families (33 percent compared with 14 percent). Moreover, many cities suffer from problems in the water provision at least once per week, or have poor-quality water

Sanitary sewage services are available only in some areas of Baghdad and some other cities. These exist only in some parts of other provinces. The houses of 35 percent of the poor have no connection to the public network and no waste basin, compared with approximately 20 percent of the non-poor.

Current estimates indicate that there is a housing credit of not more than 2.8 million units. Some of them are below minimum standards.

To establish a better housing environment for the poor, the following should be implemented:

1. Extending the government's projects to build suitable housing units for the poor with easy occupancy terms
2. Setting and applying programs to encourage the participation of the private sector in low-income housing
3. Creating and maintaining a suitable environment around the houses.

Social Status

Effective social protection for the poor

The principle of including families or individuals in the aid network is that they have no or low income, but reviewing the targeted groups may not be consistent with this standard because:

- Correcting the targeting system requires separating those who are eligible for continuous social care—disabled persons, widows, old people, and others, from those who are temporarily ineligible for aid until the causes for their income change are eliminated.
- The social protection policy should watch two important factors—the percentage of poverty and the poverty gap. The Ministry of Labor and Social Affairs has specified that the percentage of inclusion of poor people in every province is 20 percent. This means that it has adopted one standard, regardless of the percentage of poverty and its gap in every province.

Undoubtedly, canceling the system of ration cards completely will hurt poor people severely. Moreover, the vulnerable groups who are not poor but who are close to the poverty line will be negatively affected. This threatens to include them in the poverty trap. When the effects of this on the poor are observed, withholding components of the ration cards from all families will increase the national poverty rate from 23 percent to 34 percent, according to the social and economic scan of the families in Iraq. Therefore, it is necessary to implement a process of reforming the ration card system gradually, as the resources saved from spending on the cards will be directed to meet social protection needs. This will negatively affect the income of the poor.

Means of achieving the objective

1. Establishing and implementing procedures that guarantee good application of the social protection network
2. Setting and implementing procedures to supply aid to the poorest and neediest people.

Fewer discrepancies between men and women

The plan aims to reduce the discrepancies between men and women, whether in favor of men or women. Making women better economically enabled by achieving equality in education and employment opportunities and earning a fair income are considered among the fundamental bases to reduce the poverty among women. The social factors that cause their poverty are no less important than income factors, as social traditions impose restrictions that generate and reproduce poverty, especially in rural areas.

The results of the social and economic scan of the families in Iraq have shown that there is a gap between the two sexes among poor people in enrollment at the different education stages, in illiteracy, and in participation in economic activity.

The rates of girls' enrollment in elementary schools are low compared with those of males. The social gender gap of the poor is very large in rural areas—approximately 40 percent of girls in these areas are not enrolled in elementary schools, compared with approximately 20 percent in urban areas that are not enrolled. There are cases where the difference is not in favor of men. For example, the rate among the poor of full enrollment at the secondary level favors of females because males want to leave their studies and find a job.

Illiteracy among the poor at age 10 and over is 38 percent for females compared with 18 percent for males. The gap in rural areas is larger than in urban areas—46 percent for females and 19 percent for males. The rate of economic participation by poor women is 11 percent, compared with 78 percent for males.

The reason for the differences between the men and women in general is not legislative inertia, but social and cultural factors.

Means of achieving the objective:

1. Extending programs that deal with factors that cause low rates of females' enrollment in elementary, intermediate, and secondary schools
2. Preparing and implementing specialized training programs for poor women to increase available employment opportunities for them
3. Issuing legislation and programs to achieve social security for poor women.

Chapter Ten

Spatial Development and Environmental Sustainability



Spatial Development and Environmental Sustainability

10.1 Spatial Development

10.1.1 Spatial Development Policies in Iraq

Iraqi national interest in the spatial dimension of development began in the 1960s, as the 1965-1969 National Development Plan emphasized the concept of spreading industries throughout several Iraqi provinces, similar to the paper, glass, and mechanical industries that took hold in Alexandria. This affected rural-to-city migration and from there came the initiative to spread development outside the major urban areas of Baghdad, Mosul, and Basra.

Systematic thinking and adoption of spatial development as a method of planning development in Iraq began in the early 1970s. This led to the establishment of government agencies specializing in the spatial dimension (1972 Regional Planning), which took responsibility for the various aspects of the spatial development planning tasks. Interest in spatial dimensions continued, and several studies and province development plans were completed. In addition, indicators were defined for regional development and urban planning systems in Iraqi cities, based on the possibilities and features of spatial development in the provinces.

Spatial development aims primarily to distribute the fruits of the basic development process in a balanced and equitable way among the provinces. It seeks to reduce economic, social, and urban disparities among the regions of the country on the one hand, and between urban and rural areas on the other hand. It does so by exploiting and efficiently investing in potential and comparative advantages available in each province or territory. In other words, spatial development seeks to create relatively balanced development among regions; achieve some kind of balance by maximizing economic development growth rates on the national level; and create an even distribution of development benefits among the country's regions, achieving the principle of integrated development.

There are many factors behind directing investments in its various forms (public or private) to some areas while excluding others. Some of those factors are related to the capabilities of one area—also known as the spatial advantage—and the availability of financial and human resources to receive these investments as compared to areas that cannot fulfill that requirement. This applies to production, industrial, agricultural, and tourism activities, some of them market-related, others dependent on the areas' need for services and infrastructure.

Successive state economic plans have attempted to focus on spatial development. Indeed, they have emphasized mitigation of the dual spatial development phenomenon characterized by developed and less developed cities. They have also worked to find a spatial development pattern that is better suited to developmental requirements in the country. This work has included distributing and spreading investment and development projects, particularly those unrelated to vital underground resources, in a way that enhances sustainable spatial development while protecting the environment from pollution and achieving consistency between development and environmental policies.

Over the past forty years of regional planning, spatial development has focused on a number of basic principles that can be summarized as follows:

10.1.1.1 Industrial Site Policy

Since the early 1960s and 1970s, there has been a clear direction in Iraq emphasizing the necessity of spreading economic development and industry across all provinces; creating balanced spatial development; reducing economic and social disparities; distributing population in a balanced way; and stopping it from becoming concentrated in large urban areas. The industrial site policy is one of the policies adopted for both individual and large industrial complex projects. Industrial development indicators, consisting of workforce distribution and value added for each province, reflect a clear trend towards lowering Baghdad's dominance of the industrial structure in Iraq. It went from accounting for about 60-70 percent of the value of these indicators in the early 1970s to about 39-42 percent at the beginning of this decade. However, the absence of a comprehensive spatial development policy in Iraq has reduced the significance of the industrial site policy. That is because it has not been used in a manner that achieves spatial development goals in a comprehensive way. This has, in turn, led to the concentration of population, as well as economic, social and urban activities in some cities but not others.

10.1.1.2 New City Policy

This has been one of the tools to stop population concentration. This policy began to appear in Iraq to combat increasing population growth in Baghdad specifically and other major urban areas like Basra and Mosul in general. This arose as a result of economic development and its concentration in those areas. Several studies were conducted to surround Baghdad with cities, aiming to attract new population waves, absorb overpopulation, and create a suitable investment environment for new industries. Among the cities proposed were the new cities of Zubaidiyah in the Wasit province and Thar'thar in the Anbar province. The hope was for the population of these cities to reach 300,000 and for them to provide services and have economic activity independent of Baghdad.

In addition to proposing these new cities, other proposals were made for satellite cities close to Baghdad, such as Husainiyah, Nahrawan, and Saba'a al Bur. These cities were created and helped limit population concentration in Baghdad.

Advisory studies on spatial development also suggested developing existing cities located within the regional impact of major cities. As a general rule, these proposed new cities were not created. Further, population growth was limited to existing cities and some of the aforementioned satellite cities.

10.1.1.3 Development Center (Development Pole) Policy

This policy and the attempts to implement it in Iraq are one of the procedures aiming to redistribute the benefits of development and spread them spatially, as well as redistribute the population.

10.1.1.4 Rural Settlement and Development Policy and Plans

The rural settlement policy focused on the bases and standards for selecting main villages that could be considered hotbeds for rural development, so those (mother) villages can accommodate the villages nearby to get rid of arbitrary rural spatial distribution and the difficulty of offering services to them.

This plan for rural settlement was adopted in 1980. It was implemented toward the end of 1982 in accordance with scientific and practical methods used to select the cities that would be candidates for development. This selection was performed by analyzing economic, urban, and social data for all villages. The rural settlement and development plan managed to reduce the number of villages in Iraq from approximately 12,000 villages, inhabited by four million rural residents, to approximately 4,000 villages.

The experiment of selecting candidate villages for development was relatively successful. The reasons behind that may have been the participation of farmer representatives in selecting the villages that would be candidates for development. This indicates the importance of local community involvement in the planning process. Iraq's involvement in consecutive wars as of the early 1980s prevented implementation of this plan and reinforced underdevelopment, poverty, and deprivation in rural Iraq.

10.1.1.5 Policy for Spatial Dispersion of Investments

Since the mid-1970s, the issue of investment has remained an important dimension of restructuring spatial development in Iraq. It has also been a means of reducing developmental disparities among provinces, as well as between urban and rural areas; and a means of spreading industries, agricultural development, land reclamation, and infrastructure, particularly roads, throughout Iraq's provinces. In the 1970s and 1980s, some of the most prominent attractions in Iraq were Akashat in Anbar, where a large industrial phosphate fertilizer complex was set up, and the Baiji industrial complex in Salah al-Din province, operating in the chemical, refining, and petrochemical industries. These two provinces attracted 9.9 percent, 6.2 percent, 10.2 percent, and 6.9 percent of the investments associated with the 1976-1980 and the 1981-1985 national development plans. The Khor Al-Zubair area in Basra also possessed a primary development attraction. It attracted the iron, steel, and petrochemicals industries, as well as power generation stations and refineries. It was the largest development attraction in Iraq, as it attracted approximately 21.2 percent of the total investments from the 1976-1980 national development plan. Alexandria, in the Babel province, also constituted another development attraction. It specialized in both mechanical and military industries. In addition to those major attractions, substantial investments were directed to a number of other provinces, to create secondary attractions in provinces like Maysan for food industries and Diyala for electrical industries and poultry farming.

Those indicators confirm that the 1970-1974 plan ushered in the Baghdad province's prominence in regards total investment allocations, with a share of 23.9 percent, followed by the Basra province, with a share of 14.8 percent. In other words, 38.7

percent of total allocations were concentrated in two provinces. This preferential treatment continued during the implementation of the 1976-1980 development plan, with a few exceptions consisting of the emergence of new growth attractions (Salah al-Din and Anbar) with 6.2 percent and 9.9 percent, respectively, of that plan's investment allocations. This seems a significant shift in spatial dimensions toward new places that represent growth attractions and reduce the dominance of traditional central attractions. However, the 1981-1985 development plan stressed the need to reduce the economic and social development divide among Iraqi areas and to work toward improving the balance between developed and less developed areas. The plan also confirmed expanded provisioning of public services to low-income groups, and increased attention to reducing spatial inequalities between rural and urban areas. Despite these objectives, however, reality shows the continuing disparity among provinces. Indeed, Baghdad continued to receive the majority of allocations, at 37.5 percent. This confirms the disparity in spatial distribution of this plan's investments. Among the indicators confirming the opinion that regional disparity persisted is the indicator measuring the magnitude of labor working in the industrial sectors in the Baghdad province. That indicator was 52.1 percent as compared to the total population, which was 24.07 percent.

Per capita investment in the 1981-1985 plan reached 976 dinars. Some provinces exceeded the national average, Anbar and Salah al-Din, for example, where the per capita investment was 2,678 and 2,394 dinars, respectively. This reflects a trend of redistributing income toward new provinces outside main development attractions. It also reflects the superiority of the two major attractions, the Anbar and Salah al-Din provinces, over other provinces. Therefore, investment distribution in this plan was not careful to distribute development benefits over a larger number of provinces.

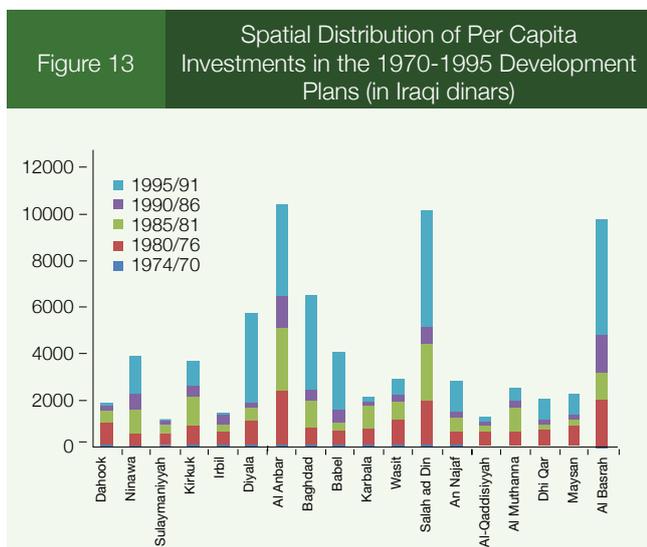
Figure 13 shows per capita investments from the 1970-1995 national development plans. At first glance, this distribution appears to reflect an important aspect of spatial development theories. The figure shows that development cannot be brought to all places at the same time, and that there is a hierarchy and a gradual process for expanding development. In turn, this means the continued superiority of the major developed attractions that contributed to comprehensive growth in their areas and surrounding areas. However, this cannot be practically proven in Iraq as large areas in the country continue to have low growth rates and are not affected by regional development in other areas.

The 1986-1990 plan confirmed continued and complete support for the military and promoted the economic objectives related to raising the standard of living among the population and achieving balanced development by analyzing the reality of spatial development. The plan concluded that it was crucial to reduce the concentration of spatial investments in traditional provinces. The plan also concluded that the actual reality did not represent the optimal solution because of continuing disparities in development levels per the plan's diagnostic criteria.

In addition to these analyses, the plan added a number of objectives with an emphasis on setting principles for regional development, such as reducing investment quotas for developed

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provinces, particularly with respect to the industrial sector; reducing the focus on economic factors when distributing projects; setting development criteria and indicators to help prioritize Iraq's provinces; and identifying the types of activities and events spatially.

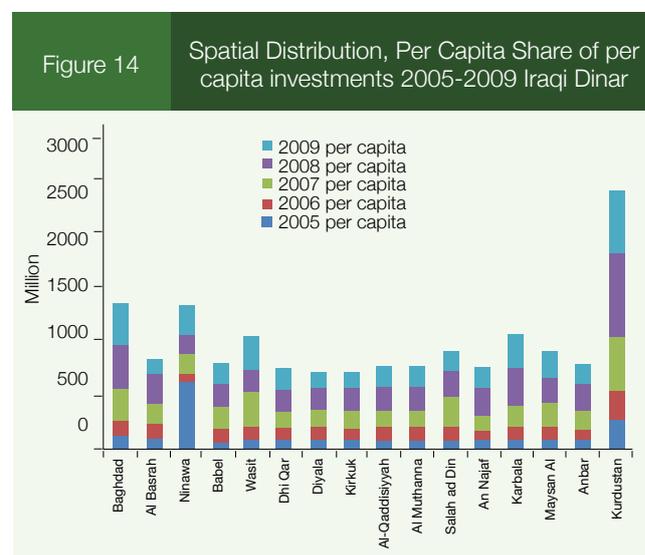


The 1986–1990 plan indicators show that there was a clear decrease in the relative magnitude of allocations earmarked for the Baghdad province, 21.7 percent as compared to 37.5 percent in the 1981 - 1985 development plan. There was continued relative focus on the two new development poles, Anbar at 13.9 percent, and Salah al-Din at 6.6 percent. These provinces attracted several vital projects, for example, the highway in the Anbar province and the construction of industrial and university projects in the Salah al-Din province.

The general framework of the 1991-1995 economic and social development plan (the first plan after the 1988 war ended) and its requirements in terms of reconstruction and rehabilitation should be analyzed. It is worth noting that the events of the 1990 war, along with the international economic sanctions and embargo that followed, significantly affected the development process in all of its aspects, trends, and priorities. Indeed, that plan was not even issued pursuant to a law. However, its goals stressed directing resources rationally to achieve comprehensive development; raising the population's standard of living; correcting disparities in the national economy; and offering new public services, particularly in the education and health sectors. On the spatial level, the plan's objectives included stressing the need to expand the social services offered so as to reduce spatial disparities by adopting planning standards for each service offered. Its detailed goals also included the need to establish new cities so as to reduce population concentration, attract population and investment movements, achieve balanced population distribution in rural and urban areas, organize the migration movement, and offer appropriate spatial conditions to mobilize human resources spatially.

As noted regarding the aforementioned goals, there was clarity in addressing the details of development goals spatially. This was performed in a way that reflects the reality of the current disparity. For example, the Baghdad province still enjoys a

notable majority of investment allocations, at a rate of 37.6 percent. The reason for that is known. Specifically, it arises from the damage suffered by the infrastructure in many economic sectors as a result of the excessive population concentration, which directly affected the other regional economies. New distribution standards were adopted after 2003. Indeed, one of the important standards in distributing allocations among provinces is population and its relative magnitude in each province. To a large extent, this standard reflects the actual need for investments. This is because people are the main target of every development effort. Consequently, the larger the population is in a province or municipality, the greater the need for investments. This is particularly pronounced in the public service and infrastructure sectors. Figure 14 shows that per capita investments in the Kurdistan region were the highest as compared to Iraq's other provinces.



There is a disparity in the pattern of spatial distribution of investments by economic sector and activity. If the magnitude of investments within provinces is supposed to be commensurate with the population, the degree of need, and deprivation of certain public services and infrastructures, then the magnitude of those investments in productive sectors, like tourism, for example, must be commensurate with the potential development of each province and its comparative advantage. Additionally, there are many economic activities that have requirements that necessitate spatial orientation toward one specific place and not others. This orientation serves a number of provinces or the country as a whole, and thus makes it difficult to calculate the magnitude of the investment as being for the province in which it is located.

10.1.2 Principal Features of Spatial Development in Iraq

The attention given to the spatial dimension of development in the 1970s and until the mid-1980s achieved results in terms of the distribution of economic activities and population, and the change in migration trends. Indeed, population growth rates fell in the Baghdad province from 6 percent to 2.9 percent in 1997 and the rural population growth rate rose from 0 percent to 3 percent. In addition, seven provinces were attracting people,

despite Basra's transformation into a province where the war conditions drove people away—and, combined with the economic sanctions, led to a lack of policy continuity. Thus, the policies had a reduced impact in the 1990s. In any event, there were and continue to be common general features in spatial development in Iraq. They can be identified as the following.

10.1.2.1 Spatial Concentration of Economic Activity and Population

Starting in 1950, and continuing on to 1995, most plans indicated a clear focus on the levels of economic and social development in a limited number of provinces. This generated a growing movement in mass migration toward these centers in a way that largely contributed to the spatial disparity between the developed and underdeveloped provinces in all aspects of economic, social, and urban development. These influences were reflected in the method of the population's spatial distribution: heavily populated centers were the same centers that enjoyed economic growth, so they continued to attract growth away from other areas. As a result, there was a correlation between the level of urbanization and economic development. Table 63, shows the relative distribution of population concentrations and investments in the Baghdad province for the period of 1965-2007 as compared to Iraq as a whole.

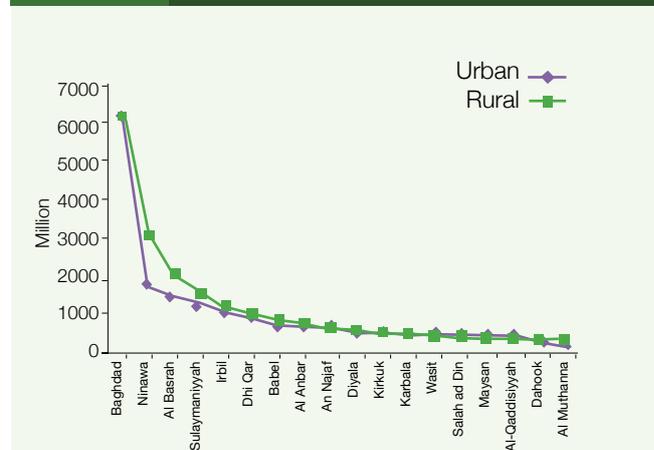
Concentration percent	1965	1977	1987	1997	2007
Population concentration as a percent of total in Iraq	25.4	26.6	23.5	24.5	24.1
Investment as a percent of total in Iraq	30.7	20.7	37.5	37.6	16.4

10.1.2.2 Loss of Hierarchy in the Human Settlement Structure and Continuation of Urban Sprawl

The spatial economy model in Iraq shows Baghdad's control as a dominant city at the urban structure level as compared to other Iraqi cities. Its dominance was reflected in most development plan results. The total population of the second largest city after Baghdad was one-sixth of Baghdad's. This contrasted sharply with the fifty percent rule set by the infamous Zair principle.

Figure 15

Hierarchical Rankings of the Population in Iraq's Major Cities



The application of hierarchical rankings in most provinces shows a population concentration in one dominant city. Indeed, the urban system in the one province is not far from this vision. In addition, when looking at the size of the cities and urban areas, and the hierarchical sequence pertaining thereto, we note that there is one dominant city within the province's urban system, and that it represents a center and developmental attraction in the province that attracts the majority of developmental investments.

10.1.2.3 Duality of the Spatial Economy

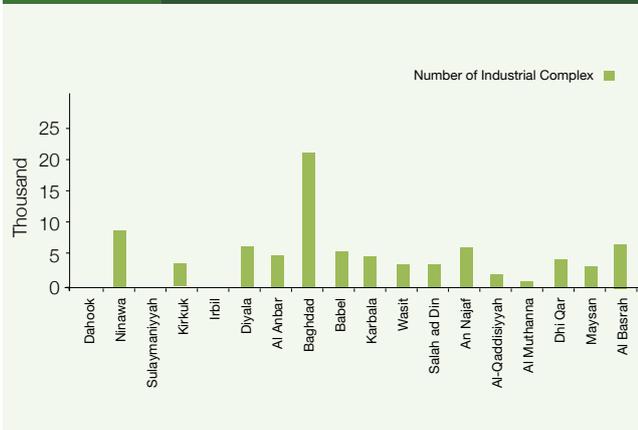
Based on the results that can be deduced from the spatial development experiment in Iraq, there is a clear duality in development. Indeed, there are major developed and underdeveloped centers in the cities and regions. These are characterized by their comparative advantage in terms of development and external resources (like land resource) and are more successful in attracting investments in its various forms, public and private, than other centers. Growth can be noted in those areas due to the rise in sectoral growth rates for various sectors of economic activities, like building industrial facilities, for example, (figure 16), population growth rates, per capita national income, or level of urbanization, as well as the scarcity of economic resources.

MoP conducted a study to evaluate the disparity in the levels of spatial development. To do so, the ministry used the regional income disparity coefficient, which accurately and clearly reflects the problem of regional disparities. The study concluded that the coefficient was very high, approximately 5.28, pointing to a considerable disparity in income levels among provinces. It also points to the concentration of wealth and income in certain provinces, particularly Baghdad, which is an obvious feature of Iraq's spatial economy.

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Figure 16

Spatial Distribution, Industrial Complex Construction by Province



10.1.3 Comparative Spatial Advantage and Developmental Capabilities

Determining the economic and geo-strategic role of any region or province, on the national level, depends on many factors, including the area's available capabilities, comparative advantages, and location within the territory of the country with its specific demographics, ethnicity, and so on. Moreover, some cities have economic and cultural roles within the country that go beyond their territory. This also requires accurate identification, as well as the establishment of programs and developmental curricula that ensure achievement thereof. At this point, it is crucial to identify the most important comparative advantages for development resources and their spatial distribution within the provinces and regions.

10.1.3.1 Spatial Distance and Comparative Advantage of Oil Resources in Iraq

According to geological studies, Iraq has about 530 geological sites, which gives a strong indication of the presence of massive oil reserves. Only 115 of those sites have been drilled. Of those, 71 have been proven to contain enormous oil reserves distributed among many fields. Of the 71 fields discovered in Iraq, only 27 have been used, including 10 giant ones. The oil and gas fields currently producing output are concentrated in the Basra and Kirkuk provinces. The provinces of Maysan, Baghdad, Dhi Qar, Diyala and Nineveh place second in terms of importance. However, there are still more undiscovered and undeveloped fields throughout the majority of Iraq's provinces, with the exception of Al Qadisiyah, Babil, Anbar and Dohuk.

Southern Oil Fields

The bulk of Iraq's oil reserves are concentrated in the southern province of Basra, where there are 15 fields, 10 of which are still producing and 5 of which are still awaiting development and production. These fields contain an estimated oil reserve of more than 65 billion barrels, approximately 59 percent of total Iraqi oil reserves. The oil reserves in the provinces of Basra, Maysan and Dhi Qar combined total around 80 billion barrels, approximately 71 percent of total Iraqi reserves. The most notable southern fields in Iraq are the following.

Northern Rumailah field is the largest Iraqi field, extending from the western side of Basra and southward, with its southern portion in Kuwait. The majority of its wells are in Iraq. It first produced in 1970. It is the ninth largest oil field in the world and one of the finest because of its layered nature that allows easy production. During the 1970s, it consisted of 20 wells—this figure has now increased to 663 production wells.

Majnun field is a giant well in the Maysan province and produces approximately 100,000 barrels per day. If its productive capacity is developed, it could produce 600,000 per day. Omar River field is also in the Basra province. It has many undeveloped locations. Its production capacity remains modest at approximately 1,000 barrels a day. However, after development its capacity could reach 500,000 per day.

Western Qarnah field is another of the largest Iraqi oil fields. It, too, is located in the Basra province and represents the northern stretch of the Rumailah Northern field. Production began in 1973 and it is believed to contain reserves totaling at least 24 billion barrels. It produces 300,000 barrels a day, and could reach around 700 thousand barrels per day if developed further.

Southern Rumailah field and Al-Zubari field (Southern fields in Basra) were first utilized in 1949 and produce approximately 220,000 barrels per day. There is also the Al-Lahees field west of the city of Basra, which has been worked on in stages since 1972 and which exports to the Al-Faw port and Al-Touba field.

The giant Al-Hulfayah field is close to the city of Umarah in the Maysan province in southeast Iraq. It contains more than 3.8 billion barrels of oil reserves. It is located in the same province as the Abu Gharb and Barazkan fields. Production there started in 1973. The oil in it is referred to as Basra and Fakkah field crude oil.

Northern Oil Fields

The oil reserve in Kirkuk is estimated at 13 billion barrels, which amounts to 12 percent of total Iraqi oil reserves.

Kirkuk Field is the fifth largest oil field in the world in terms of volume. It is a plateau with the small Zaab River cutting through it, about 96.5 kilometers long and about 4 kilometers wide. The depths of Kirkuk field wells range between 450 to 900 meters. Each well produces an average of about 35,000 barrels per day. When first utilized during the era of the Iraqi kingdom, the Kirkuk field had 44 wells. After nationalization of Iraqi oil in 1973, the field consisted of 47 production wells, 88 monitoring and exploration wells, 1 water injection well and 55 closed wells. The Kirkuk field comprises more than 330 production wells and is still expanding.

Bay Hassan field is located west of the Kirkuk field and parallel to it. Bay Hassan's wells are deeper than Kirkuk's wells, with depths ranging from 1,500 to 3,000 meters. Production there began in June, 1959. Jambur Field is north of Kirkuk and is parallel to the Kirkuk and Bay Hassan fields. Production there began in August, 1959.

The Khubar field is in the Kirkuk province, while the Ayn Zalut

Nadib field in the Nineveh province and the Batma field are located close by in a mountainous area. In addition, there are the Safiyah field, which is adjacent to the Syrian border, and the Al-Qayarah field in Nineveh province.

Investments were made in a number of oil fields in Kurdistan recently. However, production is currently limited to 100,000 barrels per day, with the hope of increases in the near future.

Central Oil Fields

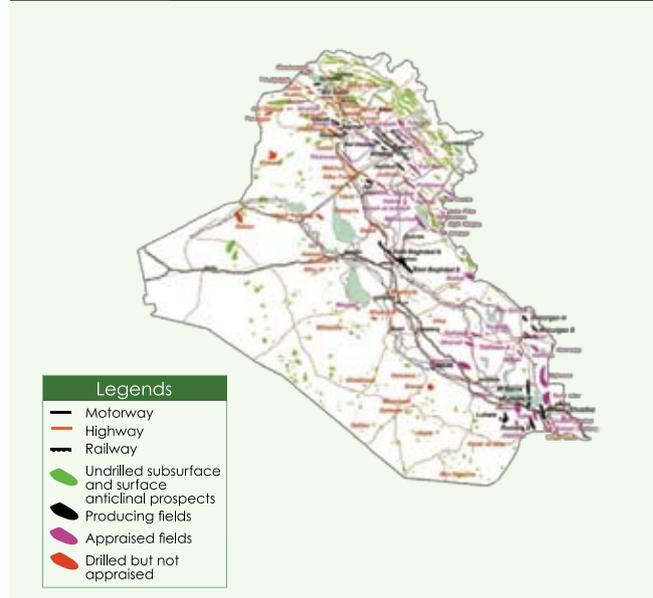
East Baghdad Field: It was thought to have small oil reserves. However, it has turned out to have a much larger capacity than initially thought. It has northern extensions and its production capacity is around 20 thousand barrels a day. It is estimated that total production could reach 120 thousand barrels a day if it is fully developed.

Khanah Oil Field in the Diyala Province and other fields in Al-Anbar in the western portion of the country.

Table 64 shows the distribution of productive oil fields in the southern, middle and northern provinces. Map 2 shows the spatial distribution of current and potential oil fields in Iraq.

Map 2

Spatial Distribution of Oil Bearing Regions in Iraq

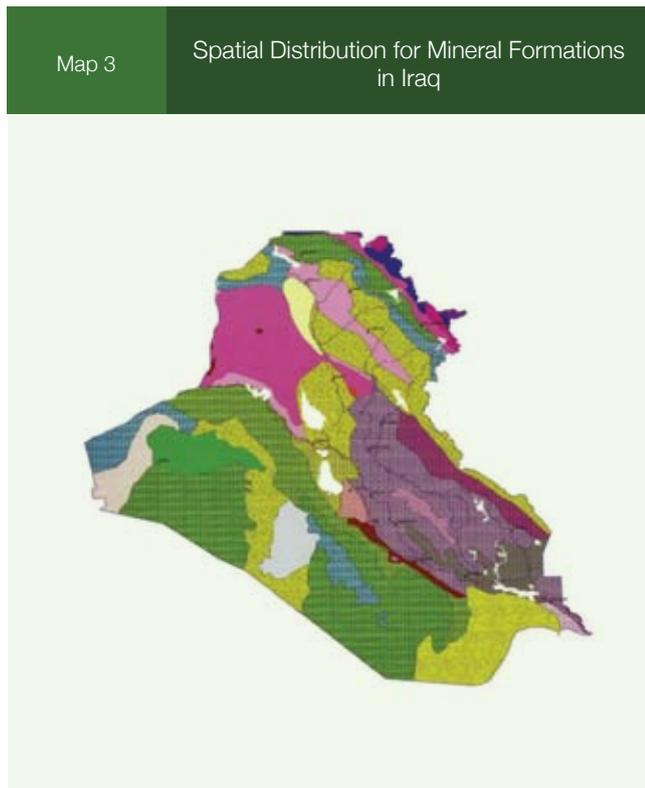


Province	Field	Number
Basra	North Rumailah, South Rumailah, Al-Zubair, Omar River, West Qurnah, Al-Luhais, Al-Tubah, Al-Subah, Al-Hulfayah	9.0
Maysan	Majnun, Al-Barzakan, Abu Gharb, Fakkah, Al-Umarah	5.0
Wasit	Al-Ahdab	1.0
Dhi Qar	Nasiriyah Field	1.0
Baghdad	East Baghdad	1.0
Diyala	Khanah Oil	1.0
Kirkuk	Kirkuk, Jambur, Bay Hassan, Khubaz	4.0
Nineveh	Ayn Zalat, Al-Qayarah, Safiyah, Batma	4.0
Al-Anbar	Ukaz Field	-

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10.1.3.2 Distribution of Mineral Ores and Comparative Advantage of Provinces

Map 3 is a spatial economic and geological map showing the distribution of the areas with natural mineral resources in Iraq. The map shows that there are provinces rich in some minerals, in terms of the quantity of available reserves or mineral variety. Other provinces' lack of those resources affects their ability to attract investments commensurate with the resources available.



Al-Anbar province is considered one of the richest in Iraq for its many types of available resources, such as limestone, dolomite, phosphate, sand, gypsum deposits, glass sand, cement, clay, and iron, that is, nine resources in large quantities. As a result, the phosphate industry was subsequently established in Ukashat, along with the glass industry and others.

Nineveh province is another with deposits of limestone, sand, sulfur, gypsum, clay, and cement materials. It contains 95 percent of Iraq's sulfur reserves.

Sulaymaniyah province contains raw materials and mineral resources—gypsum, copper, lead, nickel, iron, sand, limestone, cement, and clay, as well as a large proportion of dolomite, accounting for 57 percent of this resource's reserves.

Muthanna province contains raw materials needed in the cement and chemical industries. It contains 57 percent of the country's dolomite reserves and 19 percent of its limestone reserves.

Irbil province is yet another province rich in metals like copper, chromium, nickel, manganese, iron, zinc, and lead.

Kirkuk province contains deposits used to make clay bricks and gypsum, as well as sand and significant deposits of tectonite and sulfur.

Karbala province is known for one of the most important mineral sand sediment deposits, containing 42 percent of this resource, in addition to deposits of limestone and the mud used to make cement and clay bricks.

Najaf province, together with Karbala province, contains the largest site for sand sediments in Iraq. It also contains 17 percent of Iraq's limestone sediment reserves, as well as dolomite.

Salah al-Din province contains 48 percent of plaster deposit reserves, 20 percent of gypsum reserves, and 6 percent of total sulfur reserves, ranking second after Nineveh province in this reserve.

Diyala governorate is famous for its large quantity of brick clay, in addition to small plaster and sand deposits.

The rest of Iraq's provinces, particularly Wasit and Qadisiyah, Basram Dhi Qar, and Maysan contain sand and clay. The Baghdad and Babil provinces are among the poorest in terms of mineral resource deposits, with the exception of clay deposits that can be used to manufacture clay bricks in Muhawil and Al-Qasim in the Babil province. Table 65 shows the spatial distribution of mineral resources with comparative advantages in Iraq's provinces.

10.1.3.3 Analysis of Indicators for Comparative Advantage and Industrial Settlement

The location factor standard is one of the most common indicators in spatial analysis. It is used to estimate a territory's relative share of certain industries. This standard compares the relative share of any region of a given industrial activity to that of another standardized area in the same activity. It is used for purposes of comparing data at the national level. This method allows use of several variables to measure the location's factor. These include the number of workers, added value, and production value. An analysis of the comparative advantage indicators for the provinces of Nineveh, Baghdad, and Karbala indicates that they have attracted many industrial projects in various industrial activities. This reflects the phenomenon of industrial concentration in those provinces, as they had different location factors that have attracted all industries and their different branches.

The provinces of Diyala, Babil, Najaf, and Qadisiyah attracted projects from the majority of industrial branches, except for extractive industries. The location factors among these provinces varied for different industries. Wasit, Salah al-Din, Al-Muthanna, Dhi Qar, and Basra provinces attracted six industrial branches where the location factors varied from one industry to another and from one province to the next. Anbar province attracted five industrial branches and focused on the construction industry, as it had a high location factor of 4.5. The food, textile, wood, paper, construction, and metal industries were distributed among all provinces and were considered prevalent industries because of the abundance of primary

Province	Available resources
Al-Anbar	Phosphate, dolomite, limestone, gypsum, sand, quartz, "glass" sand, cement, clays, iron
Nineveh	Limestone, sulfur, gypsum, sand, plaster, cement clay
Muthanna	Brick clay, cement clay, limestone, salt, sand, plaster
Kirkuk	Plaster, sand, brick clay, cement clay
Karbala	Cement clay, limestone, gypsum, sand, plaster
Salah al-Din	Rock, sand, sulfur, gypsum
Diyala, Wasit, Qadisiyah, Maysan, Dhi Qar, Babil, Baghdad	Cement, brick clay
Sulaymaniyah	Lead, zinc, iron, limestone, sulfur, gypsum, plaster, sand, cement clay
Irbil	Copper, chromium, nickel, manganese, iron, zinc, lead, limestone, gypsum
Dohuk	Lead, zinc, larium

resources and the growing demand for industries that require dissemination in many regions.

Chemical industries were concentrated in most provinces, with the exception of Anbar, al-Muthanna, Dhi Qar, and Maysan. The highest location factors were recorded in Salah al-Din and Basra provinces, with factors of 3.89 and 3.45, respectively. Chemical industries are concentrated in the cities because they represent large markets for their products, and consumption patterns typical of urban populations. The oil refining industry is less prevalent than others, concentrated in the provinces of Nineveh, Salah al-Din, Basra, Baghdad, and Diyala. The extractive industries have been concentrated in the provinces of Nineveh, Baghdad, Karbala, Salah al-Din, and Al-Muthanna. The Nineveh province recorded the highest location factor—6.3— for this industry. Finally, manufacturing industries were concentrated in the majority of provinces, but recorded a very high location factor of 15.50 in the province of Dhi-Qar.

10.1.3.4 Comparative Advantage of Agricultural Development in Provinces

The new plan provides a detailed analysis of agricultural potential and limitations. When analyzing the sector, its focus will be on the sites most favorable for agricultural production and where provinces have a comparative advantage in agricultural spatial terms with respect to appropriate crop composition per square mile and livestock productivity. For example, the average wheat crop productivity in Iraq in 2007 reached 350.8 kg /sq mi. The provinces of Najaf and Qadisiyah came in at first place with an average of 644.6 and 666 kg/sq mi., respectively. The province of Nineveh had the lowest productivity rate with 169.1 kg/sq mi., despite it having the country's largest area for wheat crop cultivation. The provinces of Qadisiyah and Wasit had the highest barley productivity rate per square mile with 303.7 and 428.7 kg/sq.m, respectively. The provinces of Salah al-Din and Wasit achieved the highest rate of palm tree productivity with 73.9 and 74.5 kg, respectively. (See figures 17, 18, 19.)

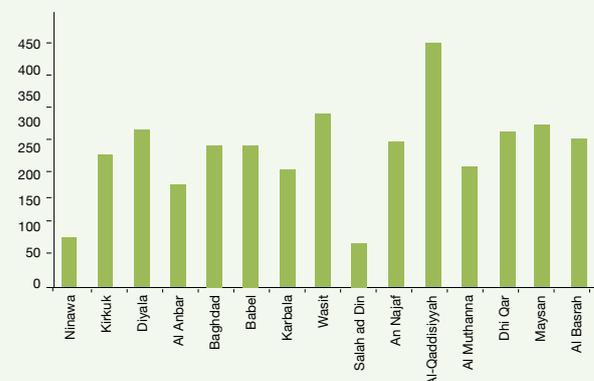
Figure 17

Average Wheat Crop Production in Iraq (kg/sq mi)



Figure 18

Average Barley Crop Production in Iraq (kg/sq mi)



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Agriculture provides food needs as well as products utilized in manufacturing. According to the 2001 calculation, the Wasit, Babil, and Baghdad provinces had the largest number of cows at 147,656, 142,421 and 135,725 head, respectively. The provinces of Baghdad, Basra, Maysan, and Najaf placed first place in buffalo rearing, with 34,346, 14,348, 11,061, and 10,403 head, respectively. The Nineveh province occupied first place in the number of sheep, totaling 1,193,769 head, and the provinces of Diyala and Wasit came in first in the number of goats, with 122,982 and 130,347 head, respectively.

10.1.3.5 Comparative Advantage of Tourism

Iraq has significant and diverse tourism potential. Indeed, its varied climatic conditions, terrain, and environments provide it with exceptional natural areas that are unique tourism spots with significant comparative and competitive advantage regionally and internationally. It also has a vast cultural and religious heritage that the country has cherished since ancient times and that creates the potential for religious and archaeological tourism. Furthermore, the northern mountain regions, with their unique surface characteristics, are an important tourism attraction for their beauty, mild summer weather, and snowy winters. As well, the central and southern regions are characterized by their flat terrain, through which pass through the Tigris and Euphrates rivers. The dense orchards on both sides of these rivers make them very attractive from a tourism perspective as they are ideal for picnics. Moreover, there are numerous lakes that are good areas for establishing tourist activities, including Lake Habbaniyah, Lake Razzazah, the lakes formed by the Mosul, Haditha, and Tharthar dams as well as natural marshes. See map 4.

Archaeological evidence points to the existence of ten thousand archaeological sites in the country. They cover an era spanning from the Stone Age more than 100,000 years ago to the more recent Islamic periods. Iraq is distinguished by its vast potential in the religious tourism industry. With its provinces' tall minarets and golden domes with beautifully ornate decorations that tell the ancient stories of prophets, imams, and scholars. There are also several ancient churches and monasteries in northern Iraq. The country has many tourism facilities, hotels, and hotel apartments to serve religious and other tourists (figure 20).

10.1.3.6 Spatial Dimension and Comparative Advantage of the Road Network in Iraq

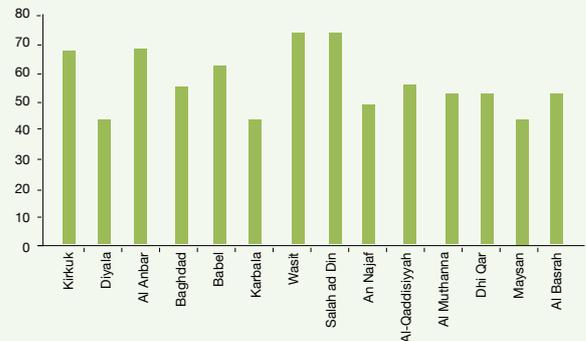
Iraq has a wide network of public roads and highways that is close to 42,000 km in total roadways. Most of the network was constructed during the 1970s and 1980s. The majority (map 5) extends longitudinally, parallel to the Tigris and Euphrates rivers, with the exception of the northern areas, where traffic volume has increased and is causing many problems.

10.1.4 Spatial Disparity in Development and Levels of Deprivation

10.1.4.1 Spatial Disparity in Development

Over the past four decades, spatial development policies clearly tended toward focusing development on specific provinces. This resulted in a clear disparity in levels of development among the provinces, on the one hand, and between rural and urban

Figure 19 Average Palm Tree Production in Iraq (kg)



Map 4 Tourism potential



Legends

- Archaeological area
- Modern cities with important architecture and antiquities

Figure 20 Spatial Distribution of Tourism Facilities in Iraq



Map 5

Road Network in Iraq



areas, on the other. At the province level, studies in this area confirm three distinct levels of economic, social, and urban development, described as “advanced,” “relatively developed,” and “underdeveloped.”

According to studies prepared in 1991, there are 8 underdeveloped provinces:

- Dhi Qar, ranked 18th
- Wasit, 17th
- Al-Sulaymaniyah, 16th
- Dohuk, 15th
- Al-Qadisyah 14th
- Diyala, 13th
- Maysan, 12th.

The relatively developed provinces are:

- Najaf, 11th
- Irbil, 10th
- Kirkuk, 9th
- Al-Muthanna, 8th
- Babel, 7th
- Karbala, 6th.

The advanced provinces are:

- Nineveh, 5th
- Al-Anbar, 4th
- Salah I-Din, 3rd
- Al-Basra, 2nd
- Baghdad, 1st.

According to a more recent study (2009), the least developed provinces are Diwaniyah, Maysan, Al-Muthanna, Dhi Qar, and Diyala. The relatively developed provinces are Najaf, Kirkuk, Nineveh, Salah al-Din, Wasit, and Karbala. The most developmentally advanced provinces are Basra and Baghdad, with the latter ranked in first place.

Table 66 Deprivation Levels in Basic Needs According to Each Sector In Iraq

Province	Economic situation	Protection and social security	Education	Health	Infrastructure	Housing	Standard of living index	General standard of living index
Nineveh	48.5	29.1	30.8	28.2	55.3	23.1	34.2	11.0
Kirkuk	22.5	33.7	22.2	29.8	61.8	13.5	21.0	3.0
Diyala	44.1	49.3	16.4	30.6	83.8	18.3	33.7	9.0
Anbar	26.8	29.5	15.1	16.5	48.2	3.9	11.6	1.0
Baghdad	21.6	35.9	16.7	21.3	34.3	28.2	18.4	2.0
Babel	38.2	27.0	40.3	24.6	74.4	35.1	35.3	13.0
Karbala	41.1	28.1	52.1	13.3	59.5	39.0	34.0	10.0
Wasit	42.6	26.1	32.7	37.9	59.6	34.5	36.3	14.0
Salah al-Din	38.2	39.9	33.6	21.9	72.3	21.0	33.5	8.4
Najaf	42.2	29.2	38.6	18.7	40.5	33.0	30.3	7.0
Qadisiyah	47.3	34.1	39.3	39.8	63.5	46.5	44.4	16.0
Muthanna	55.3	35.0	46.3	26.3	63.4	39.1	44.8	17.0
Dhi Qar	51.9	33.6	35.8	26.9	74.7	45.2	42.9	15.0
Maysan	44.4	31.3	51.7	53.2	87.9	44.5	56.6	18.0
Basra	40.7	20.0	21.6	27.6	66.4	25.5	29.6	6.0
Kurdistan								
Dohuk	44.7	34.5	40.4	40.0	30.2	30.4	34.2	12.0
Sulaymaniyah	18.2	30.3	29.8	29.5	35.6	35.0	24.5	4.0
Irbil	22.4	31.3	33.7	38.3	32.9	31.1	26.4	5.0
Iraq	34.1	32.6	27.9	27.2	52.8	28.7	28.7	

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10.1.4.2 Deprivation and Living Standard Indicators

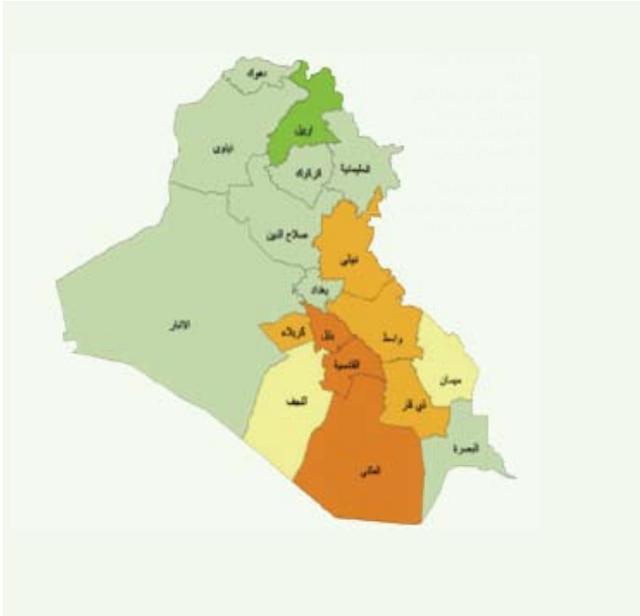
The spatial deprivation and standard of living (table 66) was adopted by the National Report on the State of Human Development. It depicts the spatial deprivation in provinces in education, healthcare, infrastructure, housing, housing surroundings, and economic situation. Thus, it depicts where basic human needs are not met.

There is a large scarcity in Al-Muthanna province, which is ranked in last place among Iraq's provinces in terms of the number of deprived families across all indicators. Regarding the seven areas of deprivation listed in the table, the Maysan province had a rate of 87.8 percent in the area of infrastructure due to the decline in that sector. The Qadisiyah province had a rate of 46.5 percent in the housing area. The Nineveh province had a rate of 48.5 percent in the economic situation index. The Maysan province had a rate of 56.4 percent in the general standard of living index.

The high deprivation levels and low standard of living in rural areas as compared to urban areas and cities was very clear. The deprivation levels in rural areas in education, health, and housing were three times higher than those in cities. Indeed, the study suggests that the standard of living in Iraq is linked, to a large extent, with urbanization levels. Thus, the struggle in rural areas is greater than urban areas (map 6). For example, when analyzing the deprivation levels in the rural areas of Karbala, the picture becomes clearer: the percentage of households classified as deprived is 58.5 percent in the education sector and 94.4 percent in the infrastructure sector. This is the case in rural areas for other sectors; in general, their rate of deprivation is greater than that in the rest of Iraq.

Map 6

Deprivation Rates Among Families in the Provinces



The provincial poverty index mentioned in the National Report on the State of Human Development showed that poverty

increased above the national average of 18.8 percent in three provinces. The provinces with a poverty index lower than the national average were Karbala 16.2 percent, Basra 17.5 percent and Anbar 16.4 percent. In contrast, the rate for Muthanna was 30.0 percent and for Maysan was 30.2 percent. The latter was the worst off according to the poverty index. Perhaps the biggest problem in this province was the lack of access to drinking water, which amounted to 46.9 percent. This province also had the highest illiteracy rate of any province, at 34 percent among adults. The provinces of Dohuk and Salah al-Din were ranked 16th and 15th, mainly because of the high rates of illiteracy among adults in Dohuk, estimated at 41 percent, and the low life expectancy in Salah al-Din, at 36.2 years. The human development report sees clear differences among the provinces in the Kurdistan region, where Irbil made significant progress in education, health, and income compared to Sulaymaniyah and Dohuk. However, in the rate of female enrollment in education, Sulaymaniyah surpasses Dohuk and Irbil; this will deepen the current disparities if planning authorities do not address this difference.

10.1.5 Spatial Developmental Capabilities

There are several factors that provide Iraq with the appropriate platform to correct the development spatial structure in a more balanced and complete way. These include its diverse natural terrain and soils suitable for agriculture and construction industries, the presence of the Tigris and Euphrates rivers and their tributaries, the large hydrocarbon resources, and the presence of primary and secondary development centers in Iraq's provinces in general.

Development has to be conducted in a manner consistent with the economic, social, and human features of each province. It should also work to reduce the development disparities among provinces and between urban and rural areas, thereby preventing dual spatial development phenomenon and uneven hierarchical spatial distribution.

The plan has adopted a regional spatial analysis method. This provides the opportunity to maximize growth rates in many parts of the country through better exploitation of local resources, building of regional partnerships, and establishment of development hubs consistent with local potential.

10.1.6 Spatial Development Challenges

1. Continuing dominance of the dual spatial development phenomenon, with the limited developed areas, especially in major cities and central province cities that take up the largest share of economic activity, services, and infrastructure as compared to the underdeveloped regions, particularly in the rural districts and counties
2. Continuing presence of extreme spatial concentration, particularly urban, in a very limited number of large cities. Baghdad, Mosul and Basra account for 55 percent of the urban population
3. Absence of a comprehensive policy for urbanization
4. Continuing migration from rural to urban areas, and from villages to cities, along with the subsequent depletion of

small rural towns' productive human resources, and the pressure that puts on already scarce housing and public services in the cities attracting new populations

5. Continued lag by rural Iraq in terms of low levels of income, lack of services, and the concentration of poverty in rural areas, coupled with the difficulties of spreading basic services, such as education and health, to rural villages, particularly those with populations of less than 200-300 people
6. Continuing existence of large disparities in services and infrastructure, as well as residential overcrowding in certain provinces and, to a larger extent, in urban as compared to rural areas—reflecting deprivation levels and unsatisfactory fulfillment of basic needs in regions that benefit less from development as compared to developed regions
7. The arbitrary urban sprawl on farmland and the excessive violations during recent years of different land usages, especially within the limits of the cities' basic designs
8. The growing desertification problem, as well as lack of vegetation in desert and semi-desert areas and in the mountainous regions
9. The absence of basic rural settlement plans, a reflection of the indiscriminate use of land, particularly agricultural land
10. The absence of long-term plans for regional land use and the lack in most Iraqi provinces of industrial or investment zones planned on a scientific basis; these limit the deployment of spatial investments
11. The weak link between economic and industrial development policies, particularly urbanization and population distribution policies
12. The emergence of inequality between provinces with respect to obtaining water shares for agricultural and other uses, exacerbated over recent years by the limited water resources entering Iraq from countries north of the Tigris and Euphrates rivers and their tributaries
13. The lack of thorough use of the Jazeera and southern deserts to develop natural pastures, resulting in decline in herds of sheep, cows, and goats.
14. The low level or lack of use of water bodies to develop fish resources
15. The weak (east–west) interconnection of road and railway networks
16. Poor exploitation of tourism potential across Iraq's regions, and reliance only on religious tourism, which is very limited compared to the overall neglected potential of historical, archaeological, natural, and recreational tourism, despite the tremendous potential in those areas.

10.1.7 Spatial Vision

Creation of comprehensive and continuous spatial development in Iraq's provinces so as to create equitable opportunities for access to public services and infrastructure; reduction of the development gap between urban and rural areas; and optimized use of natural resources and capabilities of Kurdistan

and provinces unaffiliated with a region. These measures would lead to achievement of spatial development equality in line with the needs, capabilities, and relative features of Iraq's different regions and provinces. They would also contribute to resolving duality in spatial development, the extreme concentration of populations, and the current economic situation.

10.1.8 Spatial Development Objectives

1. To limit the dual spatial development phenomenon in Iraq as a whole, as well as within each province
2. To limit high population concentrations to a few cities, put an end to the dominant city phenomenon in Iraq as a whole as well as within each province, and to stimulate the growth of medium- and small-sized cities
3. To stimulate growth in rural areas and reduce development disparities between them and urban areas by developing sectoral policies, particularly agricultural and rural development policies
4. To reduce the great disparity in public services and infrastructure available among provinces and within each province; further, to reduce the disparity in satisfying basic needs in the aforementioned areas and adopt that approach as a basic requirement for comprehensive spatial regional development
5. To work on reducing unplanned urban sprawl onto farmland, particularly reclaimed farmland or land falling within the scope of future reclamation programs
6. To adopt basic plans for land use in rural settlements with the aim of rationally using land and preserving agricultural land
7. To effectively address the problem of desertification and lack of vegetation in desert areas and rural Iraq
8. To exploit the potential of exclusive areas like mountains, marshes, bodies of water, the countryside, and the western desert by intensifying their use in accordance with their natural uniqueness and comparative advantages
9. To strengthen the transport network in Iraq so as to establish means of linking cities, particularly small and medium-sized cities
10. To develop and build capabilities in the planning area; prepare long-term strategies for spatial development based on knowledge partnerships and coordination; reduce poverty and slums on the outskirts of cities; and generally improve the economies and quality of life in rural areas.

10.1.9 Means of Achieving the Objectives

1. Adopting an investment policy that secures the distribution of:
 - Providing services and infrastructure in proportion with population size in provinces and settlements, with their level of deprivation in previous periods, and with the specifics of cities and provinces
 - Encouraging productive economic activities,

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particularly agricultural and industrial, and promotion of tourism in accordance with the capabilities and comparative advantages of Kurdistan and unaffiliated provinces, with ensured economic efficiency in that respect

- Supporting major infrastructure facilities like airports, ports, metro tunnels, highways, railway networks, dams, reservoirs, research centers, and specialized hospitals consistent with hierarchical structures that provide an effective system in Iraq; distribution of active strategic and vital projects, and completion of Iraq's interconnection with the surrounding region.
 - Investing in the principle of site-neutral activities so as to develop areas facing problems or those suffering from poor development potential.
2. Creating at least one integrated and environmentally friendly industrial area, planned using the latest principles and criteria, outside a city in each province, after ensuring provision of all infrastructures so as to be ready to accommodate local private sector and foreign investors
 3. Supporting and encouraging domestic and foreign private investments in underdeveloped regions, through tax and customs incentives, credit facilities, and acquisition of land for investment purposes under lenient terms
 4. Implementing integrated rural development plans aimed at nominating main villages according to the basic scientific foundations of population size to ensure the availability of service programs and infrastructure to the rural population
 5. Reinforcing coordination between economic and industrial development policies, particularly policies on urbanization and the distribution of settlements
 6. Preparing integrated and structured provincial plans to organize regional land use and provide a suitable investment environment at the local and regional level; and ensuring promotion of development in development centers and attractions while achieving economic integration among regions and unaffiliated provinces
 7. Encouraging research and development in all provinces by coordinating among universities and business centers to create new methods and products on an experimental basis
 8. Creating development poles which serve more than one province or city in order to raise productivity and create the potential for competition.
 9. Strengthening local planning institutions in the area of planning, monitoring, and evaluation of the national plans' implementation of five-year goals and projects
 10. Strengthening the regional information database and upgrading analytical capabilities for local planning personnel in a manner that contributes to future developments in the methods and strategies associated with preparing development plans

10.2 Environmental Sustainability

10.2.1 A Look at the Environment in Iraq

10.2.1.1 Before 2003

Over the past three decades, Iraq has suffered clear environmental neglect and faced many problems and challenges. Their causes vary: irresponsible decisions taken with no consideration of future consequences and complications; developmental policies with severe environmental consequences adopted based on the idea that environmental deterioration is just the price to pay for development. These environmental issues were exacerbated by the population increase, the rise in the number of poor people, who place pressure on natural resources, the lack of reliance on modern methods to address pollution produced by wars, and the poor relationship between the economy, the environment, and people.

The results include clear deficiency in ecosystems and changes in the natural features of Iraq's environment—among them, the recession of bodies of water, desertification, losing green spaces, a growing salinity problem, and water scarcity. These problems were exacerbated by a decline in the quality of services and infrastructure, leading to sewage accumulation, waste accumulation, and the implementation of energy production projects and manufacturing industries that do not comply with Iraqi or international environmental standards.

These essentially nullified all of the environmental laws and regulations adopted over the past three decades, as well as the targets set by official bodies to protect the environment. In 1974, the Higher Association for the Human Environment was formed, following Iraq's participation in the 1972 Stockholm Conference on the Human Environment. This entity did its job until the Higher Council for the Human Environment was formed in 1975. This entity was renamed the Council for Environmental Protection. The Directorate General on Human Environment was established in the same year. In 1986, the Higher Council for Environmental Protection and Improvement was established under Act 76. The Law aimed to protect the environment, prevent pollution, develop public policies, prepare action plans, and put controls on environmental contaminants. It expressed opinions in Iraq's international relations on protecting and improving the environment, as established under Article 12 of the law establishing the Council for Environmental Protection and Improvement (which replaced the Directorate General for Human Environment). It also aimed to examine a range of disciplines, including those related to environmental pollution in Iraq, propose solutions for them, examine all environmental pollutants, and follow up on environmental safety and improvement. In 1997, the law cited above was repealed and replaced by Law 3 of 1997 on Protecting and Improving the Environment. It aimed to protect the environment, including territorial waters, from pollution, and reduce its effects on health, the environment, and natural resources. Environmental policies and plans were drafted in an attempt to ensure achievement of environmental sustainability to secure the rights of future generations.

Article 18 of the law stressed the need for a technical and economic feasibility study to be included in any project having an environmental impact. It also set forth penalties for those

who violate the law's provisions. Despite the early attention paid to the environment, there was a lack of attention given to the environmental dimension in economic and developmental decisions in Iraq. This was particularly true during the wars and under economic sanctions that weakened the role of such legislation in protecting and improving the environment. Consequently, Iraq lacked environmental security, and thus lacked proper infrastructure, specialized environmental staff, environmental planning and awareness, and environmentally friendly technology.

10.2.1.2 After 2003

After 2003, the view on environmental action changed from a sector-specific approach to a more comprehensive one. This is evidenced by a set of procedures, steps, and constitutional provisions, such as Article 114, paragraph 3 of the Iraqi Constitution of 2005 which mentioned "Drafting an environmental policy to ensure environmental protection from pollution and preserve its cleanliness in cooperation with regions and unaffiliated provinces." In addition, the Ministry of Environment was established—a serious step toward changing the prevalent traditional view based on separating the environmental dimension from economic and social dimensions in development interactions. Parliament ratified a law on protecting and improving the environment in 2009. It is considered one of the most effective laws in addressing environmental problems and developing strict controls to deal with them. A special provision in the law provided for establishing environmental police to hold offenders accountable. A set of goals was also adopted, including building a special database on the Iraqi environment that details pollution levels, causes, water and air protection, biodiversity, noise reduction, and raising environmental control levels.

The NDP 2010-2014 emphasizes the importance and necessity of integrating environmental, social, and economic dimensions in order to reach sustainable development in Iraq and of renouncing traditional planning methods focused only on economic considerations. The plan adopts a modern planning style, giving the environment the attention it deserved after three decades of clear neglect. In addition, the goals and projects in the plan are based on urban, economic, and social criteria. This makes environmental considerations an integral part of the decision-making process, to ensure harmony between strategic plan objectives and environmental goals.

10.2.2 Environmental Reality in Iraq

10.2.2.1 Air Pollution

Sources of air pollution vary in Iraq. The most important are:

1. Modes of transport and their increased numbers, low quality, and age
2. Industrial activity and cessation of emission treatment systems in most industries
3. Expanded manufacturing of bricks and cement, which relies on traditional means of production that do not use dust filters and consume large quantities of fuel

4. Archaic methods of waste disposal, such as burning household waste and dumping toxic hospital waste
5. Electric home supply through use of small generators void of efficiency standards.

The various sources have polluted the air in most Iraqi cities and suburbs, with a tendency toward increasing pollution levels as city size and polluting activities increase. These problems are exacerbated by poor environmental legislative deterrents for offenders and weak monitoring and surveillance systems. The leading types of air pollution are lead, floating particles, concentration of carbon dioxide, sulfur, and falling dust.

The effects of industrial air pollution were reduced after 2003 as a result of halting most industrial projects, particularly private sector projects. In contrast however, pollution caused by transport in cities grew worse after 2003 due because more vehicles were running on low-quality imported fuel. Data included in reports issued by the Central Bureau of Statistics and environmental reports issued by the Ministry of the Environment confirm that most air pollution sources crossed national borders. For example, lead concentration in Baghdad peaked at 12.1 micrograms/m³ as compared to the national standard of 1.5 micrograms/m³ in 2007. Particle concentration also exceeded the national average of 350 micrograms/m³ in Baghdad during all months in 2006. Some pollution concentrations are not measured because of lack of measuring instruments or, to the extent they exist, equipment malfunction. There is also a lack of some analysis equipment. These factors are likely to hinder environmental work in Iraq.

10.2.2.2 Water Pollution

Industrial and human activities contribute to polluting water—specifically rivers, lakes, and coastal waters—by dumping untreated contaminated water into them, seriously affecting quality. The main types of water pollutants in Iraq include: liquid industrial pollutants, organic pollutants, effluents from hospitals, sewage water, car washes, lubricants, oil pollutants, and drainage water.

Iraq suffered environmentally as a result of industrial development during the 1970s. Many industries lacked environmental requirements and standards at the time, whether from a location standpoint or in terms of liquid sewage treatment. Liquid sewage is characterized by high concentrations of pollutants, and is directly dumped into water and sewage networks. Weak environmental oversight of industrial activities has made matters worse, as has noncompliance with environmental requirements. There are 221 hospitals in Iraq, for example, 159 of which are public hospitals. Per the Ministry of Environment's data from the year 2007, 15 of the public hospitals dumped their waste in rivers, 34 dumped their waste in sewers, and 85 lack processing units altogether. As for the 72 private hospitals in Iraq, none of them have processing units, with the exception of one hospital in the Kirkuk province.

Sewage is characterized by high organic material concentrations which are collected by sewage systems and pumped to private stations for treatment within the acceptable standards before disposal in the water supply. Current stations are old, poorly

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maintained, and do not treat waste efficiently. Moreover, there is a lack of chemical treatment unit plants, as well as a lack of absorptive capacity in those stations as they receive more water than their capacity allows. When the Ministry of Environment followed 30 wastewater treatment plants, it found that 6 stations disposed of their waters in rivers, 5 disposed of it in dumpsters, and 11 were not functional. The remaining plants were functional. The situation is no different in garages and car washes. In Iraq, there are 443 garages, 167 of which use paint spraying systems; of those, 43 dispose of their liquid waste in sewers, 68 in septic ponds, 33 in adjacent land, and 15 in dumpsters.

10.2.2.3 Soil Pollution

The Iraqi environment is facing deterioration in the quality of its soil elements and degradation of their physical, chemical, and biological properties. This has caused productive land to become barren (desertification) or to become less productive. The causes are various: human activities such as clearing of trees for agricultural, fueling, or construction purposes; high soil salinity; an unscientific approach to the use of fertilizers and agricultural pesticides; over-irrigation; the removal of vegetation covers; unsustainable management of solid waste. All of these in have led to desertification, salinization, deforestation, lower crop yields, and threats to income among communities that rely on the soil.

10.2.2.4 Desertification

Arable land is deteriorating due to poor management, inadequate techniques, erroneous practices, and harsh natural conditions, including the high saline content of Iraqi soil, especially of alkaline saline (50 percent of arable land) and the four percent of arable land exhibiting high salinity soil, versus 26 percent of the non-saline soil. This problem were exacerbated after 1990 in the form of an increase of 3.1 percent in the amount of land affected by salinity, and the significant deterioration in vegetation cover, in addition to 0.6 percent increase in areas covered by shifting sand dunes. Some sources suggest that the reality is far worse than what the official figures show, but lack of accurate data and monitoring mechanisms make the true assessment of desertification in Iraq impossible at this time.

10.2.2.5 Solid Waste and Garbage

There are no specific data on solid waste management. However, the reality can be indicated by the following:

1. The lack of data on the quantities and characteristics of hazardous waste and inability to identify its sources; the fact that some provinces dispose of hazardous waste by dumping it with municipal waste
2. Waste disposed of in some economic activities by burning in illegal incinerators to reduce disposal costs—some dangerous and capable of causing serious environmental pollution by producing dioxins and furan toxic compounds that are harmful to public health
3. Lack of technical facilities dedicated to transport, storage, processing, burying, and burning hazardous waste in provinces. Indeed, according to reports from provinces,

hazardous waste has accumulated in Iraq in places not intended for storage or at sites where it remains for many years, waiting to find successful solutions for disposal. This creates significant health and environmental risks that lead to polluted air, soil, and water.

4. Poor management of solid waste due to lack of efficient staffing
5. Hospital incinerators located near residential communities, adversely affecting the environment and the population in the vicinity with toxic fume emissions (dioxin and furans which are cancerous) and other emissions (nitrogen oxide, sulfur, and carbon) that cause irritation and diseases of the eye and respiratory system
6. Dumping sites in Baghdad and provinces that have no environmental requirements, leaving as options arbitrarily throwing waste in illegal dumping sites and, in some cases, leaving waste outside legal dump sites because there is no regulatory system controlling transport or disposal of waste
7. Lack of specialized vehicles used in waste management as compared to those required by international standards, and the limited number of employees and their low skill level
8. Lack of supervision and means of control, along with the absence of records detailing the quantities of waste collected and transferred to temporary sites
9. The majority of butcher shops are without processing units for solid waste (furnaces) or liquid waste (treatment basins).

10.2.3 Challenges

The Iraqi environment has suffered and continues to experience numerous problems because of increasing population growth, unsustainable development growth in various sectors, and the lack of modern technology for treating pollutants that result from the different developing sectors. All of these factors have a negative impact on the environment. In addition, the consecutive Iraqi wars have exacerbated pollution problems, particularly in the air, water, and soil. These various factors, coupled with people's abuse of their natural surroundings, have translated into an unfriendly relationship with the environment.

Events in 2003 and beyond are still casting a shadow on the environment. Despite significant improvement in the management of work, projects, and services in multiple areas, many problems with negative environmental impacts persist and are causing damage and serious repercussions. The most pressing challenges are as follows.

1. The pollution of all environmental elements, especially in major cities, and the absence of comprehensive monitoring, control, and follow-up systems that can precisely determine the reality of environmental damage, including radioactive contamination
2. Continuing shortages in electric power supply from the national grid and the increasing use of small electric generators to meet domestic, commercial, and industrial

- needs, resulting in damage to the surrounding environment by burning large quantities of fuel, gasoline, gas oil, and sometimes black oil in inefficient, highly polluting internal combustion engines
3. The insufficiency of current environmental laws, regulations, and specifications, and the need to update them to match international advancements in this area, especially with respect to the issue of climate change
 4. The low level of human and material resources and the shortage of technical expertise at environmental institutions, particularly at the local level
 5. Lack of integration of the environmental dimension in development activities has created a dichotomy between environmental, economic, and social dimensions, distancing them from the objectives and mechanisms for sustainable development
 6. Iraq's weak and limited participation in international environmental activities
 7. The weak capabilities and lack of interest in environmental impact assessment studies, particularly with respect to strategic projects, and the lack of experience in this area
 8. Lack of attention to technological and environmentally friendly sources of clean energy
 9. Low environmental awareness among citizens in general, and investors in particular, who neglect environmental standards for private economic gains
 10. The use of heavy products such as black oil to run power plants and many other industrial activities, such as brick manufacturing, as well as use of stone ovens that use electric generators within residential and commercial neighborhoods
 11. The clear decline in green spaces due to neglect, lack of irrigation, and removal of vast numbers of trees for security reasons and for use as alternative fuels in other instances, which has led to an increase in areas with exposed soil, the main source of rising dust.

10.2.4 Vision

Protecting the environment and tackling sources of environmental pollution by planning a sound environmental management approach aimed at transforming the approach to dealing with natural resources to a more sustainable one that preserves biological diversity, raises environmental awareness, and promotes the principle of environmental citizenship to achieve the MDGs.

First Goal: Promoting Sustainable Development

Means of achieving the objective:

1. Adopting defined and environmentally sustainable investment projects that various ministries, local communities, federal and regional governments participate in selecting.
2. Instituting a special system for environmental impact assessment in Iraq to ensure that investment projects included in the development plan meet environmental requirements and specifications.
3. Reinforcing international cooperation through signing environmental agreements with neighboring countries to protect the environment, as well as joining international environmental conventions.

Second Goal: Monitoring the Environmental Reality

Means of achieving the objective:

1. Developing an integrated system for environmental monitoring, evaluation, and follow-up.
2. Monitoring the types and sources of pollution and measuring them against national and international standards.
3. Importing and developing devices for measuring pollutants for follow-up and analysis purposes.
4. Promulgating a set of environmental legislations that include laws, regulations, instructions and environmental standards aimed at protecting and improving the environment and preventing pollution so as to match global developments in this area.
5. Using environment-friendly technology in addressing sources that threaten the environment, especially solid waste.

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10.2.5 Objectives and Means of Achieving Them

The current development plan seeks to put this strategic vision for the environmental sector in Iraq into effect by adopting a set of objectives and means of achieving them.

Objective: Promoting Sustainable Development

Means of Achieving the Objectives

1. Adopting defined and environmentally sustainable investment projects that various ministries, local communities, federal and regional governments participate in selecting
2. Instituting a special system for environmental impact assessment in Iraq to ensure that investment projects included in the development plan meet environmental requirements and specifications
3. Reinforcing international cooperation through signing environmental agreements with neighboring countries to protect the environment, as well as joining international environmental conventions.

Objective: Monitoring the Environmental Reality

Means of Achieving the Objective

1. Developing an integrated system for environmental monitoring, evaluation and follow-up
2. Monitoring the types and sources of pollution and measuring them against national and international standards
3. Importing and developing devices for measuring pollutants for follow-up and analysis purposes
4. Promulgating a set of environmental legislations that include laws, regulations, instructions and environmental standards aimed at protecting and improving the environment and preventing pollution so as to match global developments in this area
5. Using environment-friendly technology in addressing sources that threaten the environment, especially solid waste.

Objective: Protecting Air Quality

Means of Achieving the Objectives

1. Reducing emissions from contaminated sources
2. Preventing indiscriminate burning
3. Using environmentally friendly technologies in existing and future activities
4. Controlling pollution emissions from major industrial activities and power plants
5. Implementing a program to use renewable energy, particularly generating solar power.

Objective: Protecting Water from Pollution

Means of Achieving the Objectives

1. Working to develop a vision for the rational use of water resources and protection of its quality
2. Expanding coverage of water networks and improving the quality of drinking water
3. Using modern technologies in sewage networks
4. Adopting appropriate environmental planning for lakes and beaches
5. Criminalizing water pollution.

Objective: Ending Desertification

Means of Achieving the Objectives

1. Expanding agricultural areas and preserving natural resources
2. Reducing urban expansion in cities and working to develop rural areas
3. Upgrading slums to become environmentally friendly settlements
4. Addressing the issue of soil salinity and preventing it from expanding
5. Building an information database for plant and animal species, establishing natural reserves and protecting endangered species.

Objective: Environmental Awareness

Means of Achieving the Objectives

1. Introducing "environment" as a subject in secondary and tertiary education, and strengthening the principle of environmental citizenship
2. Strengthening the role of civil society organizations in dealing with environmental problems and promoting environmental awareness among members of the community
3. Providing space for environmental advertising in audio and audio visual programming
4. Educational training programs for state employees on the importance of environmental sustainability as a human right.

Objective: Reinforcing Regional and International Cooperation

Means of Achieving the Objectives

1. Ensuring Iraq's participation in environmental conventions and protocols, both regional and international
2. Signing bilateral cooperation agreements between Iraq and different countries, as well as regional and international organizations

Objective: Developing and Building Environmental Capabilities

Means of Achieving the Objectives

1. Supporting environmental specializations in scientific departments at universities and institutes, while seeking to develop curricula in line with global developments
2. Setting up rehabilitation, development, and training programs for environmental personnel inside and outside Iraq, especially province employees.

Chapter Eleven

Private Sector



Private Sector

11.1 Status of the Private Sector before 2003

Iraq has not experienced stability in the distribution of economic activity between the private and public sectors since the middle of the last century. Since its establishment and until 1950, the private sector in Iraq had a privileged position among the state's priorities, benefiting from extensive state support and financial aid. Further, the private sector continued to contribute in its economic role under the umbrella of state care.

The decline in the state's financial resources, as compared to those of the private sector elite— major landowners, business owners, and property-owning investors—best explains why the private sector's role was so important up until the mid-20th century. However, this role started to decline after 1950 in favor of the public sector, following signature of an agreement between the government and the foreign oil companies working in Iraq at the time. Pursuant to those agreements, profits would be shared equally between them. The private sector's role declined further in 1964, when the state decided to nationalize private activity (banks). The economic arena was increasingly the territory of the public sector as the state expanded its intervention therein, fueled by growing oil revenues that helped the state adopt large-scale development programs. Accordingly, the state's role changed from the sponsor of private sector activities to the direct organizer of some of the country's economic activities, particularly infrastructure activities in which investment became a priority, in order to support the private sector.

This fact made most industrialists and businessmen in Iraq turn to imports instead of investing in industry and managing large projects. This was driven by the fact that those activities were low-risk, had a short trade cycle, and saw continuous demand.

In the early 1970s, particularly after the nationalization of oil in 1972, the public sector dominated all economic activities, and almost completely neutralized the private sector's role. Indeed, private sector activities, particularly commercial activities, declined when the Ministry of Trade assumed responsibility for the food and grain business and monopolized importation of those items. Accordingly, the volume of private sector commercial activity declined significantly until the first half of the 1980s, its share declining to 5.4 percent in fixed capital formation, 7.2 percent in agricultural activities, 2.9 percent in conversion industry activities, and no more than 0.4 percent in social development services. Home ownership remained the highest proportion of the private sector's gross capital formation at 79 percent (using fixed prices).

In the second half of the 1980s, the years during when Iraq was embroiled in the First Gulf war, there was a shift toward public policy welcoming the private sector, the result of the conditions created by the war at that time. The government announced an "open door policy as regards the private sector" and acted upon it by declaring its withdrawal from direct intervention in agriculture. The reason behind this move was the country's political and economic confusion; the government's failure to accomplish food security; and public investment's failure to achieve its goals in the agriculture sector.

Year	Public sector (percent)	Private sector (percent)
1974	67.0	33.0
1979	80.0	20.0
1980	83.0	17.0
1987	69.0	31.0
1990	54.0	46.0
1995	7.0	93.0
2002	75.0	25.0

The government culminated its stated policy by adopting a series of measures to encourage the private sector and return to the economic arena. An economic liberalization and privatization program was adopted in 1987—the Administrative and Economic Revolution. Its most prominent features included selling government farms and public sector factories; liberalizing the labor market from restrictive laws and regulations; establishing a stock market; providing mechanisms to compete in banking activities; encouraging Arab investments; providing incentives to private sector institutions; and instituting laws that supported and expanded the private sector's role in the economic arena. At the same time, the government reduced its support to public sector institutions, and shelved its policy of setting price ceilings on a large number of goods. These measures enhanced the private industrial sector's prestige and expanded its role in economic activities. This was clearly reflected in the share of total added value generated by the manufacturing sector, which exceeded 50 percent.

The door to private sector participation in other economic activities was also opened. This was particularly true for commercial activities following implementation of the policy for importation without external conversion. The private sector dove into commercial activities and essentially crowded the public sector out of this field after 1991, following imposition of international economic sanctions on Iraq. Indeed, commercial projects overtook the investment projects aimed at meeting the need for commodities that the state was prohibited from importing under the economic boycott, particularly commodities listed on provision cards.

The shift in roles between the public and private sectors was neither a planned program adopted by the government, nor a goal in an economic policy the government sought to translate into reality. Instead, it was forced on the state to mitigate the effects of the First and Second Gulf wars. It was further promoted by the legal framework that allowed the private sector to trade with the outside world during the economic sanctions period.

The distribution of roles between the public and private sectors did not resolve Iraq's economic crisis. Rather, it had negative effects and exacerbated economic problems. This was evidenced by the rapid increase in consumer prices and the high rates of inflation. These were compounded by the failures caused by the new import rules that were supposed to

have offered advantages to importers— failures that included exportation of the Iraqi currency to neighboring countries and its sale at low rates; the increase in inflation rates; orientation of investments towards the foreign trade sector; and speculation. These failures also contributed to the government's inability to develop the appropriate legislative, financial, and economic frameworks for privatization. The results worsened the crisis of the Iraqi economy. To deal with them, the government had to retreat from its policy through a set of procedures that included lowering prices; increasing subsidies to the agricultural sector; increasing the salaries of state officials; passing a law freezing the prices of some consumer goods; and establishing a low cap on the profits of public sector and mixed companies.

From this reality, we can deduce the most important features of the private sector for the period before 2003, namely that it was dominated by individual work, and small facilities in terms of organization, investment, or production. Investments tended to be geared toward activities with guaranteed profit by searching for projects in which the capital repayment period was short. There was also dependency on government support, making the private sector weak in the face of competition from imported goods.

In light of the above, we conclude that during this period, the private did not have a realistic chance to play a prominent role in advancing economic growth rates. The reason is that, for 40 years, the public sector was subjected to violent shocks, policy fluctuations, and discouraging laws that promoted ownership fragmentation, and kept the private sector away from some economic activities. In addition, the private sector became more like a contractor for the public sector. Thus, its activities became linked to those of the public sector, and the latter kept the private sector's role marginal in the country's overall economic performance.

This was the situation of the Iraqi private sector before 2003, despite the fact that most development plans included the need to encourage the private sector. In reality, however, that was not done or made part of approved plans and programs. This, in turn, caused the private sector's role to swing between neutral and effective. Further, its total and sector contributions fluctuated and were affected by the country's economic and political circumstances during that period.

11.2 Status of the Private Sector after 2003

The Iraqi private sector faced new setbacks during the transition period after 2003. These were caused by the stoppage of private industrial projects because of destruction, high production costs, or lack of local demand for the project's products, as local markets were flooded with imported goods. The setbacks were exacerbated by the lack of security and the targeting of capitalists' families, which resulted in regulators and capitalists fleeing to neighboring countries in search of stability, safety, and a home for their funds. Indeed, Iraqi investments in neighboring countries grew significantly. Further, Iraqi investors were among the top non-national investors in those countries. This explains the very limited role of the private sector in the country's investment activities. The International Monetary Fund

estimated total private investments (Iraqi and foreign) in the Iraqi economy at US\$1,080 billion or 4.2 percent of gross domestic product in 2004. Its absolute value increased in 2005 to reach \$1,161 billion or 3.5 percent of gross domestic product.

Absence of an appropriate investment climate, political instability, the Iraqi investor's weak financial position, and the limited amounts of money available to the banking system may be some of the reasons behind the private sector's limited role and significance in financing development in Iraq.

In order for this sector to take an active role in the development process and reconstruction, the state began defining the foundations of its development strategy for the three years 2007–2010. It made revitalization of the private sector one of the main pillars of its three-pillar strategy. It did so by maximizing its revenues and savings, thereby making it an active sector in economic activity, a generator of employment opportunities, an enhancer of sustainable growth, and a participant in financing development. This approach was in execution of Article 25 of the Iraqi Constitution of 2005, which requires the state to reform the Iraqi economy in accordance with economic principles and in a manner that ensures investment of all of its resources, diversifies its sources, and encourages and develops the private sector.

The strategy adopted a set of means to achieve these goals. They included economic reform programs, privatization and restructuring of state-owned enterprises and banks, encouragement to merge existing investment projects, and continuation of the process of becoming a World Trade Organization member. They also included the specification of methods for investment partnerships between the private and public sectors, particularly the BOT (build, operate, transfer ownership), BOO (build, own, operate), and BOOT (build, own, operate, transfer) methods.

Despite the visions and goals of the strategy, the reality indicates that none of these goals was accomplished during the three years. That may be because the security and political situation prevented growth, development and investment; or the lack of a defined role for the private sector because of the blurry economic policy adopted; the fluctuations in development orientations; or the lack of specification as to the approach to managing the Iraqi economy. The 2010–2014 development plan was adopted to remove this uncertainty and shed light on the features of the economic policies to be adopted by Iraq for the next five years. The plan also defines the private sector's role in development and implementation of plan objectives, speaking specifically to the private sector's role in helping fund projects in the estimated amount of 46.2 percent over the plan years. This participation would strengthen the private sector's sustainable interactive partnership and competitive role. It would also ensure that the Iraqi economy transitions to a market economy at the lowest economic and social cost.

Redistributing roles in economic activities in favor of the private sector over the life of the plan requires a set of procedures, including working to streamline and simplify government procedures at the business level in Iraq; reforming the commercial and regulatory framework; and developing a transparent and simplified institutional and legal framework

to encourage the private sector business. There is also the need to lay the foundations for rehabilitation of state-owned facilities in a manner that is coherent, clear, transparent, and comprehensive, and that encourages privatization and transfer to the private sector. Government banks must also be restructured to promote integration and privatization, as well as expansion of lending avenues.

11.3 Challenges Facing Private Sector Development

1. Absence of a suitable investment environment that encourages mobilization of the local and foreign private sector's potential and capabilities in support the national economy
2. Lack of clarity on the private sector's role in effective development, along with absence of a clearly defined vision for this role once the economy is restructured and its production base is built
3. Overly complex government procedures on the business front that have pushed businessmen and investors out of the Iraqi arena
4. Shortage of laws and regulations that activate the private sector's role in economic activities, limiting the possibility of maximizing this role and eroding its competitiveness
5. Shortage of the specialized banking system's credit capabilities has limited the possibilities for lending and borrowing by the private sector to finance its investment objectives, and limited the effectiveness of specialized banks
6. The Iraqi stock market lags behind and is far removed from developed financial rules and principles adopted internationally, which has undermined the Iraqi investor's financial strength
7. Increases in interest rates are considered a monetary constraint on the credit offered to the private sector by government banks for investment purposes
8. Reliance on state protection and support systems as opposed to competition has caused the Iraqi private sector to disregard efficiency and competitiveness standards in its investment decision-making process
9. Economic reform programs lack the necessary economic, financial, legal, and administrative measures necessary to restructure public institutions. This has limited the possibility of commencing privatization operations or merger of public or private institutions. If they do commence, these operations will be far removed from proper economic, accounting, financial, and legal standards because these requirements are absent
10. Inadequate infrastructure and basic services for the private sector have led to the deterioration of the private sector's competitive position locally, regionally, and internationally
11. The private sector's inadequate knowledge, information, and technology base; its inability to absorb or keep up with rapid changes in the global market—factors essential to competition and access to foreign markets.

11.4 Policies

1. An economic policy that has a clear vision and goals, is founded on building the economy by defining, describing, and distributing roles between the private and public sector, and does so in a manner that ensures gradual transition to a market economy at the lowest cost. The implications of this policy can be seen in the current plan:
2. A tax policy that enhances the private sector's role in economic activities and supports its economic and financial roles through tax incentives, rates, and the scope of deductions
3. An investment policy that makes infrastructure and basic services a strategic goal (electricity, water, fuel), supports the effectiveness of private investment, and enhances access to foreign investments in the economic arena. The current plan clearly embodies this policy.
4. A national employment policy whose objectives are defined based on a vision of the private sector as a generator of employment opportunities and a supporter of sustainable growth
5. A fiscal policy supportive of the principle of competition for private sector activities (the private industry sector), particularly as regards social security systems, as well as labor rights and wages in the private sector
6. An enhanced production policy aimed at diversifying the production infrastructure through the private sector
7. An economically efficient credit policy that seeks to grant concessionary credit to the private sector at attractive interest rates to support productivity goals (agriculture, industry, and tourism)
8. Development of the Iraqi stock market so it embodies a proper and technologically advanced foundation based on international standards for financial service provision; enhances the prestige of Iraqi investors; and secures their international financial dealings in a modern dynamic manner.

11.5 Vision

An interactive, participatory, and competitive private sector that supports sustainable growth.

11.6 Objectives and Means of Achieving Them

Objective: Enhancing the Private Sector's Developmental Role

Means of Achieving the Objective

1. Increasing its percentage contribution in gross domestic product generation and capital formation by mobilizing its investments in agriculture, industry, and tourism
2. Increasing its percentage contribution in job creation by expanding the scope of the organized private sector
3. As private sector savings are a key source for funding plan projects, attempt to keep native capital in Iraq and bring back that which is currently overseas
4. Making the private sector a source for diversification of commodity supply using the method of private integrated industrial complexes

Objective: Partnership between the Private and Public Sectors

Means of Achieving the Objective

1. Determining the forms of partnership and choosing the most appropriate, possibly including collaborative partnerships and contractual partnerships (BOOT, BOO, BOT)
2. Legislating and activating a privatization law
3. Establishing support for technological projects and expanding their adoption.

Objective: Promoting an Environment that Encourages Investment

Means of Achieving the Objective

1. Adopting flexible policies that respond to local and international economic changes
2. Expanding establishment of economically feasible shareholding companies
3. Completing the law and regulation system that supports the private sector and the market economy
4. Developing banking systems, capital markets, and lending plans
5. Updating economic regulations that support a market economy while aiming to achieve the plan's social objectives
6. Relying on transparency as the basic premise for building the investment relationship between the private sector and the state
7. Developing the government institutions' capabilities to contribute to private sector development.

Objective: Privatizing of Public Sector Projects

Means of Achieving the Objective

1. Developing the Iraqi stock market from an administrative, technical, and technological perspective
2. Instituting a flexible and transparent privatization law that protects state and worker rights from a financial, economic, and social perspective
3. Offering stocks for public subscription as well as adopting the Golden Arrow method for the state in the early stages
4. Providing workers with a portion of the shares of the companies sold.

Private Sector

Objective: Developing the Banking Systems and Supporting Financial Institutions

Means of Achieving the Objective

1. Liberating interest rates and exchange rates and reducing restrictions on the flow of capital
2. Developing financial risk management technologies and systems to mitigate the impacts of said financial risk
3. Revitalizing private banks to promote the effectiveness of the private sector's financial transactions
4. Strengthening banking systems' technical and guidance roles to provide support and financial advice to private sector investors

Objective: Developing the Private Sector's Competitive and Export Capabilities

Means of Achieving the Objective

1. Examining potential export markets and creating a database thereof
2. Completing the export infrastructure consisting of cold storage, cargo shipping, and port services
3. Focusing on quality, packaging, and marketing, as well as encouraging the establishment of private marketing companies
4. Orchestrating extensive marketing campaigns in regional and international markets through exhibits, business meetings, as well as in Iraqi embassies and business attachés abroad
5. Developing business partnerships with the various economic blocs to enhance trade and access to those markets

Objective: Strengthening the Private Sector's Role in Regional Development

Means of Achieving the Objective

1. Distributing roles between the state and province on the one hand, and the private sector on the other hand
2. Promoting decentralization in the management of development facilities, and involving the private sector in local and regional plan and program preparation
3. Activating the private sector's role in developing slow-growing provinces to generate more effective growth using incentives and inducements
4. Encouraging the private sector to participate in province development plans, particularly those stated in the plan, as well as good investment opportunities such as those indicated in the plan.

Chapter Twelve

Good Governance



Good governance and proper regulation are basic prerequisites for progress in all fields, including economic progress, social welfare, and the achievement of justice in the population. Making sound decisions is one of the important pillars in the development process. The governance framework varies based on time, place, and subject; it is a flexible concept. However, it must be formulated around eight specific elements: the rule of law, participation, transparency, responsiveness, collective opinion, justice, inclusiveness, effectiveness, efficiency, and accountability.

Based on the above, good governance expresses a broad concept that encompasses the mechanisms, processes, relationships, and institutions through which citizens express their interests, exercise their rights and duties, and resolve their differences. In light of the broad concept encompassed in this term, the national development plan's objectives cannot be achieved without developing the country's capabilities in all its aspects, levels, and geographic locations. The legitimacy of the government, its powers, and capabilities is embodied in its work with the people and for the people. That is the best approach to achieving plan goals. Accordingly, developing Iraq's capabilities and enabling it to perform its core functions and provide services that meet society's needs requires modernization of the public sector and guiding it towards decentralization, while at the same time, reducing corruption.

12.1 Modernizing the Public Sector

Diversifying the national economy and supporting the private sector are considered crucial to growth and building future models. It cannot be achieved without reforming and modernizing the public sector. Current government structures are characterized by excessive centralization; functional overlaps; weak inter-ministry coordination; lack of developed and efficient data systems and analyses; wide expansion in civil service; lack of adequate skills; weak human capital; inadequate financial management and monitoring capabilities; and the absence of proper mechanisms ensuring citizen participation in the decision-making process. Therefore, the reform process requires modernization of the functional structure of the country's institutions, organization of their relationships, and training of its staff to ensure efficient and professional participation by the entire population.

Public sector reform requires building more capacity to create an environment conducive to successful management and responsiveness to crises. This can be achieved by empowering the private sector rather than leaving its potential untapped in the shadows of public sector dominance. It is worth noting that development of the civil service system is crucial if the country decides to improve its capabilities; implement a system of accountability and responsiveness to variables; and maintain its commitment to the Millennium Development Goals. As citizens expect the state to provide opportunities and services, reform must be a top priority. That is the key to ensuring change at the various management levels.

12.2 Orientation towards Decentralization and Local Government

This trend is headed toward more decentralization, on both the political and administrative fronts. This constitutes a profound shift in the government decision-making process. Decentralization can foster greater accountability and responsiveness in service provision and can strengthen citizens' ability to participate in the decision-making process and claim their rights. There is a marked weakness in institutional structures and human capabilities at the local level with respect to planning and implementation. Thus, it is necessary to empower and strengthen them so they can achieve the objective of promoting decentralized management and planning. Giving local governments a greater role in managing and planning does not mean that their thinking should be on the local level (province or province). Rather, they should integrate their plans and strategies with those of nearby provinces and the country as a whole.

12.3 Combating Corruption

Financial and administrative corruption is among the most important challenges to good governance in Iraq. Anticorruption institutions and newly formed agencies (Integrity Commission, Office of Financial Control, and general inspectors in the ministries) represent the active and critical organizations combating corruption. They can also contribute to making public administration more effective by limiting corrupt activities, improving resource management, and pursuing perpetrators. It is crucial to build up the human capital in these organizations; have strong community-based agreements to combat corruption at the individual and societal levels; and promote integrity, transparency, and accountability. All of these factors enhance institutions' ability to do business with confidence and continuity.

12.4 The Plan's Priorities for Improving the State's Capabilities

In light of the above, the priorities of the development plan for improving the country's capabilities at the national and local levels require adoption of the following elements:

12.4.1 Rule of Law

Law is a common denominator that affects society's daily life with respect to preparing and implementing the plan. Everyone must abide by it. In order for ministries, independent departments, and provinces to be committed to implementing the plan, within the time and costs specified for the projects, legislative bodies should promulgate laws pertaining to that implementation. In addition, clear and specific instructions and contexts must be provided. This requires:

1. Review of the financial administrative law; as well as reevaluation of the tasks contained therein and distributed among the Ministry of Finance and Planning and the

beneficiary ministries. This will increase implementation efficiency and is consistent with the ministries' specialties.

2. Identification and separation of the authorities and procedures required of provinces and the country's ministries. This will allow them to be accurate and clear with respect to determining the responsibility for implementation. This will also remove any duplication and conflict that may occur.
3. Distribution of authorities among leading entities and decision makers in the ministries and provinces, as opposed to limiting them to ministers, deputies, and governors.
4. Taking the necessary steps in earnest to create an investment climate for the local and foreign private sector, and reviewing all the laws and regulations that hinder such investment, without affecting the government's role in programming and monitoring the gradual transition to a market economy, competition, and freedom of prices.
5. Studying the issue of decentralized disbursements, using treasuries in the provinces that are supplied with staff trained in this task.
6. Reviewing procurement and processing procedures; rewriting them to help speed up implementation; identifying the points of control based on the cycles of these procedures; and removing any duplication.
7. Taking steps to craft a prudent fiscal policy that creates complete balance between resources and uses of them; achieving the required level of development in accordance with this plan; and working to increase financial resources.
8. Crafting a prudent monetary policy that balances the functions of this policy in addressing the issues of inflation, interest rates, and development plan needs in terms of credit to implement the projects.

12.4.2 Building Partnerships

The plan will attempt to have all society members and institutions participate in the development process. The most important participants in this domain are likely to be the following:

1. Women: The plan seeks active participation by women in the areas of development plan formulation and decision making.
2. Youth: Giving youth leadership positions in the country and in society so they can express their views. This requires laws and regulations.
3. Civil society organizations: First, they must be organized and existing ones reconsidered. Second, their identity must be verified (do they really exist, or are they fictional?). Thereafter, they must be provided with the opportunity to effectively participate in planning, monitoring, and follow-up activities.
4. Local authorities: The role of local authorities (province councils) must be activated along with that of civil society organizations to ensure participation by all parties involved

in the development process via freedom of expression and active participation.

12.4.3 Transparency

In the context of the planning process, transparency means disclosure and publicity. Disclosing activities should encompass officials, companies and institutions, each within the purview of the roles and duties assigned to them, and to the extent relevant to the plan. Financial, accounting, and statistical data are supposed to be provided for each project included in the plan. This applies to the ministry as well as agencies unaffiliated with a ministry, a region, or a province.

12.4.4 Responsiveness

Within the context of the plan, responsiveness means the response proffered by executive institutions to the concepts, perspectives, and projects of the plan. It also means the plan's response to society's needs and aspirations.

12.4.5 Collective Opinion

In all societies, there are many and varied views and wishes, and they may be contradictory. The plan must, both during the preparation and implementation phases, use the consensus or majority vote approach. In addition, this approach must be publicly disclosed.

12.4.6 Justice and Inclusiveness

The goals of the National Development Plan include improving the quality of life for all segments of society and thus, there must be equitable opportunities for them to participate in the development process. Vulnerable groups should be given special priority. Doing so requires:

1. Empowering civil society organizations to express their opinions and participate in selecting and implementing the projects that would improve citizens' quality of life
2. Instituting laws that emphasize collective views, inclusiveness in decision making, and inclusiveness with respect to deriving benefiting from said decisions

12.4.7 Effectiveness and Efficiency

The plan's effectiveness will be manifest in results that serve the general community at the least social cost, both tangible and intangible. Its efficiency means sustainable resources and preserving the benefits of future generations of natural and environmental resources. In this regard, there should be elements of sustainability in choosing plan projects. For example, there must be a trade-off between the type of technology and the community's or region's needs (the balance between the intensity of using work and the intensity of using capital). This requires:

1. Improving and building institutional capabilities, which requires the presence of efficient elements, identifying powers and responsibilities, and ensuring participation of all responsible parties in the decision-making process

2. Paying attention to human development as one of the pillars in the economic development process, requiring programs for the advancement of education, training and health, as well as for the provision of other social services
3. Organizing the executive administrative structures within the provinces to increase their efficiency in implementing their tasks
4. Developing the capabilities required to prepare technical and economical feasibility studies, and evaluating the environmental impacts on the project and regional levels
2. Financial records and statements that are prepared and audited in accordance with the principle of significant transparency and certainty
3. Commitment by the ministries and other agencies to prepare and submit comprehensive feasibility studies about projects to be implemented
4. Working to approve the annual budget prior to commencement of the fiscal year so executive agencies can oversee implementation at an early stage of the fiscal year

12.4.8 Accountability

Accountability is an important aspect of good governance. In the case of joint stock companies for example, they must disclose their budgets or report financial performance to the company's general assembly. This practice should be followed by all segments of society as well as plan implementation partners, including the government and private agencies. Accountability should be supported by the following:

1. A package of regulations framing the principle of accountability and acting as a reference for all development partners
5. Reviewing the financial procedures related to making disbursements and receiving payments at specific times, and in accordance with the priorities of the implementation process
6. Preparing plans to combat both types of corruption (administrative and financial) at institutions. This requires development of laws and regulations, as well as their implementation in full.
7. Reviewing the procurement and processing procedures and rewriting them in a form to help speed up implementation; in addition, identifying control authorities at each cycle of the procedure and eliminating any duplication.



12.5 Monitoring Execution of Plan Projects and the Extent to Which Objectives are Achieved

Preparing the plan in accordance with a sound methodology and realistic data is a prerequisite for its success. However, it will remain incomplete unless supplemented by clear and specific mechanisms for implementing, reviewing, and evaluating the extent to which these objectives are achieved. It will also hinge on distribution of roles between the state and regional governments, the private sector, and civil society organizations, each within their own purview. Accordingly, and to ensure proper implementation of the plan and receipt of annually updated feedback about the processes, the plan document offers a series of procedures that can be summarized as follows:

12.5.1 Monitoring

With regard to office monitoring, there is a need to issue monthly follow-up reports by sector, ministry, non-ministerial agency, and province. These reports would show financial disbursements and material implementation of the plan. They would also highlight any deviations or obstacles and propose solutions to overcome them at an early stage.

At this time, monitoring capability is below the required level. It must be strengthened by doing the following:

1. Increasing the sample of projects monitored so it is no less than 10 percent of the total annual projects
2. Ensuring these projects are representative of all financial sectors and activities and are distributed throughout all provinces
3. During the monitoring process, focusing on projects with strategic and vital importance, those with significant development implications, and those that add new technologies. This should be done both during the implementation and operating phases.
4. The monitoring process should encompass all legal and contractual aspects of the projects, disbursement rates, material implementation rates, implementation quality, and degree of compliance with applicable laws and instructions.
5. Enhancing participation by planning monitoring units within the provinces particularly in the case of projects of a local nature
6. Revamping the Central Monitoring Directorate within the MoP so it can carry out the office and field monitoring procedures, and supporting specialized staff in their monitoring duties throughout the ministry and its planning units
7. Completing automation of monitoring systems throughout the MoP, as well as other ministries, non-ministerial agencies, and provinces, and connecting those systems to a single intranet network with access features for each entity based on its functions and area of specialization, to render office monitoring of projects fast and flexible

8. Holding quarterly and annual meetings for planning and monitoring supervisors, to include all ministries, non-ministerial agencies, and provinces and aim to resolve problems and difficulties in project implementation. They would also be used to propose amendments to the systems and instructions associated with monitoring implementation of the investment budget projects.
9. Preparing monthly, semi-annual and annual reports detailing the results ascertained while monitoring implementation of plan projects. These reports would be submitted to the secretariat of the Council of Ministers, the Economic Commission, and the House of Representatives to apprise them of the progress made on plan projects and provide them with guidance through recommendations and proposals.
10. Reevaluating the allocation priorities and levels for projects listed in the five-year plan's project schedule and slated for implementation during the following year. This reevaluation would be conducted in light of implementation results attained during the previous year; changes in the financial situation; the possibility of adding or deleting new projects per the updated financial situation; and the realities of the implementation capabilities available to the different agencies.
11. Continuing to reevaluate and modify the instructions and authorities associated with annual implementation of the investment budget. Further, gradually conferring more authority to the relevant ministries and provinces.

12.5.2 Evaluating Achievement of Plan Objectives

Annual monitoring of implementation of the projects set forth in the plan would be performed based on the rate of financial and material disbursements. The quality of implementation would also be verified to ascertain whether or not it is sufficient to confirm achievement of the plan objectives. Accordingly, it is necessary to:

1. Develop an integrated, automated system to monitor and assess the extent to which objectives are being fulfilled in all economic, social, urban, environmental, and administrative fields. This system would depend on specific, accurate, and measurable indicators that are internationally approved.
2. Link the system via an intranet network to ministries, non-ministerial agencies, and provinces to ensure ease of use and operation. These entities would be able to enter the system and operate it, each within the scope of its own responsibilities and powers.
3. Establish a specialized division to monitor achievement of five-year plan objectives within the Public Investment Department at the MoP. This division would be responsible for managing, operating, and modernizing the proposed system.
4. Hold an annual conference sponsored by MoP to present and evaluate the extent to which plan objectives have been achieved. The MoP would provide background documents for the conference, indicating the extent of

- achievement. It would also detail any deviations from the objectives and proposals to remedy them. In addition, ministries, non-ministerial agencies, and provinces would present reports on progress in achieving plan objectives within their sectors, using the indicators included in the proposed system.
5. Adopt the results of the annual conference, which would be attended by representatives from the higher authorities, the House of Representatives, and the media, as well as civil society organizations and academicians. These results would be adopted as a principle document in the review process and would be used to update plan goals and means of achieving them. It would be subsequently used as a reference.
 6. Launch a major information campaign to mobilize and define the plan, its objectives, and the means of achieving these objectives. The campaign would also define the roles required by all partners, including public and private sectors, academicians, civil society, the general public, international partners, and donors.
 7. About one half of the investments required to achieve the objectives is expected to come from the local and foreign private sector. Thus, the partnership between the public and private sectors and the bonds governing this partnership are very necessary to achieving plan objectives. The country should ensure the appropriate investment climate, the basic fundamental structures that encourage local and foreign investors to participate in the fields and activities set by the plan.
 8. To the extent there are increases in state budgets, or savings achieved there, during plan years, priority must be given to the plan's investment projects. This would help achieve plan objectives; compensate for any variations in the anticipated participation by domestic and foreign investments; and strengthen the coordination and cooperation between the Ministry of Finance and the MoP in this area.
 9. In 2012, review and revise the plan, its priorities, its objectives, and the policies to achieve these objectives, as needed based on changes in the reality of the Iraqi economy, the available financial and human resources, and the extent to which objectives were accomplished during the first two years of plan implementation.



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