IRAQ LIVING CONDITIONS SURVEY 2004

Volume II: Analytical Report

Ministry of Planning and Development Cooperation

العراق

UNDP

Ministry of Planning and
Development Cooperation

Iraq Living Conditions Survey 2004

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Contents

Abbreviations and Acronyms

BMI	Body Mass Index
COSIT	Central Organisation for Statistics and Information Technology, Iraq
CPA	Coalition Provisional Authority
FAO	Food and Agriculture Organisation of the United Nations
FBS	Father's Brother's Son
GDP	Gross Domestic Product
GFR	General Fertility Rate
GNI	Gross National Income
HDR	Human Development Report
ILCS	Iraq Living Conditions Survey
ILO	International Labour Organisation
MDG	Millenium Development Goals
MICS	Multiple Indicator Cluster Survey
MMR	Maternal Mortality Rate
MOT	Ministry of Trade
MTHS	Multiple Topic Household Survey (Jordan)
NGO	Non-Governmental Organisation
NT	Neonatal Tetanus
OECD	Organisation for Economic Co-operation and Development
ORS	Oral Rehydration Salt
PDS	Public Distribution System
PPP	Purchasing Power Parity
PSU	Primary Sampling Unit

Foreword

Living Conditions Surveys may be considered one of the most important tools to assess the development process in a country. The fruits of development are reflected on the fulfilment of the individual's various needs and the provision of basic services in health, education, housing, and public utilities, in addition to employment opportunities, and other services, all of which are measured in a Living Conditions Survey.

After a 10-year period during which the living conditions of the Iraqi individuals and families could not be statistically monitored, the Central Organization for Statistics and Information Technology (COSIT), under the Ministry of Planning and Development Cooperation, and in cooperation with the United Nations Development Programme and Fafo-AIS has undertaken a large survey of the living conditions in Iraq in the second half of 2004. The aim of the survey was to collect detailed and comprehensive data to build an integrated information framework on the living conditions in Iraq during that period. Despite the difficult security situation in the country, COSIT was determined to implement the survey and to that effect launched a sizeable field operation and automated its administrative and office work.

One of the important additionalities of the survey is the development of the national capacities of COSIT at both the central and governorate levels in the implementation of multi-indicator surveys. Knowledge was also gained in the application of modern techniques for data collection and processing as well as the use of global positioning systems to map the location of chosen survey samples. This, which was done for the very first time in this survey, will lead the way towards handling data with more advanced geographical information systems. COSIT's exposure to all these modern techniques made possible the processing and production of results in a record time.

In presenting the final results of the Living Conditions Survey in Iraq in three reports: the Tabulation Report, the Analytical Report, and the Socio-economic Atlas, which for the first time covers all the governorates of the country, including the Kurdish region, the Ministry of Planning and Development Cooperation wishes to express its appreciation for the efforts made by all the partners who participated in this survey, namely the United Nations Development Programme, Fafo–AIS, and the Central Organization for Statistics and Information Technology.

We hope that governmental and non-governmental organizations, academia, research institutions and development partners will make use of the findings of the survey for planning, policy development and prioritizing purposes, as much as we hope that this Ministry will avail itself of the material and technical resources to continue to measure and provide quantitative indicators on the living conditions in Iraq in the future.

Dr. Mehdi Al-Hafidh
Minister of Planning and Development Cooperation

April 2005

Preface

The main statistical tables resulting from the Living Conditions Survey in Iraq in 2004 are presented in this report. The United Nations Development Programme (UNDP) commissioned the study with a generous grant from the Kingdom of Norway. It consists of a sample survey portraying various dimensions of the living conditions of the households of the people of Iraq as of April-May 2004. The sample covers all the 18 governorates of the country.

UNDP, the Fafo Institute for Applied International Studies (Fafo) and the Central Organization for Statistics and Information Technology (COSIT) under the Ministry of Planning and Development Cooperation in Iraq cooperated during all phases of the work. While Fafo was responsible for the initial design of the survey instruments, COSIT implemented the survey in the field with assistance and training by Fafo. Fafo has compiled the present report in close collabouration with COSIT. This report is issued by the Ministry of Planning and Development Cooperation of Iraq as part of its official and national series of statistics.

COSIT's team was headed by Mehdi al-Alak, Chairman, assisted by Louay H. Rashid and Najlaa Ali Morad. In the Governorate of Erbil the field work was headed by Saheb Kahraman, assisted by Saman Abdul-Razak, and in the Governorate of Sulaimaniya the field work was headed by Mahmood Othman, assisted by Sherko Jaawdet Moostafa. In total, COSIT deployed more than 100 person-year of work for the study, and the work in the field progressed smoothly in spite of the difficult conditions in Iraq.

The Central Organization for Statistics and Information Technology wishes to thank the UNDP Iraq office headed by Boualem Aktouf, Mireia Villar-Forner, Alia Al-Dalli, Khalid M. Khalid, Rana Kossaifi and Ali Sakkal for their good support and encouragement. We thank the UNDP headquarters in New York and the Norwegian Government for their timely initiative to launch and finance the project.

COSIT also wishes to thank the Fafo team headed by Deputy Director Jon Pedersen, and assisted by Kristin Dalen, Ane Mannsaker Roald, Paal Sletten, Guri Tyldum, Anne Hatloy, Laurie Blome Jacobsen, Anne Huser, Trude Arnesen, Anniken Huitfeldt and Geir Øvensen. COSIT also commends Christian Ruge, Mark Taylor, Morten Bøas, Gro Hasselknippe and Aage Tiltnes for their valuable inputs. Akram Atallah, Hani Eldadi and Yusef al-Madi had a pivotal role in fielding the study as the Fafo representatives in COSIT during the total duration of the fieldwork.

Last but not least, we wish to thank the people of Iraq for their responsiveness and kind cooperation. The extremely high response rate on a long and taxing questionnaire is testimony to the interest the people had in telling the real story about their current situation and in contributing to building a better future. It is our hope that these indicators will inspire donors and planners to meet the expectations of the Iraqi people.

Baghdad, April 2005

Mehdi Al-Alak
Chairman
COSIT

Staffan de Mistura
Resident Representative
UNDP Iraq

Introduction

This book reports on the results of the Iraq Living Conditions Survey (ILCS) survey and analyses the living conditions in Iraq as they were approximately one year after the fall of the previous regime. This representative survey of 21,668 households is the first in recent years to cover all governorates in Iraq. The larger part of the survey took place in April and May 2004, while fieldwork in the governorates of Erbil and Dahouk was carried out in August 2004.

A collabouration between the Central Organization for Statistics and Information Technology (COSIT), Iraq, and the Norwegian research institute, Fafo, the survey was financed and supported by the UN Development Programme (UNDP) with funds from the Government of Norway.

The present publication is a companion volume to two other publications: the ILCS "Tabulation Report", which presents the main results of the survey in tabular form; and the "Socio-economic Atlas of Iraq," which depicts the situation in Iraq using maps and diagrams.

The Living Conditions Survey

The living conditions survey, as employed in Iraq, is a tool for rapidly providing household-based statistical data for a country or a region, following standards accepted by the international community for statistical reporting. The survey is thus designed to provide, for example, data on the indicators developed to monitor and track progress towards achieving the Millennium Development Goals, to the extent that this can be done through a household survey. Whereas most other rapid survey tools place a premium on timeliness at the expense of depth, this survey attempts to fuse rapidity with comprehensive coverage of the targeted indicators.

The structure and contents of the survey derive from the general concept of living conditions, as understood in the context of the "Nordic tradition" (NOU 1993; Ringen 1997). In this tradition, living conditions are perceived as being the sum of actions undertaken in a set of diverse arenas, such as the family arena or the labour market, in which actors marshal their resources and act according to their goals. The outcomes of these acts in turn produce the living conditions, which are ultimately seen as both the outcomes of and resources for action.

The survey has thus been structured to cover as wide a range of resources and actions as possible, including issues pertaining to marriage and the family, the labour market, and wealth generation.

The questionnaires

The questionnaires reflect the nature of the survey. Two questionnaires were used: one general questionnaire for each household, answered by the household head or a member of the household with knowledge of all members was the respondent; and one targeted questionnaire used to interview women of the household aged between 15 and 54 years. The first questionnaire dealt with housing and infrastructure, household economy, basic demography, and the education, health, and labour force characteristics of the household members; the second focused on the women's reproductive history and children's health.

Three versions of the questionnaires—one Arabic and two Kurdish—were used in the field. The Arabic and English versions of questionnaires can be found at the Fafo website (http://www.fafo.no/ILCS/). Most of the survey questions were previously used in other Fafo surveys carried out in the Middle East, and were therefore well tested. Although the questionnaires were developed in English, they were translated twice—once into Arabic or Kurdish, then back again into English—in order to verify the translations and ensure that all members of the survey team had a common understanding.

Compared to many surveys, the questionnaires were quite long, with a median interviewing time of 83 minutes. Fifty percent of the interviews lasted between 60 and 105 minutes.

The sample

The sample of the survey is a comparatively standard two-stage cluster design. In the 15 southern governorates, the survey is based on the 1997 census of Iraq. For the three governorates of Erbil, Dahouk, and Sulaimaniya, where the 1997 census was not conducted, the sampling frames are based on lists of localities compiled by the local statistical offices. Regardless of the frame used, the first stage of the sample was selected with probability proportionate to the number of households in each unit (PPS). Each selected Primary Sampling Unit (PSU) was mapped,

all households listed, and 10 households randomly selected in each PSU.

Due to population growth and migration, it is likely that the 1997 census does not accurately represent the population distribution of Iraq in 2004. The relisting of PSUs corrects this to some extent, but parts of the population are most likely not covered, in particular, recently displaced people who have moved to areas not included in the census. PSUs classified in the census as nomadic (0.09 percent of the population) were omitted from the frame. Although it is difficult to verify, the total omission due to frame imperfections is probably less than 20 percent, and most likely, much less.

In each governorate, 1,100 households were selected for interview, with the exception of Baghdad, where 3,300 households were selected. The sample thus consisted of 22,000 households. Of these, 21,668 were actually interviewed. More information on the technical aspects of the sample can be found in Appendix 1.

Fieldwork

COSIT staff were extensively trained in implementing the survey tool by researchers from the Fafo Institute of Applied International Studies (Fafo AIS). The first round of training took place in Amman, Jordan during the first three weeks of February 2003. Core staff from COSIT's offices in each governorate were present, in addition to administrative staff from the headquarters in Baghdad. Training of local staff was subsequently conducted at six locations within Iraq during the first two weeks of March 2003 by COSIT's core staff under supervision from Fafo.

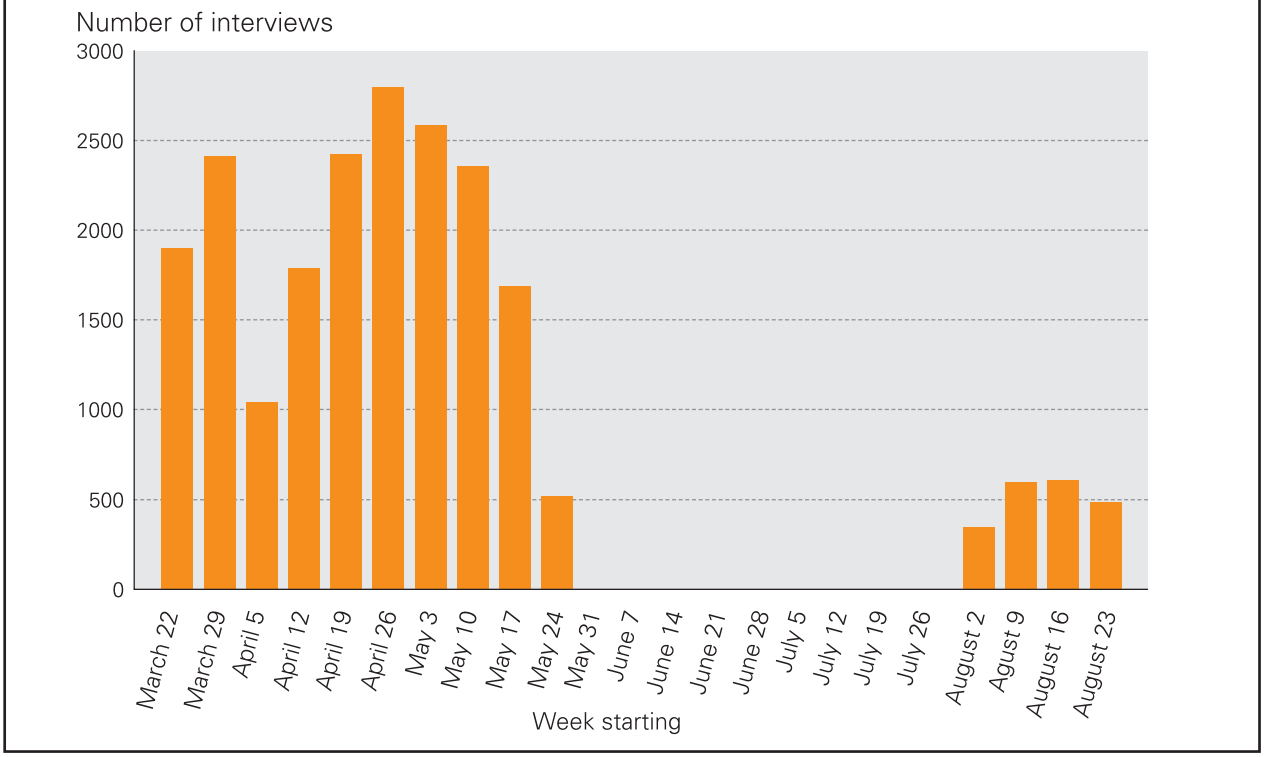
Fieldwork started on March 22, 2004, and was completed by May 25, 2004. Data collection in the Governorates of Erbil and Dahouk were implemented and completed in August 2004. The distribution of interviews by week is shown in Figure 1.

After each selected PSU had been mapped and listed, interviewers were sent to the 10 selected households. Interviewers were organized in teams of five, with individual supervisors who continuously provided guidance and checked the quality of all incoming interviews. When necessary, interviewers were sent back to the households to reconfirm information. Furthermore, supervisors from COSIT's headquarters in Baghdad and Fafo staff also visited the interviewer teams.

Upon completion of the interviews, the information was sent to the governorate office for registration and inspection, then to the Baghdad main office for coding and data entry. During the data entry process, extensive quality control was implemented, and questionnaires were sent back to the field for re-interviewing or update both by COSIT's Baghdad office and by Fafo headquarters in Oslo.

Completed data files were continuously sent to Fafo's headquarters in Oslo, Norway, where further quality checks were implemented. In instances where problems arose, direct communication was made with COSIT. Several times during the fieldwork,

Figure 1: Distribution of interviews by week



COSIT arranged meetings with its offices' heads in order to inform them of problems that had surfaced and resolve them.

The same procedures were followed during the fieldwork in the two governorates of Erbil and Dahouk.

Although fieldwork occasionally had to be halted in particularly insecure locations, it generally continued throughout the entire period.

The content of this book

The purpose of this publication is to portray the living conditions of the Iraqi population as captured by the survey during the spring and early summer of 2004, as well as to analyse and report on the major topics covered by the questionnaire. The method of a large-scale living conditions survey provides information about the context which individuals live in, their stock of human and social capital and their activities. In the following section, a thematic introduction to the different chapters is presented.

Housing, Infrastructure, and Population

Chapter one examines housing conditions, the availability of infrastructure and services, and environmental issues. This chapter first looks at the delivery of basic services such as electricity, water and sanitation, emphasizing not only on households' access to networks but also on the quality and stability of supply. The households' dwellings are then described with reference to the type, size, number of people in dwelling, and tenure arrangements, in order to provide information pertaining to the space in which individuals live in. Furthermore, damages to dwellings caused by acts of war or lack of maintenance are described and analysed in relation to households' plans and state of repair. This chapter also describes individuals' satisfaction with different aspects of housing and the environment in close vicinity to the dwelling. Finally, the chapter looks at households' access to social services, focusing mainly on health and education services. All analyses are done in relation to households' geographical place of residence and socio-economic status.

Chapter two describes and analyses the characteristics of the Iraqi population. The dynamics of any population can be described in terms of births, deaths, and migration, and these topics are dealt with in this chapter, paying specific regard to the population's age and gender structure. Particular emphasis is also given to infant and child mortality in Iraq, and the demographic effects of war and strife are also discussed.

Health, Education, and the Role of Women

Chapter three discusses the findings on nutritional status and child health. The analysis focuses on the different measurements of malnutrition and their distribution within the Iraqi population to both the geographical and socio-economic status of the household. This chapter looks further at children's health and morbidity, describing the occurrence of diarrhea and acute respiratory infection and the means by which they are treated.

Chapter four describes the ILCS findings on coverage of reproductive health services and birth history. Emphasis is given to pregnancy care and birth delivery practices, such as place and attendance of health professionals at birth, prenatal care, postnatal care, and birth intervals.

Chapter five focuses on the general health situation of the Iraqi population and their access to health services. Findings on the prevalence of chronic illness, war-related causes of chronic illness, incidence of acute illness and injury are examined in relation to the use of health services.

Chapter six considers the supply, demand, and quality of education in Iraq. The supply of education encompasses physical infrastructure and public spending; demand is related to various aspects of enrolment; and the quality of education refers to how the system works internally. Special emphasis is given to enrolment levels and characteristics, as well as to the achieved education and literacy levels in the adult population. As in other chapters, the geographic and socio-economic differentiation of educational achievements is considered.

Chapter seven presents an analysis of the present living condition of Iraqi women, based on survey data from different arenas where gender is considered central for understanding women's overall situation. The main focus is on women's role in education and the labour force while women's role in the family is mainly discussed when data is presented on female heads of households. Because the security situation is a major obstacle to individual freedom in women's everyday life, information about women and security is presented in a separate section in this chapter.

Household Economics: Work, Employment, and Income

Chapter eight deals with labour force participation and employment. The analysis outlines some of the difficulties inherent in estimating employment and unemployment in an economy like Iraq's, and considers aspects of both visible and hidden underemployment. The distribution of occupation and industries in Iraq is also discussed.

Chapter nine describes the result of work—specifically the income and wealth of households. Data collected on household income, the material possessions of households, and subjective measures of destitution and poverty are used to portray income patterns, which in turn lead to an analysis of inequality. The data obtained does not allow for a full-fledged poverty mapping, but insight into the characteristics of poverty in Iraq is gained through an understanding of how people perceive their situation.

Technical notes on administrative divisions and money

Administrative divisions

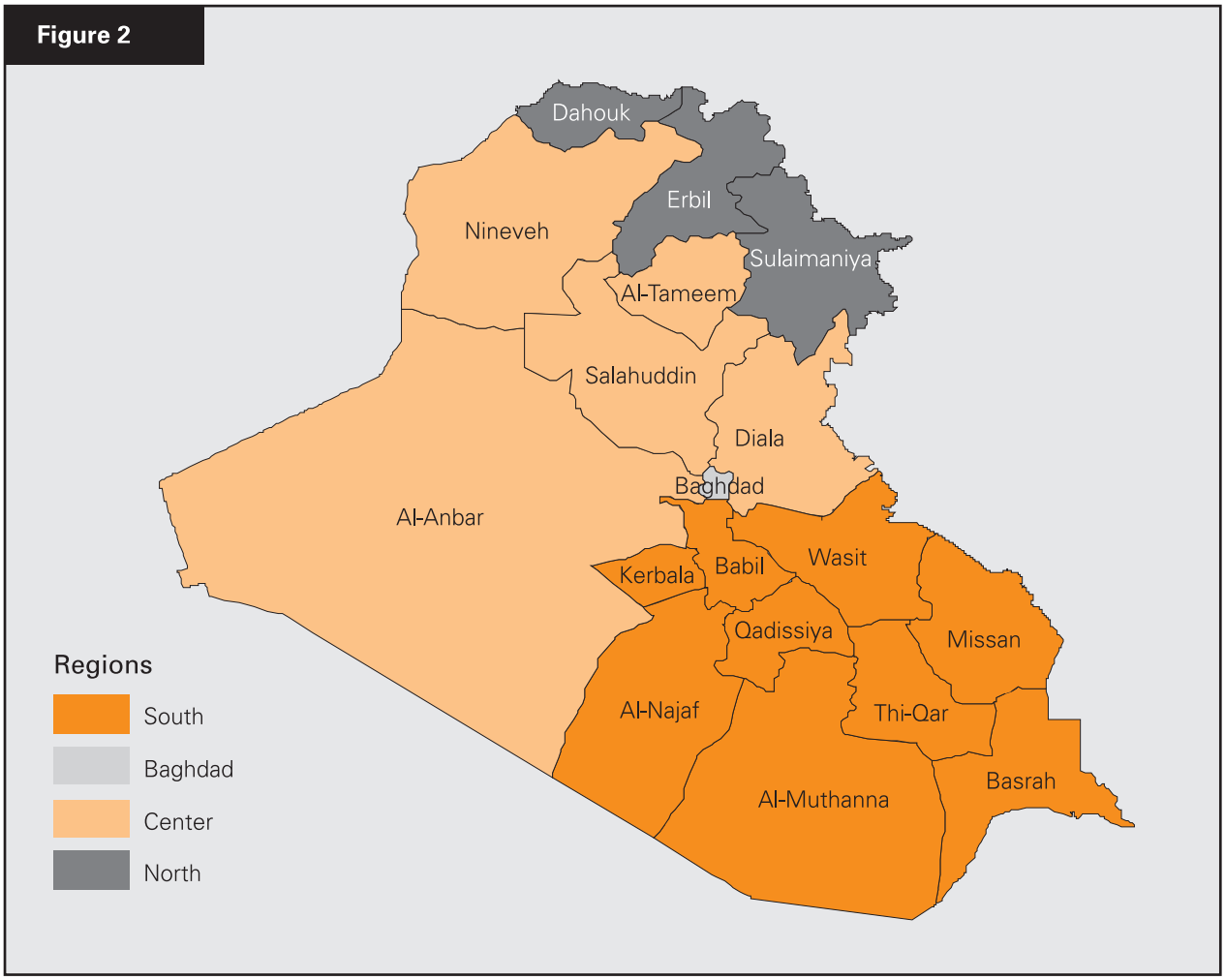
Iraq is administratively divided into 18 "Muhafaza" (provinces), which are referred to in the text as governorates. These are again divided into districts (as well as lower administrative levels), however the survey was unable to report on these districts because of the low sample size in each. One should note that different views exist on the exact location of the boundaries between governorates, and the divisions used in this report do not in any way reflect a position on these issues by UNDP, COSIT, or Fafo.

The divisions used in this report are shown in Figure 2.

Money

Monetary values are generally reported in (new) Iraqi Dinars. One U.S. Dollar corresponds to 1,500 Dinars.

Figure 2



1. Infrastructure, Housing and Environment

Summary

The historical legacy of a regime that was concerned with providing its population with general infrastructure and social services can still be seen in Iraq today. Large infrastructure networks like the electricity grids, water pipes and sewage systems are generally available to Iraqi households.

Electricity is obtained from networks by 98 percent of all households; 78 percent get their water piped to their dwelling; and 37 percent of all households are connected to sewage systems. However, the functioning of these systems is very unsatisfactory. 78 percent of all households with electricity from networks and 66 percent of households with water piped to their dwelling report severe instability in supply. About half of all households connected to sewage systems indicate that they experience frequent problems. Rundown and poorly functioning infrastructure systems represent one of the largest challenges in rebuilding Iraq. At the time of interviewing (April/May 2004) substantial dissatisfaction in the population with the supply of basic needs, like electricity and water, were found.

The majority of Iraqis live in permanent housing in the form of apartments, dars, mushtamals or villas. Some of the housing stock has damages from dilapidation or war activities, but there is relatively little of the improvised squatter-type housing found in poorer areas of many developing counties. The vast majority of households own their current residence; renting is for the most part an urban phenomenon.

The average number of people sharing one dwelling is 6 in urban areas and 7 in rural areas, indicating larger households in the countryside. Ten percent of all households in Iraq experience crowding in their dwelling, and there is a clear distinction between the rural and urban areas: 16 percent of households in rural areas are crowded, whereas in urban areas crowding is evident in 7 percent of households.

Access to public services like health and education facilities is relatively good in Iraq: more than nine in ten households can reach a primary school, a secondary school, a health centre, and a place of worship within 30 minutes from their dwelling with the usual means of transportation (cars, public transportation, walking and other means). In terms of service provision, large geographical differences are found in which rural areas receive poorer access.

However, services are relatively widely available, households report very low satisfaction with the educational and health system, particularly in rural areas.

The largest differences in access to and supply of social services and infrastructure facilities are found across geographic dimensions, such as between urban and rural populations and different governorates. Since these are the most dominating background variables affecting access and supply of infrastructural services like electricity, drinking water and sanitation, the analysis will focus mainly on geographical dimensions, supplemented by the information on different socio-economic groups of the population.

Compared to other countries in the Middle East, Iraq scores low on the UN Millennium Development Goals; more importantly, in comparison to earlier statistics, an alarming deterioration in the indicators is apparent.

Introduction

Infrastructure and social services in Iraq have traditionally been managed and maintained by the government as a public good for the enjoyment of the entire population. Electricity and fuel prices have historically been kept low and the national budget financed the expansions and maintenance of the system. As a result, most households in Iraq have access to electrical grids with stability and supply being the real challenge rather than connection to the network.

Extensive use for more than 20 years, sanctions during the 1990s, misguided economic policies and three wars in Iraq have contributed to the deterioration, damage and negligence of both the development and maintenance of infrastructure and services. After the most recent war, the situation worsened due to looting, destruction of public property, and general insecurity.

The access to and functioning of infrastructure and services is changing rapidly; however, the new Iraqi government, the UN, international NGOs, the coalition forces and donor contries are undertaking major efforts to improve the situation. The findings presented in this chapter only reflect the situation during the period of interviewing for the ILCS, from early April through May 2004[1].

1. Interviewing in the two northern governorates of Erbil and Duhouk was conducted in August 2004.

Electricity and energy use

Most households connected to networks

Most households in Iraq obtain their electricity from electrical networks; this is particularly true in the urban areas of the country. On average, 98 percent of all urban households report networks as their primary source of electricity. Networks are also by far the most common source of electricity in the rural areas, where 93 percent of all households identify networks as their primary source of electricity. With regard to other sources of electricity in rural households, two percent reported having private or shared generators and two percent reported having no electricity.

Table 1: Primary source of electricity, by urban-rural and governorate

		A network	Private generator	Shared generator	No electricity
Total		**96**	**1**	**1**	**0**
South	Rural	96	1	0	2
	Urban	98	0	0	-
Baghdad	Rural	99	-	-	-
	Urban	98	1	0	-
Centre	Rural	94	2	1	2
	Urban	98	1	1	-
North	Rural	57	11	26	2
	Urban	96	1	1	-

As shown in Table 1, the main exception to this trend is found in the rural areas in the northern governorates, where only 57 percent of households are connected to a grid, 11 percent have a private generator, and one in every four rural households share a generator with others.

When a household's primary source of electricity frequently fails, it is important to have a secondary source to rely on. The ILCS asked respondents to indicate their alternative sources of electricity and found that 29 percent of all households in Iraq have more than one source (table not shown). Alternative sources are more common in urban areas where 32 percent of households report to have a secondary source, whereas 19 percent of all households in rural areas state being able to get electricity from a secondary source if needed.

Even though access to secondary sources of electricity varies from urban to rural areas, the type of source is almost the same. Three in four households with access to an alternative source report this to be a shared generator; the remaining households depend on private generators for their alternative supply. Shared generators are most common in the central and

southern parts of Iraq, whereas private generators are most common in Baghdad and the northern regions[2]. Wealthier households rely more often on private generators, whereas poorer households depend on shared generators – if they have access to secondary sources at all.

To explain the extent to which secondary sources of electricity are necessary in Iraq, the stability of electrical supply and the variations across geographical areas and between societal groups are examined below.

Major problems with electricity supply

There is no doubt that stability of electrical supply is an important and difficult issue in today's Iraq. Over time, many households have experienced a reduced supply and a dramatic worsening of its quality and stability, particularly in the urban areas, where supply in the past was more stable. The ILCS shows that three in four Iraqi households report an unstable supply of electricity.

Respondents were asked to evaluate the stability of their electrical supply based on the following categories: stable supply, cut-offs a few times monthly, weekly cut-offs, daily cut-offs (lasting less than 12 hours a day) and daily cut-offs (for more than 12 hours). The respondents were also asked to indicate if they experience periods of low voltage ('brown-outs'). Table 2 defines the electrical supply as stable if the voltage is stable and if cut offs only occur less than weekly. If the households experience daily voltage problems and cut-offs in their supply, they are characterized as households with unstable electricity. The electrical supply is defined as rather unstable if the household experiences problems with supply and voltage weekly, but not daily.

2. Eighty-four percent of southern households have shared generators as their alternative source; 90 percent in the central regions. Fifty-five percent of households in Baghdad depend on private generators for additional supply; the same applies for 57 percent of northern households.

Table 2: Stability of electrical supply by region

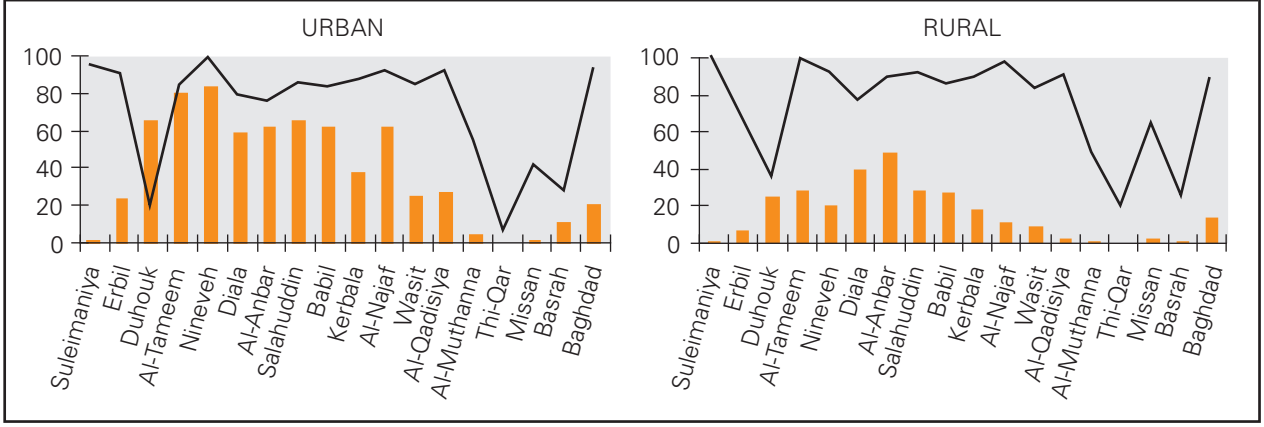
	Stable	Rather Un-stable	Un-stable	No elec-tricity	Total	Un-weighted n	Total number ('000)
Total	**15**	**7**	**78**	**0**	**100**	**20,743**	**4,108**
South	28	14	58	1	100	9,591	1,446
Baghdad	4	4	92	0	100	3,200	1,124
Centre	9	3	87	1	100	5,208	983
North	13	2	85	0	100	2,744	555

As shown in Table 2, more than 3.2 million households experience unstable electrical supply. The situation is somewhat better in the northern region of the country, while in Baghdad, close to all households suffer from unstable supply.

To what extent are households able to turn to their alternative sources of electricity when their network connection fails? Nationwide, 29 percent of households have alternative sources of electricity to turn to when their main source fails, but this is less than half of the households that actually suffer from unstable supply. In the following section, focus is placed on the distribution of the problem within regions and governorates, and to what extent households have or do not have alternative sources.

Figure 3 illustrates the instability of electrical supply. The line in the figure indicates the percentage of households with unstable supply of electricity. The curve is high across most of the governorates in both rural and urban areas. The situation is worst in the centre and best in the southern parts of the country. The largest difference between the rural and urban populations of a given governorate is seen in the northern governorate of Sulaimaniya, where urban households have very few problems with electrical supply while rural households suffer from very high instability; this may, however, be caused by few survey clusters with unstable supply in the area.

Figure 3: Unstable supply of electricity and access to alternative sources for electricity.
(Line shows percentage of households with unstable supply of electricity. Bars show households with access to alternative sources of electricity).



The bars in the figure indicate the number of households that have access to alternative sources of electricity. The figure shows that most people in areas with large problems of electrical stability have obtained a back-up source of electricity. There are significant differences between urban and rural areas, which may be explained by greater poverty and the lack of availability of generators in rural areas. Supporting an economic explanation is the finding that households in the poorer southern governorates of Al-Muthanna and Al-Qadisiya have very few households with alternative electricity sources even though they report a relatively unstable electrical supply.

Gas for cooking

Bottled propane gas is by far the most common energy source for cooking, used in 96 percent of all urban and 84 percent of all rural households. Kerosene is the cooking fuel for about 4 percent of the urban and 13 percent of the rural population, whereas 2 percent of rural households report that they use electricity as their main source of energy for cooking. This compares well with Jordan (Dury and Abu Sharar 1998), where 96 percent of the Jordanian households reported using gas for cooking.

As illustrated by Table 3, 13 percent of all rural households use kerosene as their main source of energy for cooking. This is particularly common among rural households in the southern regions of Al-Muthanna, Al-Najaf, Al-Qadisiya, Missan, and Thi-Qar, where up to 40 percent of households use kerosene as their main cooking fuel.

Table 3: Main source of energy for cooking, in percent of urban and rural households

	Gas	Kero-sene	Diesel	Electri-city	Wood or charcoal	Un-weighted n	Total number ('000)
Total	**93**	**6**	**0**	**0**	**0**	**21,634**	**4,252**
Rural	84	13	0	2	0	6,798	966
Urban	96	4	0	0	0	14,836	3,286

Although gas is clean and convenient, it is somewhat more expensive than other fuels; it is perhaps for this reason that many households turn to additional sources of energy for cooking: 46 percent of all rural households indicate that they use more than one source of fuel for cooking, of which 67 percent cite kerosene as their second source, 29 percent name electricity, and two percent report that they use wood or charcoal.

Rural households are more likely to have secondary sources for cooking fuel, but 27 percent of all urban households report that they use more than one source. The most common additional fuel source in urban areas is kerosene: 86 percent identify this as their second source for cooking fuel. It is worth noting that almost no households report use of wood, charcoal, dung, or diesel as fuel for cooking; these are all fuels that can cause unhealthy indoor environments.

Kerosene for heating

Although the majority of Iraqi households use gas for cooking, the majority – 87 percent, or 3.3 million households – uses kerosene to heat their homes. The second-most important source for heating is gas – about one in ten households nationwide heat their homes with gas. The pattern is somewhat similar across the different regions of the country, with the exception of the northern governorates, where fewer households use gas and about two in ten households use electricity for heating their homes. The northern governorates are also the only place where households use wood, charcoal, and dung for heating.

Table 4: Main source of energy for room heating, in percent of households

	Gas	Kero-sene	Diesel	Elec-tricity	Wood or charcoal	Dung	Un-weight-ed n	Total number ('000)
Total	**9**	**87**	**3**	**1**	**0**	**0**	**21,625**	**4,251**
Rural	10	84	1	5	0	0	6,794	965
Urban	9	87	3	0	0	0	14,831	3,285
South	10	82	2	6	0	0	3,536	431
Baghdad	6	90	4	0	0	0	269	75
Centre	11	88	1	1	0	0	2,207	395
North	3	70	1	21	2	2	782	65

An average of 23 percent of all Iraqi households say that they use more than one source of energy to heat their house. This is more common in rural households than in urban households by five percent. The most common alternative energy for heating in urban households is diesel (77 percent), whereas close to half of rural households use electricity.

Water

The UN has defined access to safe drinking water as one of the Millennium Development Goals indicators. Goal 7, target 10 states that the population without access to safe water should be halved by 2015 (Human Development Report 2003). With two of the world's largest and most important rivers running across its lands, water has played a significant role in Iraqi history. The ILCS data set provides information on various aspects of the water situation. This section describes the access, safety, and supply of drinking water to households throughout Iraq.

Majority have piped drinking water

Most households in Iraq obtain their drinking water through pipes: 78 percent of all households in the country have drinking water piped directly into their

dwelling. But, as shown in Table 5, there are large differences among regions and between rural and urban areas.

On average, 88 percent of all urban households in Iraq have piped water as their main source of drinking water, varying between regions: From 99 and 98 percent of urban households in Baghdad and in the centre, respectively, to 77 and 75 percent in the south and north, respectively. The other main source of drinking water for urban households is tanker-trucks in the south (19 percent), and water piped to the yard or compound in the north (19 percent).

Rural households have different drinking water sources than urban households. Total numbers for Iraq show that only 43 percent of rural households have their drinking water piped in to their dwelling; 13 percent rely on tanker-trucks, and one in every four rural households get their drinking water from unsafe natural sources such as rivers, lakes and streams.

Table 5: Source of drinking water in Iraqi regions

	South		Baghdad		Centre		North		All Iraq	
	Total	Rural	Total	Rural	Total	Rural	Total	Rural	Total	Rural
Piped to dwelling	64	32	97	66	81	55	70	26	78	43
Other piped water	2	3	1	0	1	2	18	14	4	3
Public tap	1	3	1	12	1	2	2	13	1	4
Open well	0	1	0	0	1	3	3	10	1	2
Covered Well/ borehole	0	0	0	1	1	1	3	13	1	2
Tanker-truck	19	18	0	4	5	12	1	1	8	13
Unsafe natural source	13	41	1	16	5	12	2	16	6	26
Other	1	2	0	1	5	12	2	7	2	6

Table 5 shows that there are relatively large regional differences in drinking water sources for rural households. In the southern part of Iraq, as many as 41 percent of rural households have unprotected natural sources as their main source of drinking water, making it the principal source in that region. In Baghdad, 16 percent of rural households get their drinking water from natural sources, whereas 12 percent get theirs from public taps. In the centre, tanker-trucks, unsafe natural sources, and other sources comprise the alternative to piped drinking water, with 12 percent of rural households having one of these as their main source. Rural households in the north seem to have more differentiated sources of drinking water, with piped water to the dwelling and unsafe natural resources as the two most common ones.

Geographic and regional differences between households are more important than socio-economic differences when it comes to the source of drinking water. This is particularly true in urban areas, where most households have piped water. In rural areas we see a tendency towards more piped water for households with higher income and in which the head of the household has higher education. The lower the education of the household head, and the lower the income, the higher the chances that rural households depend on unsafe natural sources for their drinking water.

Safety and stability of drinking water

The stability of drinking water supply is as important as its source. The ILCS asked households to indicate whether they experience trouble with their supply of drinking water, ranging from "almost never" to weekly or daily supply problems. If the households indicate that they have problems more than weekly, the supply is characterized as unstable.

On average, 33 percent of all Iraqi households have an unstable supply of drinking water. There are no clear differences between socio-economic groups or urban and rural locations. Baghdad seems to have more problems with supply: 36 percent of all households in the capital report an unstable supply of drinking water.

Broken down to governorate level, three governorates stand out with a significantly more unstable supply of drinking water. In the southern governorates of Al-Muthanna and Kerbala, 54 and 48 percent of all households suffer from an unstable drinking water supply, respectively. In the central governorate of Diala, 47 percent of households have an unstable supply.

The most unreliable sources of drinking water are water piped into a yard and public taps. Close to half of the households depending on these sources report unstable water supply.

Safe and stable drinking water

Drinking water is characterized as safe and stable when: the source is safe, according to the UN definition presented in Box 1, and the household reports less than weekly problems with supply. It is however important to note that there are no guarantees that piped water to a household connection is safe, contamination of water from this source may occur, making the water unsafe.

Nationwide, 54 percent of households have access to a safe and stable supply of drinking water; 29 percent have drinking water from safe sources but with an unstable supply; and 17 percent of all households have neither safe nor stable drinking water. This gives an estimated number of more than 722,000 Iraqi households with unsafe and unstable drinking water.

Box 1: Safe and stable water definition

Safe and stable drinking water

To measure access to safe and stable drinking water, ILCS used the UN definition of safe sources of drinking water (Human Development Report 2003).

"Improved" drinking water supply technologies are: household connection, public standpipe, borehole, protected dug well, protected spring and rainwater collection.

In addition, we have added the criterion that the households should not have reported problems with drinking water supply more often than weekly.

There are relatively large differences between the geographical regions in Iraq when it comes to the safety of drinking water. Table 6 shows that 63 percent of all households in the capital region of Baghdad have safe drinking water, and only 2 percent have unstable water from an unsafe source. The south is home to the lowest percentage of households with safe water; as many as 33 percent of households have neither safe nor stable sources. In the central region, 16 percent of households are without safe sources of stable supply.

When looking at results at the governorate level, large disparities are found. In seven governorates, less than half the households have access to safe and stable drinking water: Basrah, Al-Muthanna, Babil, Kerbala, Al-Qadisiya, all in the southern parts of the country, and Salahuddin and Diala in the central regions. Due to the high dependency of tanker-trucks for delivery of water in Basrah, three in every four households in that governorate suffer from unsafe drinking water.
The stability of drinking water is important because stable supplies reduce the need for storage. When water is stored for long periods of time, it increases the chances of contamination.

Table 6: Percentage of Iraqi households with safe and stable water (geographical distribution)

		Stable safe drinking water	Unstable safe drinking water	Unsafe drinking water	Un-weighted n	Total number ('000)
Total		**54**	**29**	**17**	**21,626**	**4,249**
Urban - rural	Rural	33	19	48	6,795	966
	Urban	60	32	8	14,831	3,284
Main regions	South	45	23	33	9,838	1,485
	Baghdad	63	35	2	3,263	1,145
	Centre	55	29	16	5,391	1,016
	North	61	32	7	3,134	604
Governorate	Dahouk	67	21	12	1,074	70
	Nineveh	54	31	15	1,088	350
	Sulaimaniya	55	34	11	1,082	300
	Al-Tameem	69	24	6	1,074	144
	Erbil	67	32	2	978	234
	Diala	43	35	23	1,092	207
	Al-Anbar	70	19	10	1,073	166
	Baghdad	63	35	2	3,263	1,145
	Babil	44	33	23	1,093	200
	Kerbala	46	43	11	1,089	112
	Wasit	51	27	23	1,098	136
	Salahuddin	42	33	25	1,064	149
	Al-Najaf	68	24	9	1,090	162
	Al-Qadisiya	47	32	21	1,100	149
	Al-Muthanna	30	37	32	1,096	67
	Thi-Qar	64	6	30	1,098	220
	Missan	69	18	13	1,099	108
	Basrah	11	13	76	1,075	330

A mere nine percent of all Iraqi households purify their drinking water, five percent of which are in rural areas. The analysis shows that purifying drinking water is more common in the northern parts of Iraq, where 15 percent of all households purify their drinking water, most notably, in the governorate of Sulaimaniya (22 percent). In the southern governorate of Thi-Qar, as many as 28 percent of urban households purify their drinking water. Overall, however, purification is not very common in Iraq. Fourteen percent of households who attain their main supply of water from open wells purify their water; although the number of households who use open wells as their main source is relatively low. It is worth noting that only six percent of the households that obtain their drinking water from unsafe natural sources purify it.

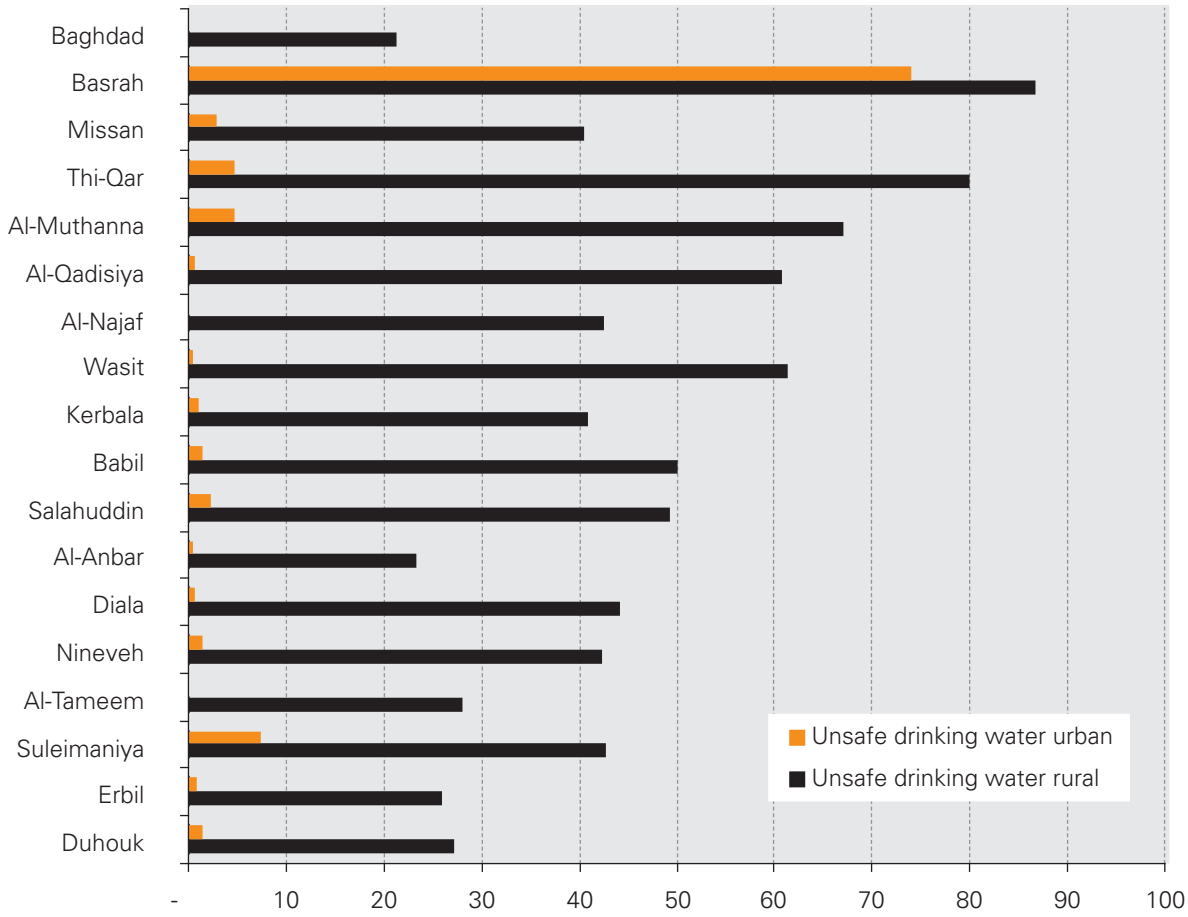
Traditionally vulnerable groups have unsafe water

Even though the differences are relatively small, households with young household heads, low income, low education and children under five years of age fall more oftenly in the category of households without safe drinking water. This indicates that traditionally vulnerable groups are falling behind on this indicator.

Table 7: Percentage of Iraqi households with safe and stable water (socio-economic indicators)

		Unsafe drinking water	Stable safe drinking water	Unstable safe drinking water	Un-weighted n	Tota number (<000)
Gender of household head	Male household head	17	54	29	19,235	3,764
	Female household head	11	58	31	2,389	485
Age of household head	Young household head	22	48	30	5,288	1,016
	Mid-aged household head	15	56	29	12,370	2,455
	Old household head	14	58	28	3,966	778
Education of household head	Never attended school	20	50	30	6,151	1,057
	Incomplete elementary	17	51	31	2,407	464
	Elementary	17	53	30	5,485	1,097
	Intermediate	14	55	31	2,395	507
	Secondary	14	58	28	1,938	407
	Higher	13	62	24	3,160	695
Children below 5 in household	No children below 5	14	57	29	10,131	2,083
	Children below 5	19	51	29	11,493	2,166
Income 2003 per capita - quintiles	Lowest income	18	51	31	4,355	807
	Low income	16	51	32	4,195	819
	Medium income	17	53	31	4,059	805
	High income	17	55	27	3,948	794
	Highest income	17	59	24	4,135	841

Figure 4: Percentage of households with unsafe drinking water in rural and urban areas



Safety of water depends on place of residence

Table 6 shows large differences between rural and urban Iraqi households in reference to safe and stable drinking water. Only 33 percent of the rural population has access to safe and stable drinking water compared to 60 percent in urban areas. Only 8 percent of urban households have unsafe sources and unstable supply of drinking water, whereas 48 percent of rural households suffer from this problem. The analysis below focuses on the drinking water situation in rural and urban areas in the Iraqi governorates.

The differences in access to safe drinking water between urban and rural households is illustrated in Figure 4, indicating that in some governorates, more than 80 percent of rural households have unsafe drinking water. The situation is particularly alarming for rural areas in the southern governorates of Basrah, Thi-Qar, Al-Qadisiya, Wasit, and Babil, home to the southern parts of the Tigris and Euphrates rivers. Households in the rural parts of the four governorates of Thi-Qar, Al-Qadisiya, Wasit, and Babil, report the highest percentage of rivers and/or streams as their main source of drinking water – more than 40 percent of rural households in these governorates get their drinking water from unprotected natural sources.

The alarming situation in Basrah is mainly caused by the extremely high reliance on tank-trucks for the delivery of drinking water in both urban and rural areas; 85 percent of all households in rural areas and 71 percent of all households in urban areas rely on tank-trucks for their drinking water supply. In the standard definition of safe water presented by the United Nations (Human Development Report 2003), tank-trucks are not seen as a safe source of water.

Table 8: Percentage of rural households in Thi-Qar, Al- Qadisiya, Wasit, and Babil with unprotected natural drinking water sources

Babil	44
Wasit	57
Thi-Qar	60
Al-qadisiya	55

Time spent to collect drinking water

The ILCS asked households to indicate the total time spent getting to the source of drinking water, waiting in line and coming back to their household. As shown in the previous analysis and in Table 9, the majority of Iraqi households have their drinking water piped to the dwelling, but again, large differences exist between rural and urban households and between the different regions in the country: 20 percent of all rural households in Iraq spend between 10 and 30 minutes getting their drinking water; another 7 percent spend more than half an hour. In total, close to 340,000 households have to spend more than 10 minutes to get their drinking water.

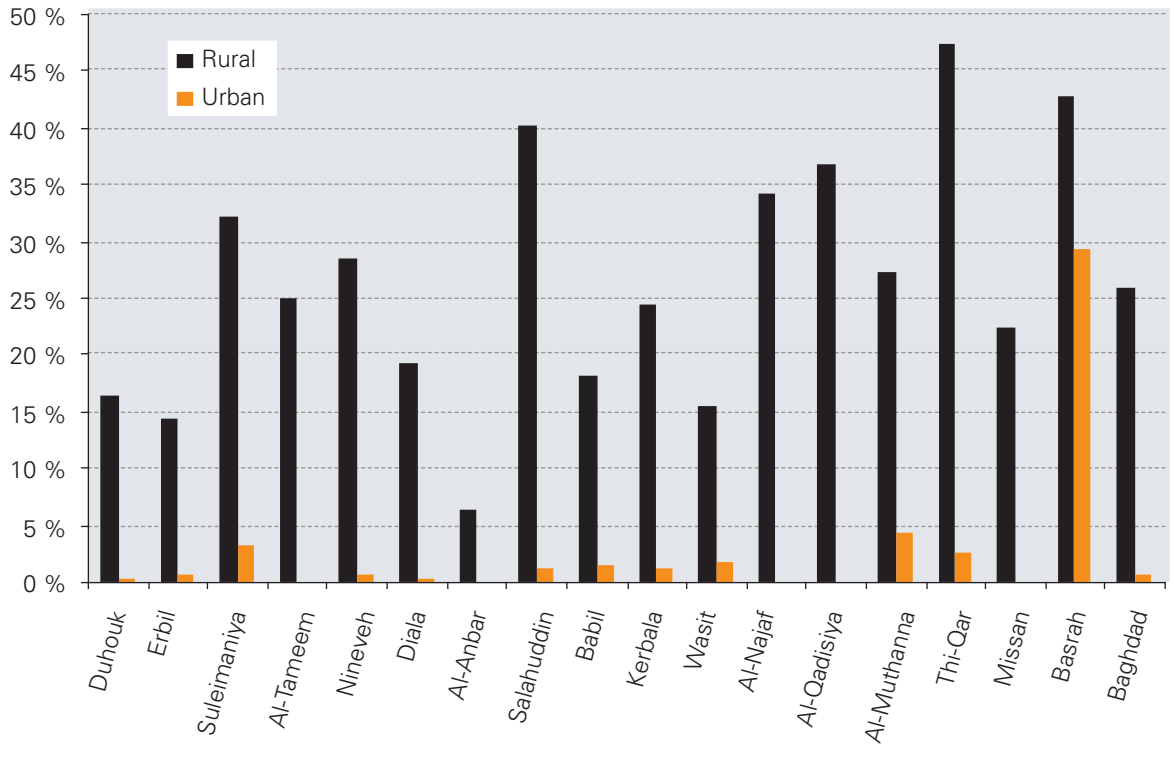
The pattern of larger problems in the south is also confirmed by the findings presented above. The south has the largest amount of households that spend more than 10 minutes to get to their source of drinking water, this is particularly true for the rural areas. In the governorate of Basrah, 29 percent of the urban and 43 percent of the rural households spend more than 10 minutes to get their drinking water. In rural Thi-Qar, 48 percent of all households spend more than 10 minutes getting their drinking water.

Additionally, rural households in the central governorate of Salahuddin are burdened with extended amounts of time needed to obtain drinking water: 40 percent spend more than 10 minutes, and as many as 13 percent spend more than one hour.

Table 9: Time to source of drinking water

	In dwelling	Less than 10 minutes	10 to 30 minutes	30 to 60 minutes	More than one hour	Un-weighted n	Total number (<000)
Total	78	13	7	1	0	21,591	4,246
Rural	45	28	20	5	2	6,765	962
Urban	88	9	3	0	0	14,826	3,284
South	64	21	14	1	0	9,825	1,483
Baghdad	97	1	1	1	0	3,261	1,145
Centre	82	8	6	2	1	5,382	1,014
North	70	26	3	1	0	3,123	605

Figure 5: Percentage of households who spend more than 10 minutes to get water and return



The main source of drinking water is important with regard to the time spent obtaining it. Table 10 shows the distribution of average time spent by households getting water from different sources in urban and rural areas. When reading the table, it is important to keep in mind that 88 percent of all urban households have their drinking water piped to the dwelling. Households with public taps as their main source of drinking water, whether they are urban or rural, spend the most time getting their drinking water.

Alternative sources of drinking water are often unsafe

Nationwide in Iraq, close to 1.4 million households do not have stable access to drinking water. When the primary drinking water source of these households fails, a secondary source is of utmost importance. To what extent are alternative sources safe, and do households have access to them?

In Table 11, the distribution of secondary sources of drinking water is given for households with unstable primary sources. Close to half of these households have unsafe natural sources as their alternative source. This is the case for most regions and areas, with the exception of the northern governorates of Erbil, Dahouk, and Sulaimaniya, in which the main alternative source is tanker-trucks. It is alarming to find that 13 percent of all households with an unstable primary source of drinking water have no secondary source to turn to; this is particularly a problem in the central region, where as many as 29 percent of households with an unstable primary source of drinking water have no alternative.

In some parts of the country, especially in urban areas – and in Baghdad in particular – piped water into the dwelling is given as the secondary source of drinking water. This may be an indication that the supply of piped water is so unstable that it is no longer seen as the main source.

Water costs are too high and the quality is too low

Even though access to water is relatively widespread in Iraq, the majority of households say they have problems obtaining the drinking water they need: 70 percent of all rural households find it problematic to get enough drinking water. In the southern regions, these numbers reach 76 percent. The high numbers of dissatisfied households, with regards to the cost and supply of drinking water, indicate low quality water services.

Urban households whose primary source is open or covered wells or unsafe natural sources particularly see the cost of water as a restriction on the consumption of drinking water. Rural households

Table 10: Time collecting drinking water by source

	In dwelling		Less than 10 minutes		10 to 3 minutes		30 to 60 minutes		More than one hour	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Piped to dwelling	100	100	0	0	0	0	0	0	0	0
Other piped water	0	10	94	82	5	7	1	2	1	0
Public tap	1	0	34	47	44	24	16	27	5	2
Open well	0	1	95	68	3	27	3	3	0	1
Covered Well/borehole	0	1	73	69	17	27	8	1	2	2
Tank-truck	2	2	60	54	37	26	1	10	0	8
Unsafe natural source	1	1	38	46	54	48	7	4	0	1
Other	6	4	61	34	30	30	3	25	0	6

Table 11: Secondary source of drinking water for households with unstable primary source

	Piped to dwelling	Other piped water	Public tap	Open well	Covered Well/ borehole	Tank-truck	Unsafe natural source	No secondary source	Other	Un-weighted n	Total number (<000)
Total	**9**	**2**	**2**	**3**	**1**	**14**	**45**	**13**	**11**	**6,973**	**1,389**
Rural	2	1	2	9	2	5	58	14	7	2,118	296
Urban	11	2	2	2	1	16	41	13	12	4,855	1,093
South	7	5	5	6	1	10	44	14	9	3,012	419
Baghdad	18	1	1	0	0	1	65	3	10	1,174	411
Centre	5	0	1	3	1	7	43	29	11	1,769	344
North	3	1	1	4	6	58	9	4	14	1,018	214

Table 12: Households' satisfaction with drinking water, in percent of households that agree to statement

	"Cost of drinking water restricts consumption"		"Problems obtaining the needed drinking water, not adequate supply"	
	Urban	Rural	Urban	Rural
Total	**38**	**51**	**54**	**70**
South	42	57	56	76
Baghdad	36	13	61	31
Centre	25	53	44	72
North	50	49	47	57
Piped to dwelling	36	39	52	57
Other piped water	37	51	63	72
Public tap	62	58	75	62
Open well	71	62	70	76
Covered Well/borehole	88	41	75	66
Tanker-truck	53	76	63	94
Unsafe natural source	70	54	83	73
Other source	82	70	88	92

depending on tanker-trucks also see cost as a households depending on tanker-trucks also see cost as a restriction on consumption.

Furthermore, urban households in the south complain about problems in obtaining adequate supplies of drinking water; this is particularly the case for households depending on tanker-trucks, unsafe natural resources, and open wells. As shown previously, the majority of rural households in the southern region of Iraq depend on unsafe natural resources and tanker-trucks. When 73 and 94 percent, respectively, within these groups indicate that their supply is inadequate, it is evident that there are high rates of dissatisfaction among people. Only minor differences can be seen in relation to the responding households' socio-economic status. Rich, highly educated households are just as dissatisfied as poor, uneducated ones.

Drinking water is deteriorating relative to the past and to neighbouring countries

Compared to other countries in the region and to the earlier data from Iraq reported by UNDP (The Millennium Development Goals in Arab Countries 2003), we find that the supply of safe and stable water supply in Iraq has deteriorated.

3. Source: UNDP 2003a, The Millennium Development Goals in Arab Countries. United Nations Development Programme. New York

Table 13: Access to safe water, compared to other countries in the region

	Urban	Rural
Jordan[3]	100%	83%
Syria[3]	92%	67%
Lebanon[3]	100%	100%
Saudi Arabia[3]	100%	67%
West-Bank and Gaza[3]	96%	86%
Iraq (UNDP)[3]	95%	48%
Iraq (ILCS)	60%	33%

UNDP reports on percentage of population with access to safe water. The ILCS reports on percentage of households with access to safe and stable drinking water. Due to these differences in reporting we would expect some differences, however, they should be relatively minor and a comparison of the results should be possible. The results from the ILCS study indicates a substantial reduction in access to safe and stable (drinking) water, particularly in urban areas.

A reduction in urban access to safe drinking water from 95 to 60 percent is grave. Compared to other Arab counties, Iraq is far behind, and the observed deterioration of the situation is alarming.

Sanitation facilities

Private toilets most common, public toilets widespread in some areas

The ILCS distinguished between three locations of toilets in Iraq: private toilets within the building or compound of residence (shared by one or two households), shared or public toilets (shared by three or more households), and the outdoors or other places.

The most common locations and types of toilets are private toilets within the building or compound of residence: 70 percent of all rural and 72 percent of all urban households have access to this type of facility. The second-most common toilet facility is public or shared toilets: 28 percent of urban households and 20 percent of rural households have this type of facility. The remaining 11 percent of rural households use the outdoor or other places as toilet facilities.

There are no major differences among regions with regard to the location of toilets, with the exception of the use of outdoor toilets in the south, where 15 percent of rural households use the outdoors - a substantially higher figure than in any other region.

The urban-rural differences are consistent across the governorates. In Wasit, 23 percent of rural households have no indoor toilet facilities; the same is true for 36 percent in Al-Qadissiya, and 45 percent in Al-Muthanna. In the densely populated governorate of

Basrah, more households in both urban and rural areas use public toilets rather than private toilets.

Table 14: Percentage of urban and rural households, distributed on type of toilet

	Private toilet within compound		Public toilet		Use outdoor or other places	
	Urban	Rural	Urban	Rural	Urban	Rural
Total	**72**	**70**	**28**	**20**	**-**	**11**
South	71	64	29	21	0	15
Baghdad	66	79	34	21	0	0
Centre	82	75	18	18	0	8
North	74	71	25	21	0	8
Dahouk	73	68	27	28	0	4
Nineveh	71	62	29	24	0	14
Suleimaniya	79	76	21	13	0	11
Al-Tameem	91	94	8	5	0	1
Erbil	69	58	31	29	0	13
Diala	82	75	18	21	0	4
Al-Anbar	97	95	3	4	-	1
Baghdad	66	79	34	21	0	0
Babil	86	72	13	15	0	13
Kerbala	78	67	22	28	0	5
Wasit	91	65	9	12	0	23
Salahuddin	83	67	16	21	1	12
Al-Najaf	60	51	40	46	-	3
Al-Qadisiya	59	30	40	34	0	36
Al-Muthanna	90	52	8	4	2	45
Thi-Qar	84	86	16	5	1	9
Missan	96	86	4	4	0	10
Basrah	49	48	51	52	0	-

Households in which income is low and the household head has a low education level have less satisfactory toilet facilities than others. Concerning education of household-head in rural areas, 4 percent of households with highly educated heads use the outdoors as toilet facilities, whereas 16 percent of households in which the head has less than an elementary education use the outdoors. The level of education must be seen as closely linked to socio-economic status, indicating that both income and education goes together when analyzing sanitation facilities.

Households in the high-income groups are more likely to have private toilet facilities than those in the low-income groups, but the socio-economic background variable with the largest effect is education: Households with highly educated household heads have a 12 percent higher chance of having private toilet facilities. Private toilet facilities were found in 69 percent of households with low-educated household heads in comparison to 81 percent of households with highly educated household heads.

Sanitation improved for more than half of households

The ILCS distinguishes between the five most common types of toilet facilities in Iraq: Pour-flush latrine connected to a public sewage network, pour-flush latrine connected to a septic tank, covered dry latrine, service or bucket latrine where excreta are manually removed, and open dry latrine. According to the standard definition provided by the UN Statistics Division (see Box 2), three of the facilities listed above are classified as "improved sanitation technologies".

In the following analysis, households with pour-flush latrine connected to a public sewage network, pour-flush latrine connected to a septic tank, and covered dry latrine are classified as having improved sanitation, whereas households with service or bucket latrine where excreta are manually removed and open dry latrine are classified as having unimproved sanitation. Nationwide, 36 percent of households have unimproved toilet facilities; broken down, this accounts for 44 percent of rural households and 34 percent of urban households.

A total of 1.5 million households in Iraq suffer from unimproved sanitation facilities.

Box 2: Definition of improved sanitation

Toilet facilities
(Improved sanitation/safe toilet)
(Definition from UN Statistics Division)

"Improved" sanitation technologies are: connection to a public sewer, connection to septic system, pour-flush latrine, simple pit latrine, ventilated improved pit latrine ; The excreta disposal system is considered adequate if it is private or shared (but not public) and it hygienically separates human excreta from human contact.

"Not improved" are: service or bucket latrines (where excreta are manually removed), public latrines, latrines with an open pit.

Define as "public" if more than two households share. (UNHabitat)

Table 15: Percentage of households with improved sanitation (MDG goal)

	Not improved	Improved	Un-weighted n	Total number (<000)
Total	**36**	**64**	**21,637**	**4,253**
Rural	44	56	6,798	966
Urban	34	66	14,839	3,287
South	40	60	9,839	1,485
Baghdad	38	62	3,264	1,145
Centre	27	73	5,392	1,016
North	37	63	3,142	606

Once again, substantial differences between urban and rural areas and between socio-economic groups are marked. The situation for rural households in the south is startling. The majority of households have unimproved sanitation, and the situations in the governorates of Al-Qadisiya, Al-Najaf, and Basrah – where, respectively 85, 65 and 63 percent of all rural households have unimproved sanitation – illustrates the seriousness of the problem.

The same three governorates have high percentages of urban households without improved sanitation: 57 percent of urban households in Basrah, 47 percent in Al-Qadisiya, and 43 percent in Al-Najaf.

In both urban and rural areas, households with young household heads are worse off; the majority in this category, both in the countryside and in the city, have unimproved toilet facilities. One reason for this may be that households with young household heads live in dwellings that have been built during the last ten years. During this period, the development of infrastructure has suffered under the difficult situation in Iraq, and this may be reflected in the unsatisfactory toilet facilities in newer housing. Income seems to only have a rather small effect on improved sanitation.

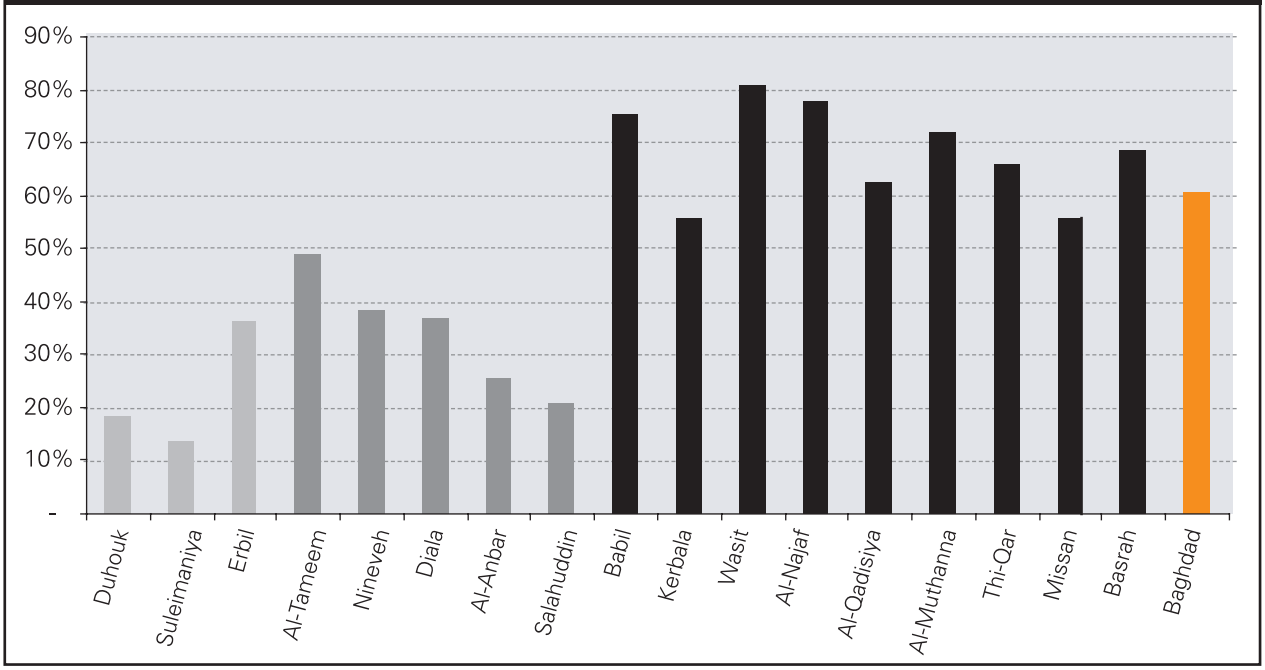
Urban households are connected to sewage systems, but the connection is unstable

Connection to the public sewage system or to a septic system is categorized by the UN definition as an improved technology for sanitation. But just as important as whether or not a household is connected to a sewage system is whether this system works properly. There have been several reports of problems with old and destroyed sewage networks in Iraq, which may lead to seeping of sewage into the ground and result in the contamination of drinking water systems. Below, is a closer look at the number of households that are connected to sewage systems and to what extent these networks are functioning properly.

A total of 37 percent of all dwellings in Iraq are connected to a sewage system, most of which are households in the urban areas of the country. Only three percent of all rural households have a sewage connection, compared to 47 percent of urban households. There is also a large variation between governorates: 79 percent of all households in Baghdad are connected, versus only 3 percent of all households in Diala.

Looking at the functioning of these sewage networks, as evaluated by those connected to them, we find clear patterns among different regions. Figure 6 shows the percentage of connected households in each governorate that report having frequent or constant problems with their sewage connection.

Figure 6: Percentage of households with unstable sewage connection by governorate, N=all households with sewage connections



In the northern governorates, relatively few households experience problems with their sewage connection whereas in central parts of the country, more households report problems. It is clear, however, that the largest problems are in the southern regions, where more than 50 percent of households in each governorate, among those connected to sewage systems, report having frequent or even constant problems with their connection.

In the survey, interviewers were asked to record observations from the neighbourhoods around each household. One of the observations registered was the presence of sewage in the streets around the dwelling. The results show that 40 percent of urban and 33 percent of rural households live in neighbourhoods where sewage is observed in the streets. The high numbers bear witness to malfunctioned infrastructure and severe lack of maintenance.

Rural households are relatively better off in all regions but the north. The situation is serious in the urban areas of the south, where more than half of all urban households live in areas in which sewage is visible in the streets. It is also clear that households reporting problems with the functioning of their sewage connection live in neighbourhoods polluted with sewage.

Table 16 shows that 71 percent of urban households reporting problems with their sewage connection live in neighbourhoods with sewage in the streets.

Table 16: Percent of dwellings where sewage in the neighbourhood was observed by interviewers

		Sewage observed in streets around the household	
		Urban	Rural
Region	**Total**	**40**	**33**
	South	51	34
	Baghdad	38	5
	Centre	38	34
	North	26	56
		Sewage observed in streets around the household	
		Urban	Rural
Stability of connection	Few problems	15	12
	Frequent problems	41	37
	Always problems	71	34
	Not connected	48	33

4. Source: UNDP, 2003a, The Millennium Development Goals in Arab Countries, New York: United Nations Development Programme.
5. Results given as percentage of the population is given in the ILCS Socio-Economic Atlas

Quality of Sanitation has declined

The figures for improved sanitation, presented above, diverge largely from previously presented data for Iraq taken from UNDP's "The Millennium Development Goals in Arab Countries", where more than 90 percent of urban households were recorded as having improved sanitation. Comparisons of the results show a steep deterioration in the sanitary situation in Iraq. The alarming numbers show a reverse development in quality of Iraqi sewage systems.

Nevertheless, one should keep open the possibility that the reason for these differences may also be linked to the different ways of defining "improved" sanitation, even though the given standard is said to be common in the different surveys.

Table 17: Percentage of urban households with improved sanitation compared to other research

Jordan[4]	100%
Syria[4]	97%
Lebanon[4]	100%
Saudi Arabia[4]	100%
West Bank and Gaza[4]	100%
Iraq (UNDP 2003)[4]	93%
Iraq ILCS	66%

As seen from Table 17, improved sanitation in urban areas of Iraq has dropped from almost full coverage (UN Habitat, 2003) to 66 percent. Compared to other countries in the region, the numbers for Iraq are very low. One should note that the results from the ILCS presented in this chapter are given as percent of households, whereas results in the UN Habitat report are presented as percentage of population[5].

Housing

Owning a house is a form of social security and an investment for the future. Home ownership has status implications (giving the impression of one's success and ability to provide for one's family), but can also be intricately tied up with the future security of the family. The following section examines the different types of housing and ownership found in Iraq. Attention will also be given to households' perception of the neighbourhood, mahalla, and the environment in which they live.

In the last part of this chapter, special focus will be given to damages done to dwellings during times of war.

Type of dwelling

The following types of living quarters/dwellings were registered: apartments; dar (housh), the traditional small house found in large parts of the Middle East; mushtamal dwellings, with separate entrances on the first floor; and tents, huts, or barracks. Findings

indicate different types of housing in the urban and rural areas of Iraq. The figures below will thus be divided into urban and rural sections.

Urban housing

Figure 7 illustrates the different types of housing in urban areas across different regions in Iraq. As shown in the lowermost bar, "Total urban", the overwhelming majority of urban Iraqis live in dars. More people live in apartments in the urban parts of Baghdad; villas are more common in the north; and 12 percent of all urban households in the central region of Iraq live in mushtamals.

Within urban households, no one reported living in improvised squatter housing like huts, barracks, or tents, which are often found in poor urban areas of many developing countries. This finding is reinforced by the findings regarding construction material used in urban dwellings – more than 95 percent of the country's dwellings were constructed from permanent material such as cut-stone, blocks, bricks, cement, or concrete.

Rural housing

Figure 8 illustrates different types of housing in rural areas of Iraq, across different regions. Similar to the urban areas, the most common type of dwelling is the traditional dar (housh), followed by mushtamal and villas in the north. The number of households living in apartment buildings is much lower in rural areas than in urban, and there is a small but significant group of households living in temporary housing. No households reported to be living in tents, though this must be considered taking into account the omission of nomads from the sample.

The distribution of types of dwellings is rather similar across different governorates, but there are some findings that stand out. In the southern

Figure 7: Type of dwelling in urban areas

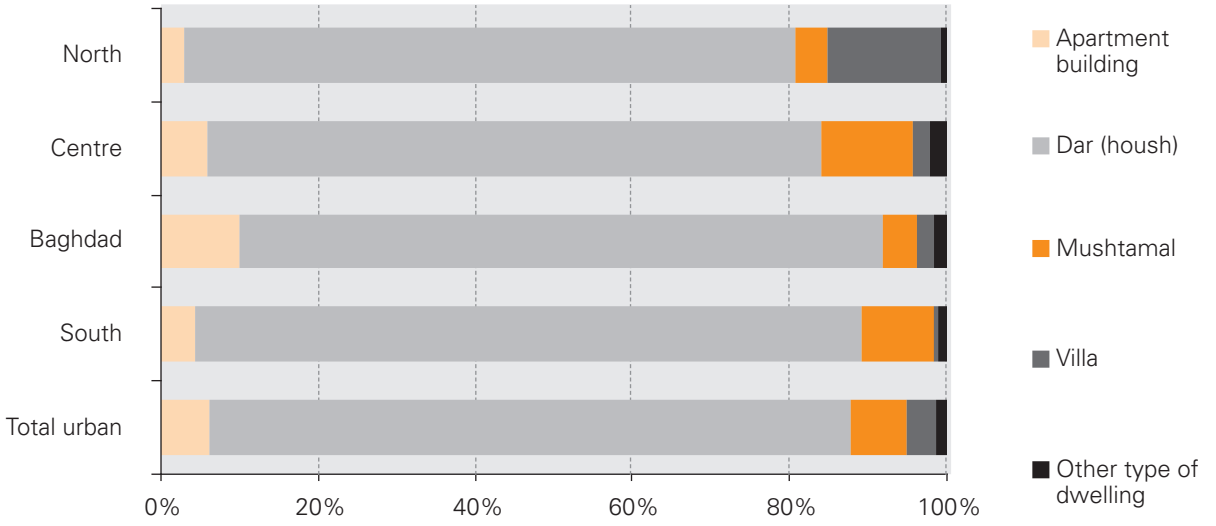
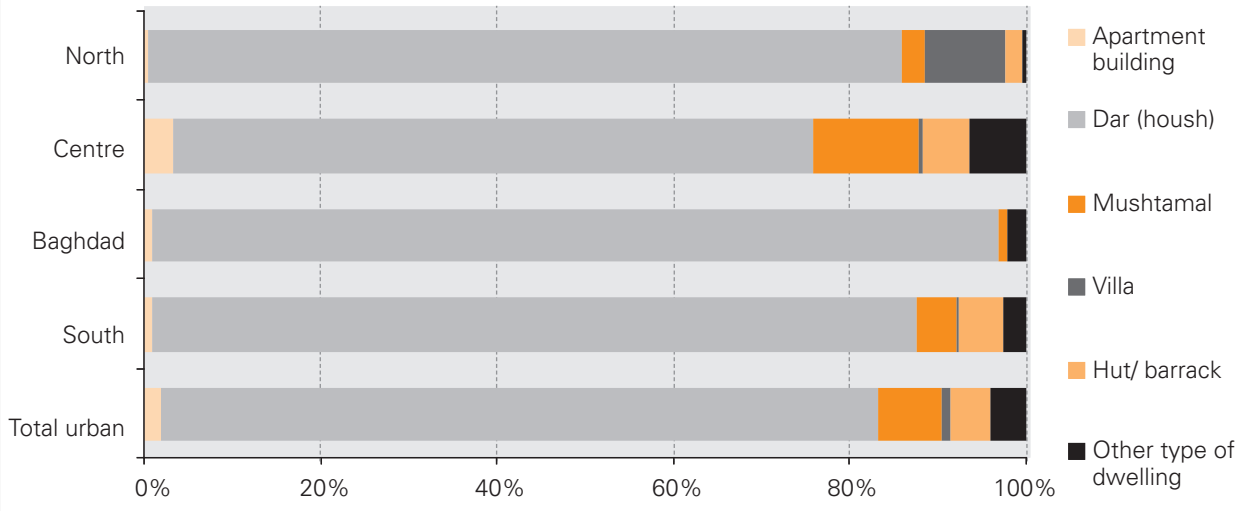


Figure 8: Type of dwelling in rural areas



governorates of Wasit and Missan, 28 percent and 10 percent of rural households respectively live in temporary housing, indicating unsatisfactory housing conditions. The situation in the central governorate of Nineveh also looks unsatisfactory; 14 percent of rural households live in huts or barracks, and 20 percent of rural households indicate that they have some form of other housing.

Tenure

Home ownership is important for social security, and is widespread in the Iraqi society. As shown in Table 18, an average of 76 percent of all dwellings are owned by the households inhabiting them. This is particularly the case in rural areas and in the southern and central regions of the country. In the northern region and in Baghdad, higher numbers of households rent their dwellings, and there are somewhat higher numbers of squatters and households borrowing dwellings without paying rent in the north. Some reasons for this may be the special conditions that have applied to Kurdish regions through modern Iraqi history, specifically restrictions of ownership and internal displacement of certain groups.

With regards to differences in ownership and tenure of dwellings among the varying socio-economic groups, there are no substantial differences, although there is a significant tendency for higher income groups to rent their dwelling and poorer households to either own or squat in dwellings.

Table 19 shows that owning one's dwelling is most common when the dwelling is a dar (housh), mushtamal, villa, or hut/barrack, whereas renting is most common for apartment buildings. The highest percentage of squatting is found in the category, "other types of dwellings".

Quality of housing, dwelling and environment

The average size of households living within one dwelling in Iraq is 6.62. The number varies between urban and rural areas, with the mean household size in urban areas being 6.3, and 7.32 in rural areas. In general, rural households have one more household member living in the dwelling than urban households.

Table 18: Ownership and tenure of housing in Iraq

	Owned by household (even if have debts)	Squatter	Rented	Borrowed without paying	Un-weighted n	Total number (<000)
Total	**76**	**7**	**15**	**2**	**21,626**	**4,250**
Rural	88	7	3	2	6,794	965
Urban	73	6	18	3	14,832	3,285
South	80	5	12	2	9,835	1,484
Baghdad	73	7	18	2	3,262	1,145
Centre	81	6	12	1	5,387	1,015
North	65	9	20	6	3,142	606

Table 19: Type of tenure by income and type of dwelling

		Owned by household (even if have debts)	Squatter	Rented	Borrowed without paying	Un-weighted n	Total number (<000)
Total		**76**	**7**	**15**	**2**	**21,626**	**4,250**
Income 2003 per capita - quintiles	Lowest income	79	7	12	2	4,355	807
	Low income	78	7	13	2	4,197	820
	Medium income	76	6	16	3	4,057	805
	High income	76	7	15	2	3,946	794
	Highest income	74	6	17	3	4,137	841
Type of dwelling	Apartment building	42	9	46	3	966	226
	Dar (housh)	78	6	14	2	17,697	3,453
	Mushtamal	83	5	10	3	1,638	307
	Villa	81	8	10	1	504	127
	Hut/ barrack	88	4	5	3	376	50
	Other type of dwelling	64	20	12	4	435	86

Whether owners or renters, many families have to put up with crowded living conditions to stay in houses they can afford. In the ILCS, housing space was measured by the number of rooms rather than square meters. By this 'social' measure of space, apartments and dar housings are very similar in size, with a median number of four rooms per dwelling. Mushtamals and villas are larger, with a median of five rooms per dwelling. Huts and barracks have a median of three rooms.

One in ten households are overcrowded

A more important indicator than the number of rooms in a dwelling is the number of people sharing the living space. The ILCS defines overcrowding as a dwelling with more than three persons per room. This is in accordance with the standard definition used by UN Habitat and other agencies[6].

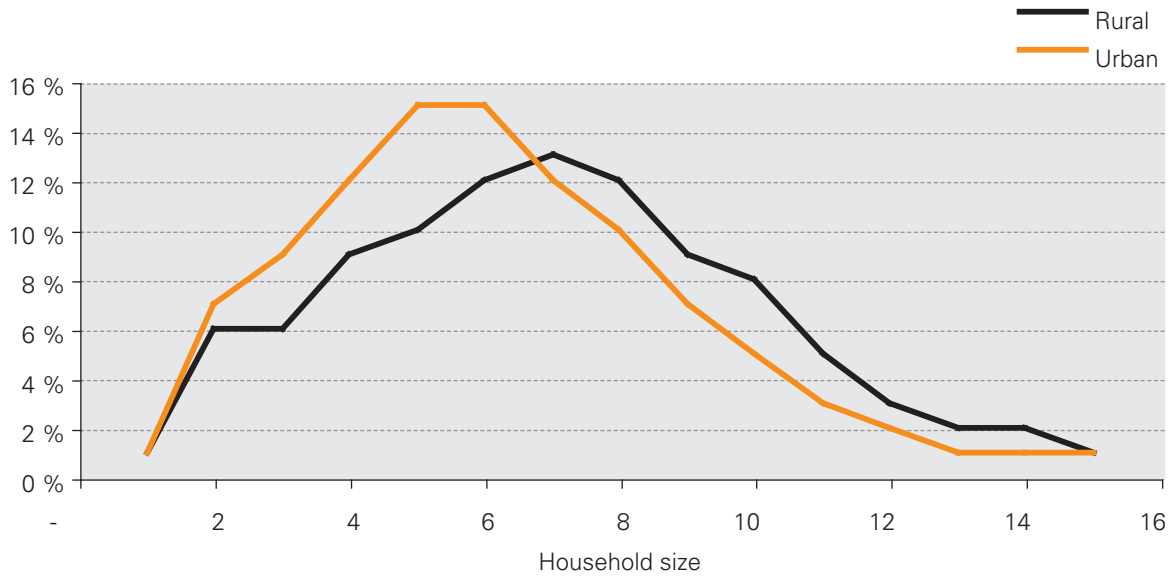
Ten percent of all households in Iraq experience overcrowding in their dwelling, with a clear distinction between rural and urban areas. In rural areas, 16 percent of households are overcrowded, versus 7 percent of the households in urban areas

Most overcrowding is found in rural areas with 25 and 20 percent, respectively, in the northern governorates of Dahouk and Sulaimaniya, 24 percent in the rural parts of the central governorate of Nineveh and the five southern governorates of Babil (22 percent), Kerbala, Al-Najaf, and Al-Qadissiya (all with 21percent), and Al-Muthanna (with as much as 32 percent overcrowding). At the other end of the spectrum, urban Baghdad has only 4 percent overcrowding.

There is a clear link between overcrowding in dwellings and socio-economic standards. Poor households, households where the head of household has little or no education, and households with children under five years of age are much more likely to live in overcrowded conditions than other households. This is the case in both urban and rural areas of Iraq.

There are differences with regards to overcrowding and the dwelling type. Fifteen percent of all rural households living in dars suffer problems of overcrowding as compared to three percent of villa dwellers. In both urban and rural areas, households living in temporary structures such as huts and barracks have a much higher probability of overcrowding.

Figure 9: Household size by urban-rural location



6. Overcrowding can also be defined with reference to square meters per person in the dwelling.

Figure 10: Percentage of crowded households in urban and rural areas of the Iraqi governorates

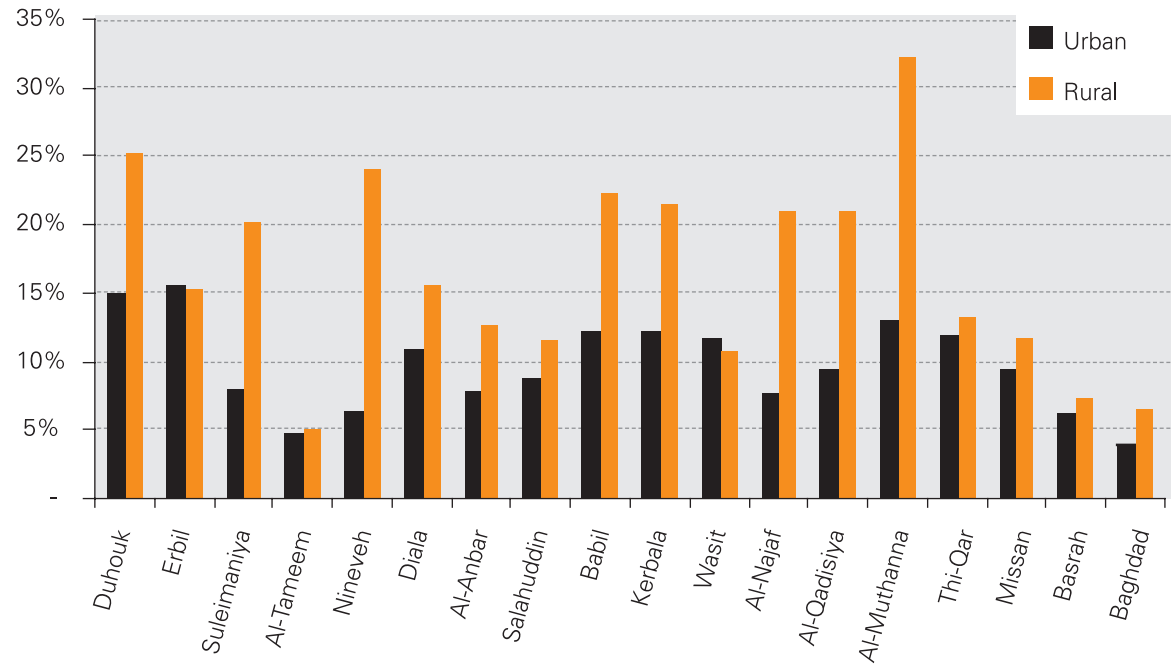


Table 20: Percentage of overcrowding in different types of dwelling by urban-rural

	Urban	Rural
Apartment building	5	10
Dar (houshold)	8	15
Mushtamal	7	13
Villa	3	3
Hut/ barrack	43	30
Other type of dwelling	11	29

High degree of dissatisfaction with living space and cost

Figure 11 illustrates the degree of satisfaction reported for five specific measures of housing quality. The general pattern shows that more than 60 percent of households find their housing quality acceptable or better on any one measure. Still, that leaves a relatively large group of households "rather dissatisfied" or "very dissatisfied" with their housing quality. The distribution of dissatisfied households is rather equal across different socio-economic measures and across different regional groups within Iraq, but there are some differences that will be explored further.

Two of the most important factors for satisfactory living conditions – living space and housing costs – get the lowest approval ratings: 37 percent of all households in Iraq say they are rather or very dissatisfied with the size of their current dwelling. The concern about space should be seen in connection to the above numbers presented for overcrowding. Dissatisfaction with living space was expressed by 56 percent of households living in overcrowded dwellings, compared to 34 percent of households not living in overcrowded dwellings.

The least satisfied households with regards to space are found in Baghdad and in the northern governorates of Iraq; an average of 45 percent of all households in these areas report dissatisfaction with their access to living space. Urban households are unhappier than rural households, and apartment dwellers see their situation as most unsatisfactory. Three governorates stand out as having more dissatisfied citizens with regard to living space: 56 percent in Sulaimaniya, and 45 percent in Baghdad and Al-Najaf. These are all governorates with a high degree of urbanization.

Looking at housing costs, dissatisfaction is somewhat lower in rural areas, and evidently there is a real

difference between geographical regions. More people in the north express a substantially higher dissatisfaction with housing costs than others: 45 percent of northern households characterize their housing costs as rather or very unsatisfactory.

Households in the governorate of Sulaimaniya again express high degrees of dissatisfaction, with 58 percent of all households finding housing costs too high. High degrees of dissatisfaction with housing costs are also found in 51 percent of all households residing in the southern governorate of Kerbala. There are no strong trends across socio-economic groups; although as expected, comparatively poorer households and households with little education more often find that they pay too much for housing. Poor and low-educated households are expected to spend relatively more of their income on housing in an already tight financial situation. Households that rent their dwelling are unhappier with their housing costs than those who own their dwellings.

For the remaining measures of satisfaction with the dwelling, similar distributions are found. An average 12 percent of all households are very unhappy about the indoor environment, noise, and privacy. The greatest concern for privacy is in the urban areas, and particularly in Baghdad, where 35 percent of all households are unhappy about their privacy. Among other governorates, Basrah stands out, with 40 percent of all households as unsatisfied with their level of privacy. Low-income groups express somewhat higher dissatisfaction with privacy in their housing, a finding that reflects the higher amount of crowding within this group. The problem of noise is mainly confined to urban areas.

If noise is a problem in the cities, more rural households report that they are dissatisfied with the indoor environment in their dwelling. There is also variation according to the economic status of the households, whereby poorer households more often report such problems. As might be expected, households living in emporary dwellings such as huts or barracks report more problems with their indoor environment.

Dissatisfaction with the environment

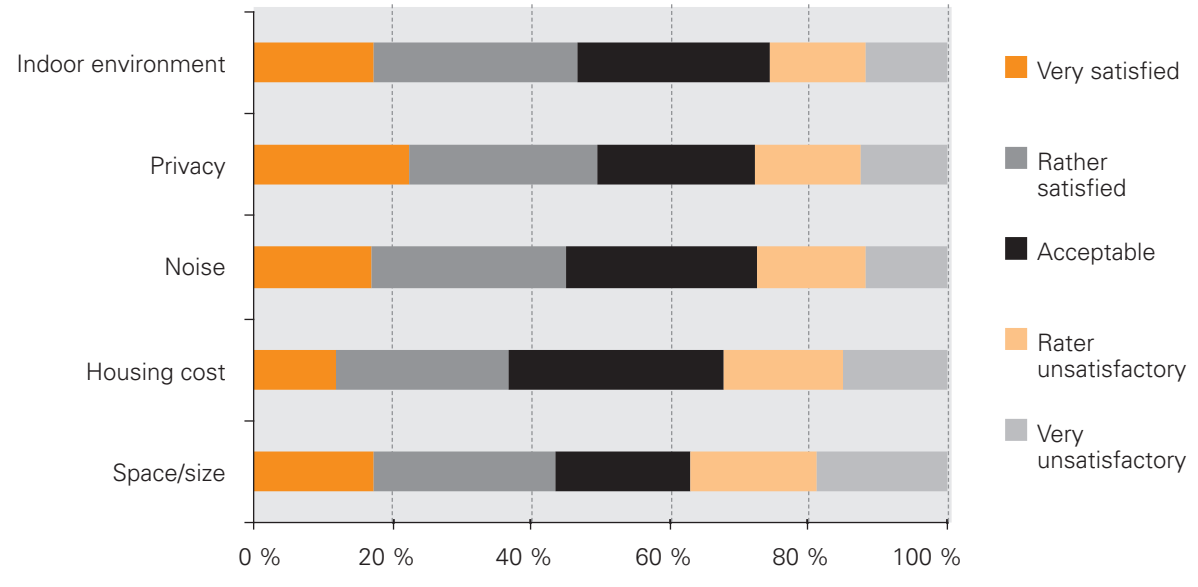
It is not only the indoor environment of a dwelling that is important for people's satisfaction with their housing conditions; the environment in the vicinity of the dwelling is also important. Can children go out to play safely; are the surroundings clean and well maintained? Respondents were asked to express their satisfaction with their neighbourhood's safety for children, level of pollution, and outdoor cleanliness.

In total, 34 percent of Iraqi households were unhappy about the safety of their children within their neighbourhood. As one might expect, the feeling of insecurity is more often expressed by urban than rural households. Whereas 39 percent of all urban households fear for the safety of their children, "only" 22 percent of rural households do.

The general security situation in Iraq is special, and it must be considered that, at the time of writing (November 2004), the situation had deteriorated from the date of interviewing (April/May 2004). During fieldwork, households in the governorates of Baghdad, Kerbala, and Al-Muthanna expressed serious concerns about security issues. It must be expected that these perceptions of security will change as different events take place.

Concern about the environment seems to be high in Iraq. Describing their outdoor environment and the cleanliness of their neighbourhood, an average of 57 percent of all Iraqi households indicated that they were very or rather unsatisfied. The highest degree of dissatisfaction is in the south and in Baghdad, with two

Figure 11: Degree of satisfaction with main aspects of the dwelling



out of three households in both regions expressing dissatisfaction. Figure 12 illustrates the environmental concern in each governorate. Some of the reasons for the higher levels of concern in the south and Baghdad may be attributed to high population density and high degrees of urbanization in these areas. Furthermore, analyses presented earlier in the chapter confirm that these areas have large problems with the functioning of sewage systems.

The degree of concern for the environment is not linked to socio-economic groups, although there is somewhat less concern among high-income and educated groups, who generally live in more upscale neighbourhoods.

Proximity to friends and family

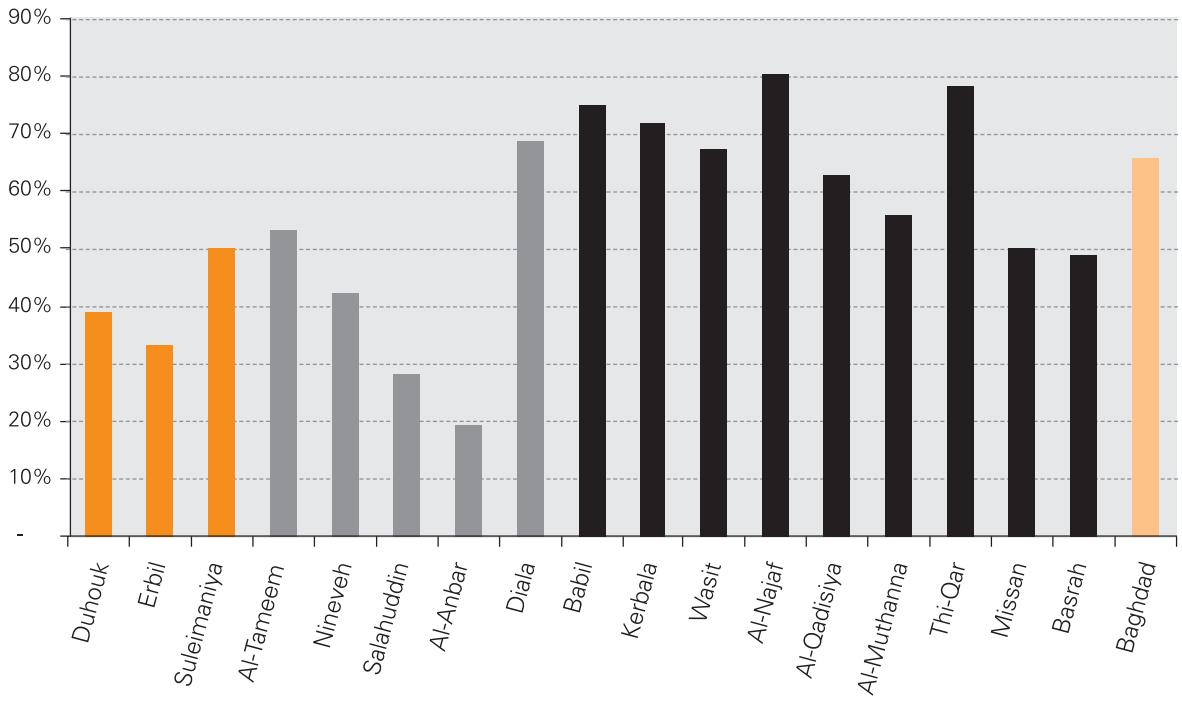
It is not just the physical characteristics that are important features of a household's neighbourhood, or mahalla. Traditionally, social life in Iraq is tied to family and clan relations, and social networks are often centered around the mahalla. Distance to friends, relatives, and family are important factors for quality of life and the ability to seek advice and share experiences. This maybe even more so for women, since only 13 percent of women in Iraq are part of the labour force (see chapter on labour). Respondents were asked to indicate whether there were other members of the household's clan living in the same mahalla, so as to indicate their proximity to their family and social networks based on clan or relatives. As expected, the traditional pattern of dwelling is more common in the rural areas in Iraq, where 85 percent of households – versus 45 percent in urban areas – indicated that there were several other members of their clan living nearby. When asked about the satisfaction with distance to relatives, the same picture appears: In urban areas, 22 percent of households indicate dissatisfaction with the distance to their family and relatives, which is only the case for eight percent of all rural households. Only five percent of rural households are unhappy with the distance between them and their friends, whereas this is the case for 13 percent of households residing in urban areas.

Damage to dwelling and state of repairs

In the course of several intra- and inter-state wars over the last 20 years, people's housing facilities have been damaged. In the ILCS, households were asked to indicate damage to their current dwelling, and the cause of this damage. It should, however, be carefully noted that the survey does not measure the damage done to dwellings in which the responding household no longer lives. This may lead to an under-reporting of damaged dwellings in Iraq. It is also important to emphasize that the damage done to the dwelling is not restricted to the most recent war initiated in March 2003; damages may also stem from earlier conflicts and post-conflict looting.

The situation in Iraq is changing rapidly. The survey was done during the months of April and May 2004. Since then, clashes between coalition forces and insurgents have increased in frequency in several parts of the country. These clashes must be expected to have caused additional material damage.

Figure 12: Dissatisfaction with outdoor environment, by governorate (in percent of all households)



At the time of the survey, an average of five percent of all households in Iraq had experienced damage to their current dwelling due to military activity - on average, five percent of urban and three percent of rural dwellings. Another six percent of all households in both urban and rural areas reside in dwellings suffering damage from other causes, such as lack of maintenance. There are also a small number of households that report damage to their dwellings caused by looting.

Although the average level of military destruction to dwellings is rather low, there are substantial differences across regions and between urban and rural areas within these regions, as illustrated in Figure 13.

The military damage to dwellings is higher in the northern regions of Iraq than in any other regions of the country. As many as 25 percent of all rural households report damage to their current dwelling caused by military activity, whereas reports from urban areas show a figure of 7 percent. Within the northern governorates, Sulaimaniya stands out as suffering most from these damages - a staggering 49 percent of all rural and 12 percent of urban households reported military damages to their current residence.

In other regions of Iraq, military damage to dwellings is more often seen in urban than rural areas. In the southern governorates of Al-Najaf and Al-Muthanna, one in ten urban dwellings were damaged from military activity, whereas only four percent and two percent of Al-Najaf's rural and urban residences respectively were damaged. Although the central region of Iraq, on average, has the least damage to current dwellings, the governorate of Al-Anbar reports military damage to 12 percent of its urban and 10 percent of its rural dwellings.

From the findings in the ILCS, it seems that many households in the north still reside in dwellings marked by the previous armed conflicts. In the rest of the country, destruction seems to be less, and is somewhat more concentrated in areas where fighting is known to have occurred recently, such as in Al-Najaf and along the main roads to Baghdad through Al-Muthanna.

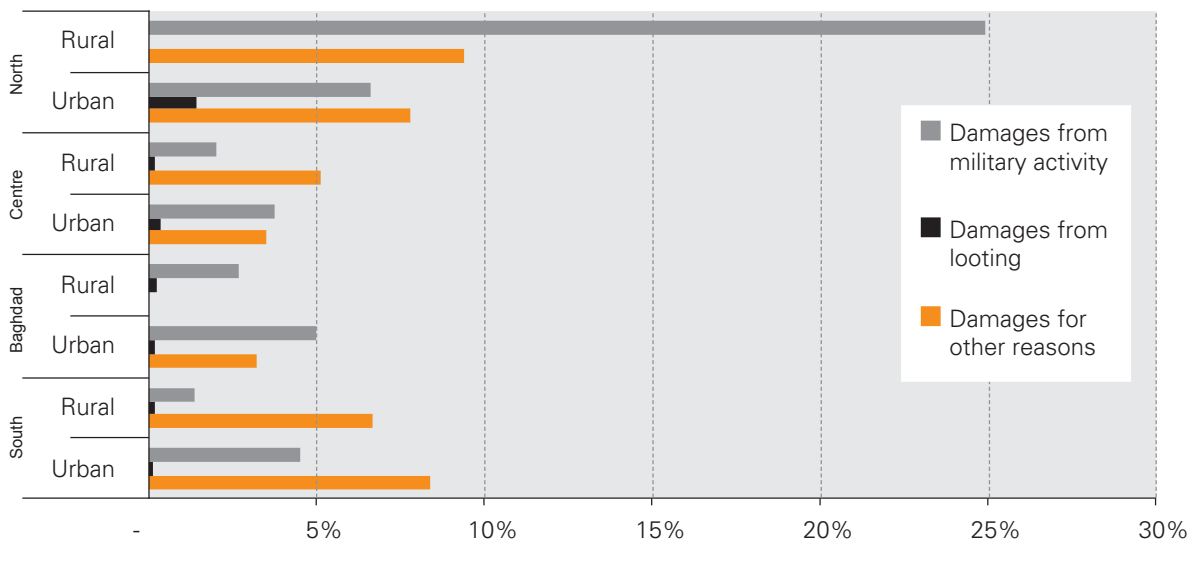
Three in four households that live with damages to their dwellings said they had no plans to start repairs. This was particularly the case for households living in dwellings suffering damage not caused by military actions (83 percent). Out of households with damage to their dwellings caused by military activity, 37 percent had either already begun upgrading their dwellings or had plans to start repairs. As might be expected, households with higher income are more likely to have started repairs to their damaged dwellings than low-income households.

The most common reason, by far, for households not to repair damages is lack of money: 90 percent of households with no plans to start repairs of their dwelling cite financial difficulties as the main reason. Damage to one's dwelling caused by military activity may happen to anyone, but poor and more vulnerable groups have more difficulty rebuilding what has been destroyed.

Few move in difficult times

Most people change their living quarters several times over a lifetime. Moves can be due to life-cycle changes over time, as young people marry and establish new households or move into larger dwellings to make room for children. Other moves are part of a career path, in which individuals and their families move to obtain higher education or change jobs. Moves can also be motivated by the wish to reunite family and relatives, or return to a place where one was forced

Figure 13: Damage to dwelling by regions, area and type of damage



to leave at an earlier stage in life (due to internal displacement).

Moves since December 2002

Seven percent of all Iraqi households have moved since December 2002. Analysis reveals that, in relative terms, more urban than rural households have relocated. It has also been found that there are more moves in the northern region of the country: 19 percent of households in Sulaimaniya, 16 percent of households in Dahouk, and 12 percent of households in Erbil have changed their residence since December 2002. Only the southern governorate of Kerbala has similar numbers, with 15 percent of urban households having moved.

When asked about the main reason for moving, 20 percent of the households that moved said that their previous dwelling was too small, 19 percent said it was too expensive, 13 percent wanted to own their dwelling (they did not own their own dwelling in December 2002), 15 percent were evicted from their previous dwelling, and 15 percent gave other reasons for moving. Evictions were more common among rural households (19 percent of rural movers were evicted), and are also the most important reason for changing residence in the southern governorate of Kerbala (24 percent) and among households with a female head (23 percent).

Compared to Jordan, where 19 percent plan to move in the next two years (Fafo 1998), Iraqi households seldom move. This may be due to the rather restricted possibilities for movement, both geographically and socially, during difficult times under the regime of Saddam Hussein and during the sanctions imposed on Iraq during the 1990s. One should also note the difficulties of comparing plans to move and actual moves, households may plan to move, but these plans may not materialize in fact.

Access to services

It is important that households can reach essential services such as schools, health facilities, police stations, post offices, and places of worship without spending too much time getting there. In the ILCS, respondents were given a list of services and were asked which ones they could reach within 30 minutes via normal means of transportation. The measure of 30 minutes by normal transportation was chosen to accommodate all groups of respondents, whether or not they had access to a car.

Figure 14 shows that most households can reach services to fulfill their physical and spiritual needs within 30 minutes from the household: Nine in ten households are near a primary school and a place of worship. Easy access to primary schools and mosques is found in both urban and rural households.

Nonetheless, the urban-rural dimension is, as might be expected, what varies the most between households' access to other services. The percentage of households able to reach the aforementioned facilities within thirty minutes drops substantially in rural as compared with urban areas. As seen in Figure 14, more than 80 percent of urban households are able to reach secondary schools, health centres, pharmacies, and police stations within the given time limit. This is not the case for rural households: Only 70 percent have access to secondary schools and health centres within a reasonable distance from the dwelling, and only 60 percent can reach a pharmacy or police station within 30 minutes.

Services such as post offices and public and private hospitals are generally less accessible to the Iraqi population, yet it is worth mentioning that the overall access to services in Iraq is rather good. An average of 45 percent of the population can reach all of the aforementioned services within 30 minutes.

Table 21: Plans to repair damage to dwelling of households due to military or other damage, in percent

		Started repairs	Plans to startrepairs	No plans to start repairing	Total
Cause of damage	**Total**	**16**	**10**	**75**	**100**
	Damages from military activity	28	9	63	100
	Damages for other reasons	6	11	83	100

Table 22: Percentage of households moved since Dec. 2002, across Iraqi regions and areas

	Current dwelling was residence in Dec 2002	Current dwelling was not residence in Dec 2002	Total %	Un-weighted n	Total number (<000)
Total	**93**	**7**	**100**	**21,634**	**4,252**
Rural	96	4	100	6,798	966
Urban	92	8	100	14,836	3,286
South	95	5	100	9,839	1,485
Baghdad	94	6	100	3,261	1,144
Centre	93	7	100	5,392	1,016
North	85	15	100	3,142	606

Nevertheless, the largest obstacle to being able to reach a variety of services is the location of households in rural areas, as is the case in many other countries around the world. Below, a closer analysis of some of the most important services is presented. Because accessibility to services is most difficult in rural areas, the analysis will look at how access is distributed among rural groups in the different governorates.

Primary education more accessible than secondary education

Access to basic education in the form of primary schools is well covered for the rural populations in most of the governorates: Only in the central governorate of Salahuddin and the southern governorates of Babil, Al-Najaf, Al-Qadisiya, and Al-Muthanna do less than 90 percent of the rural population have access to these facilities within 30 minutes.

The situation is somewhat different for secondary education. As shown in Figure 15, most governorates do not reach more than 80 percent coverage for their rural population. The situation is particularly difficult in the governorates of Al-Muthanna, Babil, and Sulaimaniya where 63, 41, and 50 percent, respectively, of the rural population live too far to reach secondary school within 30 minutes.

Analysis presented in the education chapter of this report suggests that the distance to secondary schools is one of the reasons for low enrolment rates, particularly in the southern governorates and for girls, whose respective household may hesitate to send away from home for schooling.

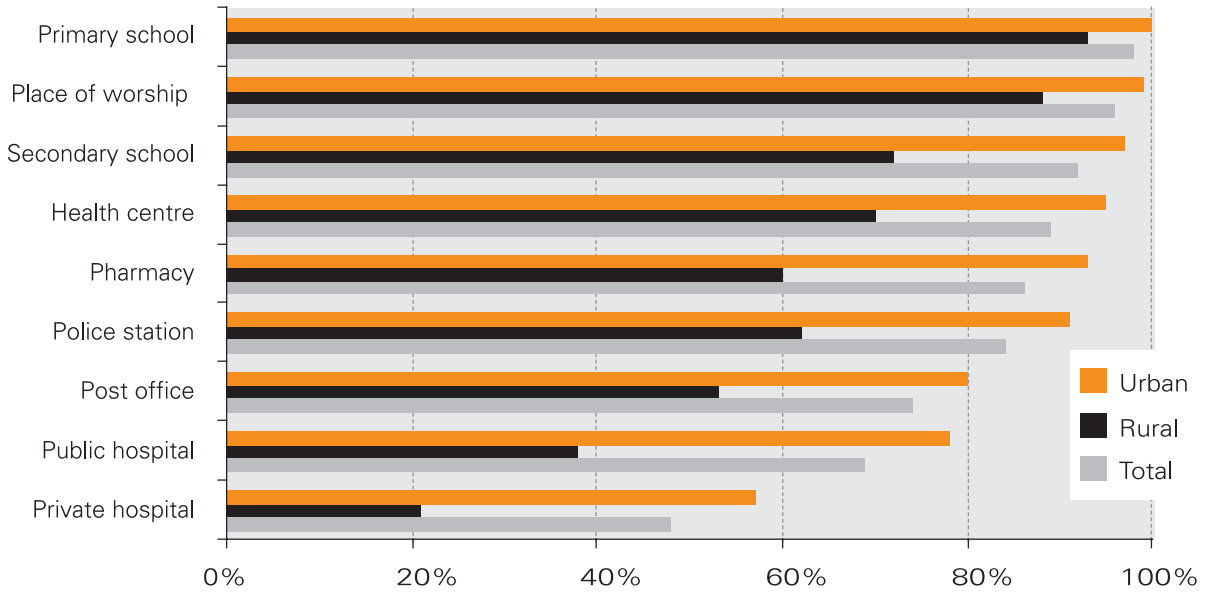
Rural access to primary health facilities lacking

Health coverage in Iraq is high compared to other countries in the region. Data from Jordan (Dury and Abu Sharar 1998) shows that an average of 58 percent of all households have easy access to health centres in their neighbourhood[7]; in Iraq, equivalent coverage of health centres reaches an average of 89 percent. Pharmacies are within the reach of 86 percent of Iraqi households, and 69 percent can reach a public hospital within 30 minutes from their dwelling. As can be seen from Table 23, there are significant differences between urban and rural areas of the country and between different regions.

Table 23: Percentage of households able to reach health facilities within 30 minutes

	Public hospital	Health centre	Pharmacy
Total	**69**	**89**	**86**
Rural	38	70	60
Urban	78	95	93
South	75	88	84
Baghdad	70	95	97
Centre	58	87	80
North	70	84	79

Figure 14: Percentage of households with access to local services within 30 minutes



7. Note that the numbers may be somewhat difficult to compare directly, the data from Jordan are measured in "walking distance from a household's dwelling"

Figure 15: Primary and secondary school not accessible within 30 minutes by normal means of transportation. In percentage of rural households

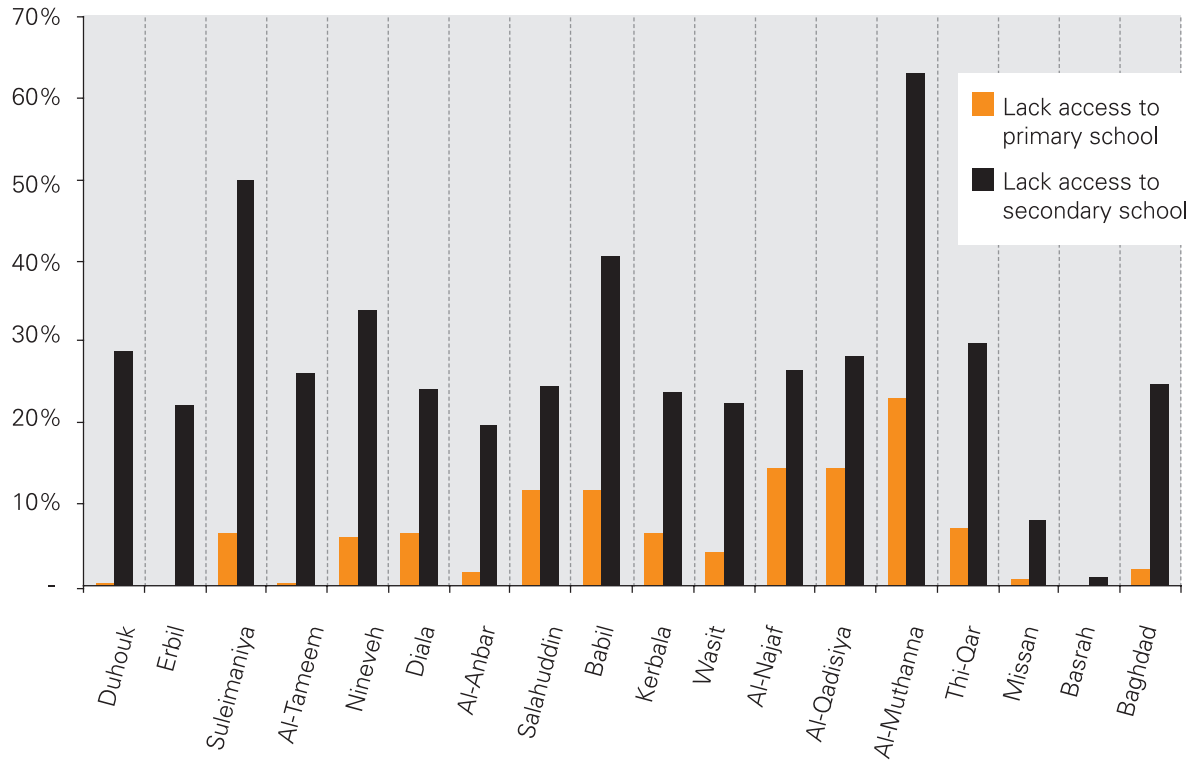
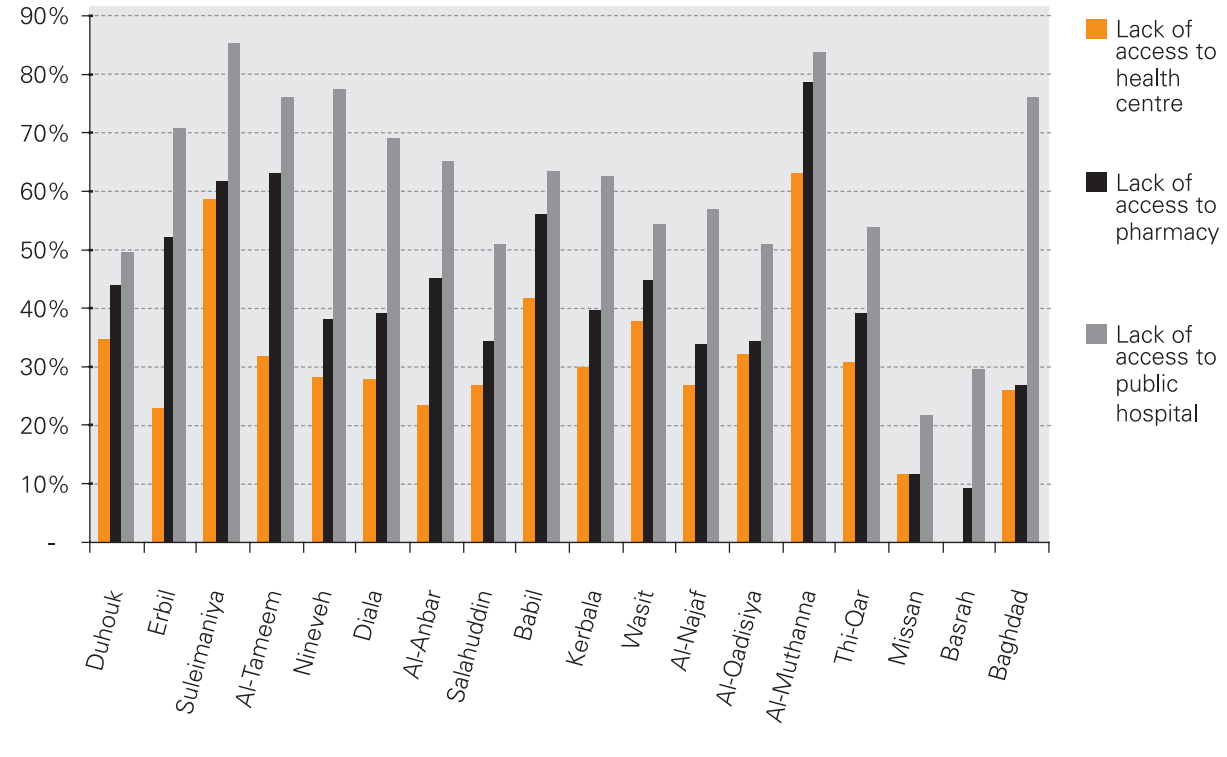


Figure 16: Health services not accessible within 30 minutes by normal means of transportation. (in percent of rural households)



Most urban households can reach the different health facilities within the given time limit; the problem of access to health care facilities is seen in the rural areas. The analysis below will concentrate on the different health facilities and the distribution of coverage within governorates and areas, starting with health centres. Since the problem of access is mostly restricted to rural areas, the main focus of analysis will be directed to these areas.

Health centres

Being the primary unit of health care, health centres are important, among other reasons, for the health of women and children. Easy access to these facilities provides better opportunities for frequent checks and the monitoring of children's health. As mentioned above, the majority of households in the urban and rural areas of all regions have access to these services within the set 30 minutes limit. Still, there are substantial differences between urban and rural areas, ranging from close to full coverage (95 percent) in urban areas to 70 percent in rural areas.

Across governorates, two stand out with considerably lower coverage for rural populations. In the southern governorate of Al-Muthanna, only 37 percent of rural households are able to reach a health centre within 30 minutes; in the northern governorate of Sulaimaniya only 41 percent of rural households have easy access to health centres. Poor access to health centres can only partly be explained by the fact that households with low income can not afford means of transportation. Low-income households have less access to health centres, but the differences between income groups in rural areas only reach about five percent.

Public hospitals

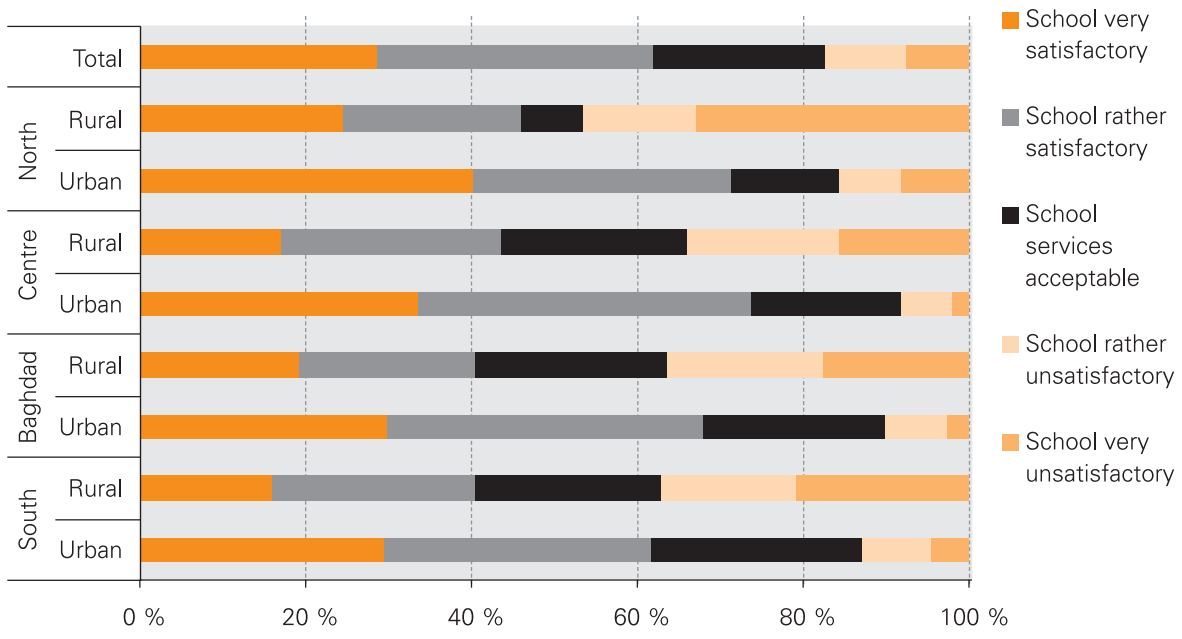
The average easy access to public hospitals in urban areas is 78 percent; only in the governorate of Al-Tameem does the urban coverage of public hospitals drop to a level under 60 percent. This indicates a good coverage of public hospitals in urban, densely populated areas.

The situation in rural areas is substantially more worrying: The average coverage for rural households is 38 percent and, in some governorates, such as Al-Muthanna and Sulaimaniya (Figure 16), less than 20 percent of the rural population can reach public hospitals in less than 30 minutes from their dwelling. Economic status influences whether the household has easy access to public hospitals: 42 percent of all rural households with high income have such access, versus only 32 percent of households in the lowest income group.

Pharmacies

The last health facility to be examined is pharmacies, which are important because they are where many households get their supply of medication, and in some cases, where medical advice is given and minor illnesses are treated. A full 93 percent of all urban households can reach a pharmacy in less than 30 minutes from their dwelling; such good coverage being common for all governorates. In rural and more sparsely populated areas, the average coverage for pharmacies is 60 percent, which is still interpreted as rather good coverage. Once again, however, it is found that residents of Al-Muthanna and Sulaimaniya – and, additionally, Al-Tameem – are at the bottom of the ranking: More than 40 percent of their rural

Figure 17: Satisfaction with schools in the respondent's neighbourhood



populations are unable to reach a pharmacy within 30 minutes from their dwelling.

There are minor differences between socio-economic groups with regards to access to pharmacies, with somewhat better access for higher income households. However, the differences are small, and may be caused by the geographical location of the dwelling and higher access to cars and other means of transportation within these population groups.

To sum up, taking into account all services listed in Figure 14, it can be said that the coverage of basic day-to-day needs such as education, health and spiritual comfort are well covered within the neighbourhoods in Iraq. For the majority of the population – regardless of income, education, or family type – basic facilities are easily accessible. However, it is clear that the geographical location plays a significant role with regard to people's access to social services, barring some rural citizens from pursuing post-primary education and from receiving proper health care.

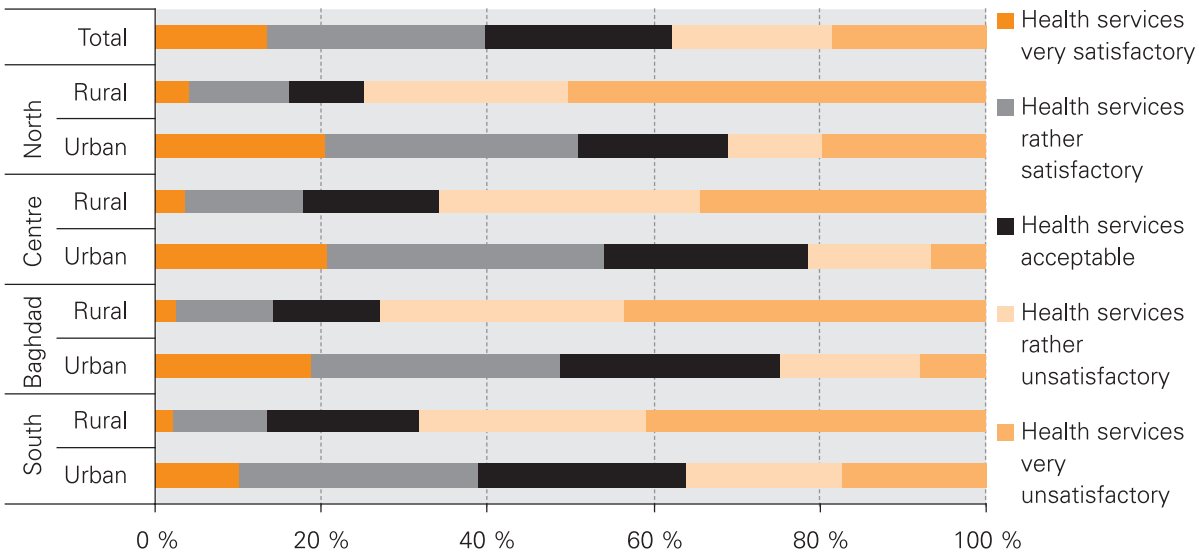
Though services are near, people are not satisfied

The ILCS did not measure the quality of public services, and therefore cannot comment about the standard of these services. Instead, people were asked to state their degree of satisfaction with schools and health services in their neighbourhood or mahalla. Findings indicate, as one might expect, that those with poor coverage of basic services are less satisfied with the services offered than those with improved services. As illustrated by Figure 17, in all regions rural households are relatively less satisfied with schools than urban households.

Generally, a lower level of satisfaction among all groups for health services than for schools was found. An average of 38 percent of all respondents thought that health services were rather or very unsatisfactory. As illustrated in Figure 18, the level of dissatisfaction was particularly high among rural households in all regions of the country, reaching as high as 68 percent.

Both the relatively low coverage for basic services, and the high degree of dissatisfaction in certain parts of the population, should be noted, as they indicate high levels of general dissatisfaction among the Iraqi population.

Figure 18: Satisfaction with health services in the respondent's neighbourhood



2. The Population of Iraq

Introduction

The population of Iraq shares a number of characteristics with the other countries in the Middle East: a recent history of rapid population growth — driven principally by high fertility rates coupled with comparatively low mortality rates—moderated by significant migration.

However, there are also particular traits testifying to the violent recent history of the country, which encompasses the effects of the Iran-Iraq war, the two Gulf wars, and internal strife. Specifically, because of the wars, the direction and importance of migration flows have been very variable.

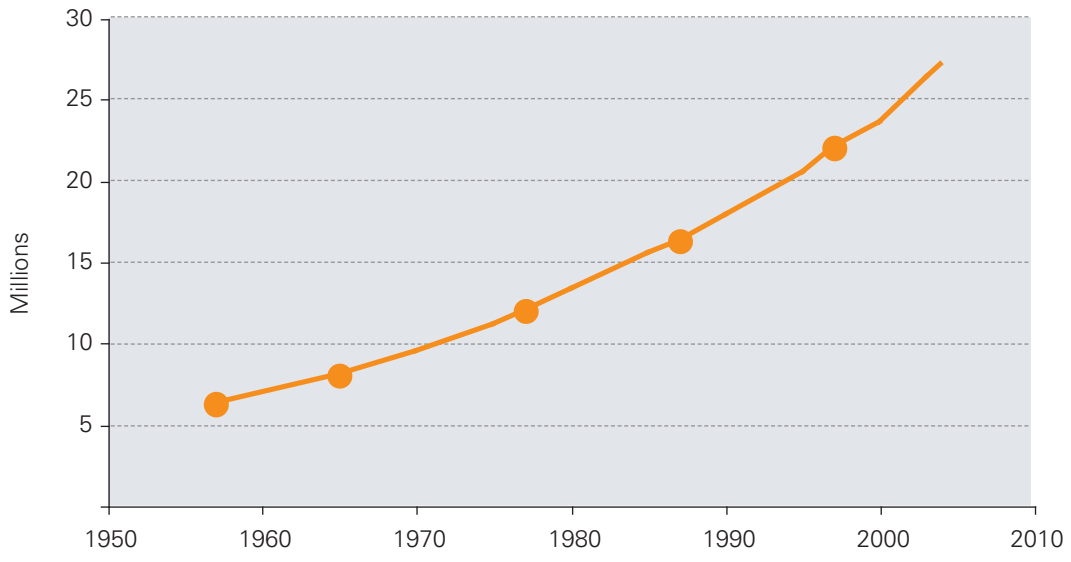
A notable issue, dealt with below, is how mortality rates, particularly infant and child mortality rates, have developed during the period after the first Gulf war.

Size and structure

Various estimates of the current population of Iraq exist. COSIT estimates the mid-year population of 2004 to be 27.1 million, with a smooth increase (Figure 19). Conversely, the United Nations Population Division (UNPD 2004) estimates the 2003 population to be approximately 1.6 million people lower than COSIT (CSO 2002), while the U.S. Census Bureau weighs in with slightly fewer than the UNPD (U.S. Census Bureau 2004). The ILCS cannot be easily used to reliably estimate the population size because of its dependence on the 1997 census as a sample frame.

All the estimates of population growth in Iraq show a lower growth rate during the period of the Iran-Iraq war (1980–1988). There is no consensus, in these figures or elsewhere, as to how many Iraqis perished in that war, and estimates vary widely from as low as 100,000 to around 800,000 (erols.com 2004 presents an illuminating overview of the divergent figures). In the absence of the war, one can assume that the population growth rates would have been stable during that period, instead of the drop shown in the various population estimates. Using this

Figure 19: The population of Iraq



Note: Census years are marked with circles. Source: CSO 2002.

assumption, one can calculate the implied number of missing persons from the population estimates of 1985 to 1987, in the cases of the U.S. Census Bureau and COSIT, and from 1985 to 1990, in the case of UNPD. Doing so, one arrives at 155,000, 247,000 and 494,000, respectively.

Thus, population estimates tend to underline the uncertainty about the losses from the Iran-Iraq war. Similarly, the possible post-1991 surplus mortality of children appears to have been entered into the population estimates of the U.S. Census Bureau, but not other sources.

Young population, gender balance marked by war and migration

The age and gender structure of the Iraqi population is typical of a population with a history of high fertility. It is broadly based, with many children relative to adults: 39 percent of the population is aged less than 15 years. Nevertheless, the pyramid also shows signs of an incipient fertility decline. Thus, there are indications that the 0-4 age group has started to decrease, although it is not yet smaller than the age group above it (5-9).

A peculiar characteristic of the pyramid is the high number of women aged 55-59 years. This is most likely a result of age shifting by both interviewers and respondents, who, in order to avoid the work of collecting birth history data (something only done for respondents aged 15-54), recorded women aged 50-54 as somewhat older. This was actually a possibility that was foreseen—indeed, one reason to collect birth history data for the 50-54 age group was to avoid having this problem for the 45-49 age group—and the re-interview questionnaire focused, among other things, on this issue.

The dependency ratio, i.e. the ratio of the population aged below 15 or above 65 to the population aged 15 to 64, is 0.73.

Table 24: Population—yearly growth of the Iraqi population according to various sources

	Population (millions)			Yearly growth (percent)*		
Year#	USBC	UNPD	COSIT	USBC	UNPD	COSIT
1957	6,249		6,299			
1960	6,822	6,847		2,9		
1965	7,971	7,976	8,047	3,1	3,1	3,1
1970	9,414	9,356	9,440	3,3	3,2	3,2
1975	11,118	11,020	11,124	3,3	3,3	3,3
1977	11,883		12,000	3,3		3,8
1980	13,233	12,962	13,300	3,6	3,2	3,4
1985	15,694	15,236	15,585	3,4	3,2	3,2
1987	16,543		16,335	2,6		2,4
1990	18,135	17,341	17,890	3,1	2,6	3,0
1995	19,557	20,206	20,536	1,5	3,1	2,8
1997	20,776		22,046	3,0		2,99
2000	22,676	23,224	24,086	2,9	2,8	2,95
2003	24,683	24,700	26,340	2,8	2,1	2,97
2004	25,375		27,140	2,8		2,97

** The growth rate shown is the intrinsic rate of growth for the period between adjacent rows with valid data. Thus, the UNPD growth rate of 3.2 shown for 1980 is the yearly growth for the period 1975 to 1980. # The census years are marked in bold face.*

Sources: USCB – U.S. Census Bureau international database (U.S. Census Bureau 2004). UNPD: UNPD 2004; COSIT, CSO 2002.

Close to equal number of men and women overall, but large age and regional variation

The gender ratio in the population, i.e. the ratio of males to females, shows a close to equal number of the two genders. The ratio is 0.998. The equal number hides several important variations by age (Figure 20). First, there is a rather low number of men aged between 35 and 49—the year groups that were affected by the losses during the Iran-Iraq war, and also by selective migration of males. There is also a drop in the gender ratio for the 55-59 age group, which corresponds to the bump in the population pyramid at the same age. This is the effect of women who were given somewhat higher ages, as discussed

Figure 20: Age and gender structure of Iraq. Ever married persons are indicated with shading.

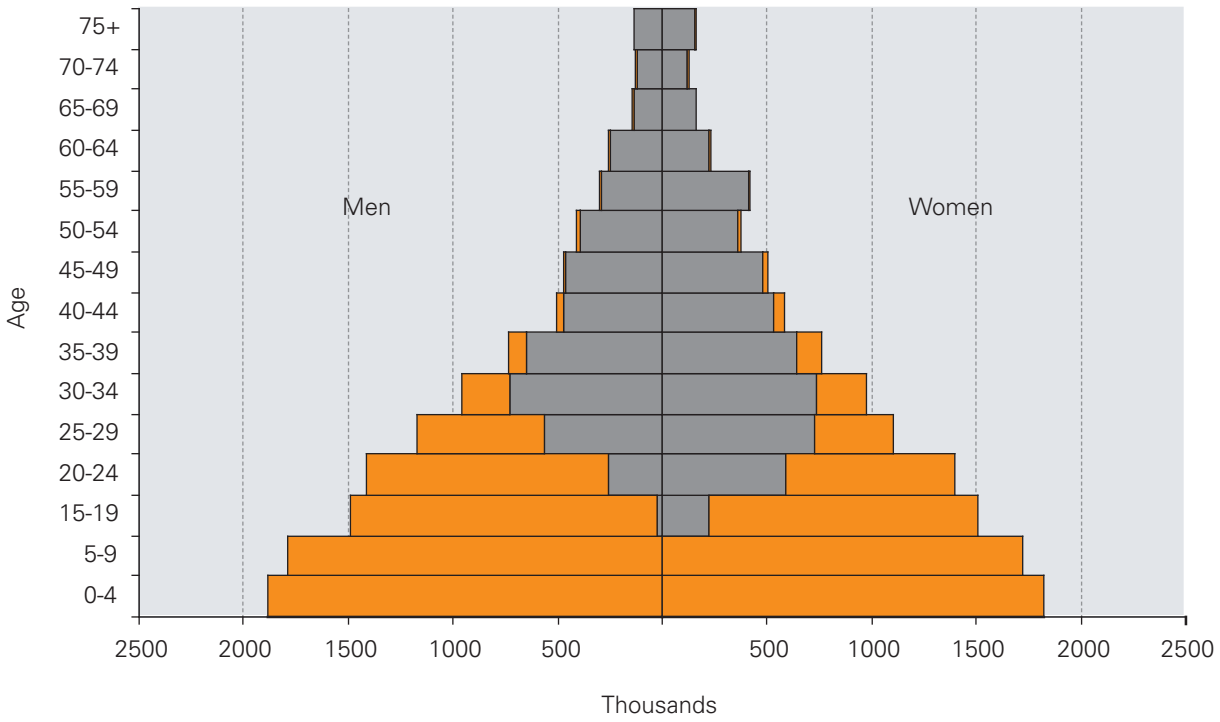
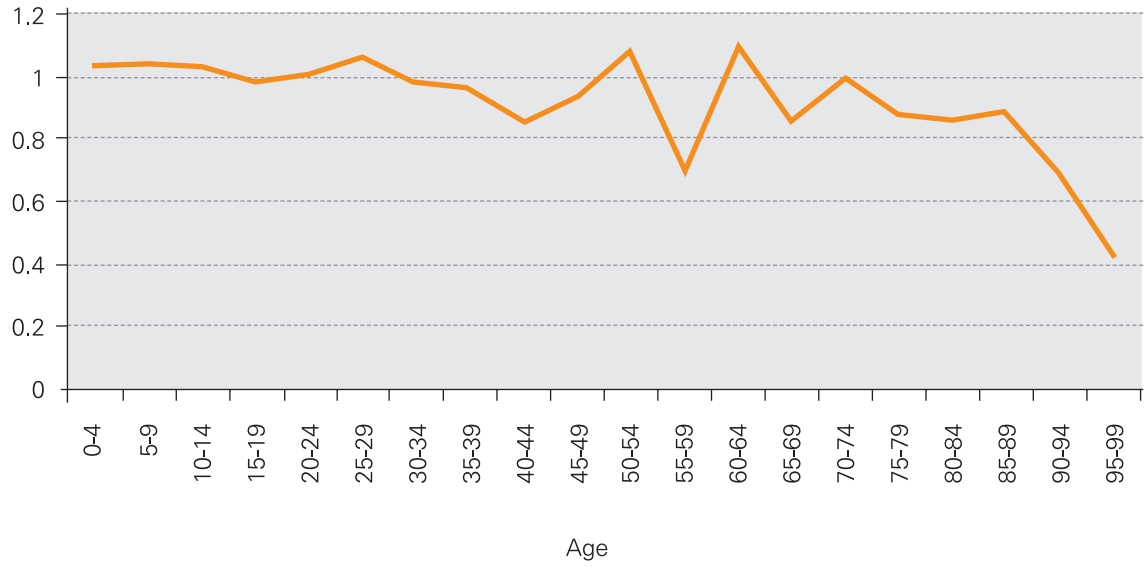


Figure 21: Gender ratios by age



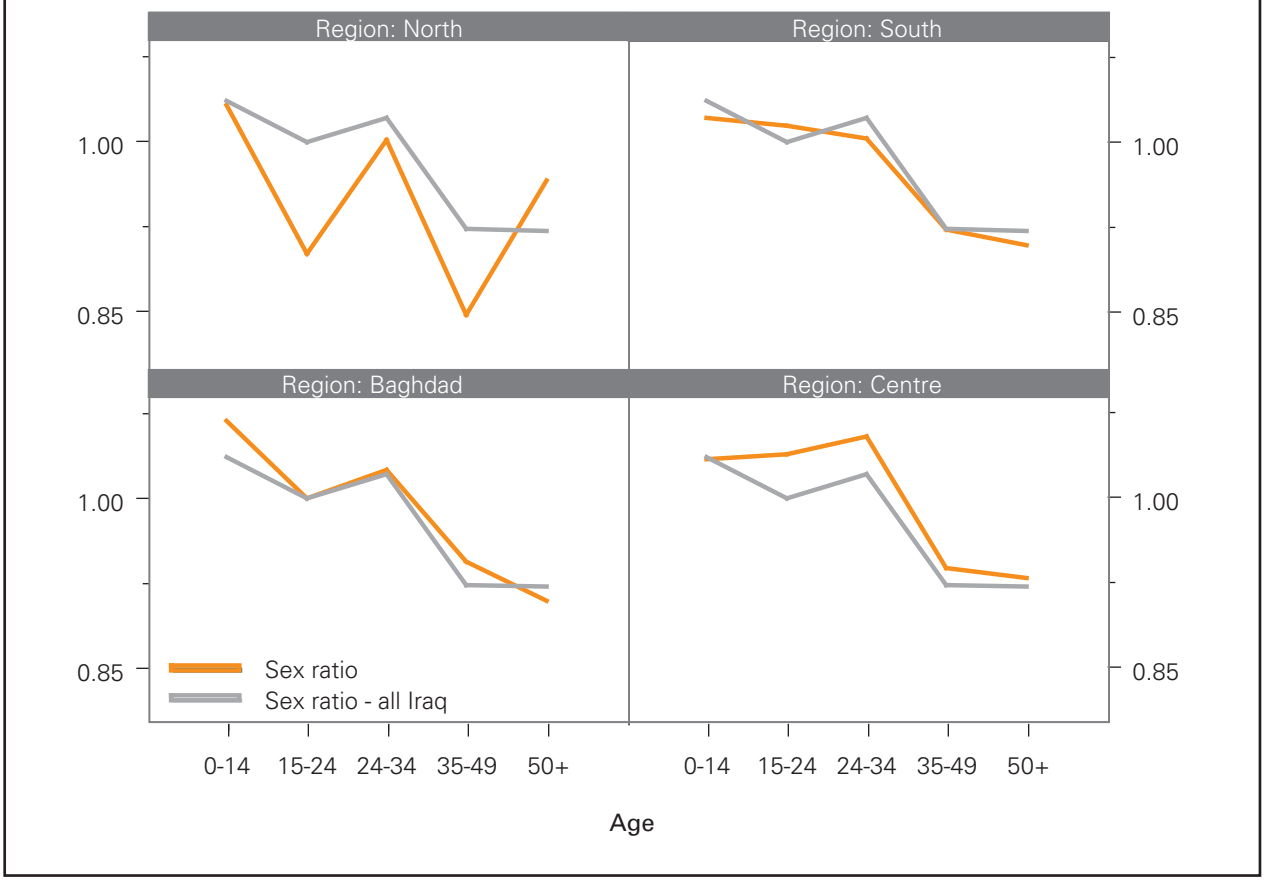
above; most likely, the real curve is much smoother around these ages. Finally, the gender ratio drops with increasing age, a trait found in most populations because women generally live longer than men.

The regional variation in gender ratios is considerable (Figure 21). Baghdad is closest to the national pattern, with a surplus of men at an early age, a drop to near equality in the 15-24 year group, a slight surplus in the 24-34 year group, and then a steady trend towards a surplus of women. The north is an extreme, with generally much fewer men, especially in the 15-24 and 35-49 age groups. The south follows more or less the national pattern, while in the centre there is a clear surplus of men up to 34 years.

However, from the above data it is difficult to say how much of this variation is due to migration, and how much is due to mortality in conjunction with the wars and sanctions. The nearly vertical incline of the population pyramid—rather than the expected stair-shape—for men aged 40-49 suggests the effects of the Iran-Iraq war, as this is the age group that was of soldiering age at the time.

Some authors (Ali et al. 2003) have indicated a substantial surplus mortality of around 500,000 children in Iraq after the start of the UN sanctions. This should be large enough to be visible in the population pyramid, and the comparatively low number of children in the 0-4 age group could be interpreted in this light, rather than as an effect of declining fertility. However, this should then also be visible in the 5-9 year group and partly in the 10-14 year group, since high infant mortality rates have been reported from 1991 onwards. These issues will be considered in more detail in the discussion of mortality below.

Figure 22: Gender ratios by broad age groups and region.



Marriage

Marriage universal

Nearly everyone marries in Iraq. Very few in the older age groups have never been married, as shown in Figure 20. This is shown in more detail in Table 25, which also depicts the low number of people, among men and women, currently divorced and separated. However, the percentages of widows in the different age groups are slightly higher than in, for example, Jordan; this topic will be returned to below.

Increasing age at marriage for women

The legal age for both men and women 18, or 15 with the consent of their guardian (WLP 2004). The marriage age is an important indicator for several reasons. First, childbearing is more risky for young women than for the older. Second, low age of marriage is often associated with a large age difference between the spouses, making it difficult to have balanced decision-making and authority in the household. Third, low age at marriage in a society is strongly related to high fertility.

A cursory look at the age at marriage suggests that it has been steadily increasing both for men and women, as measured by the median (the age at which half the population has married). Women born between 1920 and 1929 were 19 years when they married, whereas the men were around 25. Fifty years later, women born in the 1970s were around 23 years of age and men 28 years when they married.

During most of the period, however, the male median marriage age remained stable at around 26 years. The increase in the 1970s was possibly temporary, as can be seen by Figure 23. While there appears to have been an increase in marriage ages for men

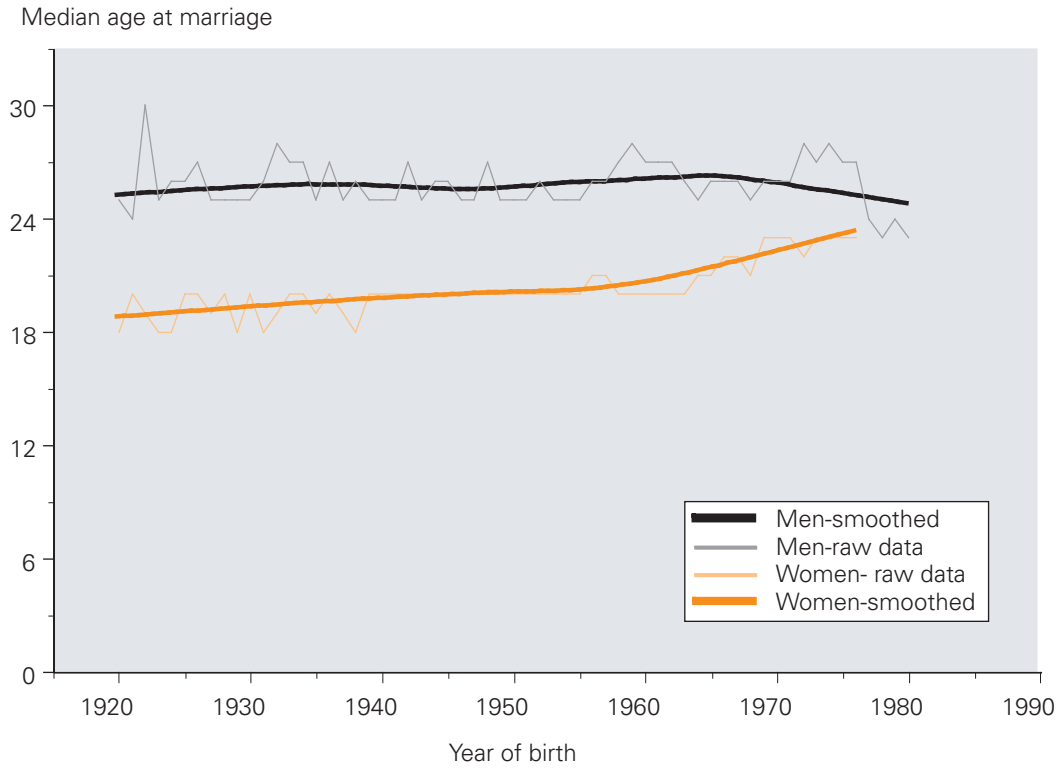
Table 25: marital status by age and gender (percent in age group)

	Men					Women				
	Single	Married	Widowed	Divorced	Separated	Single	Married	Widowed	Divorced	Separated
15-19	98	2	-	-	-	85	15	0	0	0
20-24	81	19	0	0	0	57	42	0	0	0
25-29	50	50	0	0	0	34	64	1	1	0
30-34	22	77	0	0	0	22	74	2	1	0
35-39	10	89	0	1	0	14	80	4	2	0
40-44	6	93	1	0	0	8	82	8	2	0
45-49	2	96	1	0	0	5	80	13	2	1
50-54	2	96	1	0	0	4	75	18	2	1
55-59	2	96	2	0	0	3	70	25	1	1
60-64	1	94	4	0	0	4	59	35	1	1
65-69	1	91	7	1	1	4	50	45	1	0
70-74	2	89	9	0	-	3	45	51	1	0
75-79	1	83	16	0	-	2	34	64	0	0
80-84	1	78	20	-	0	3	30	66	-	0
85-89	2	83	15	-	-	1	16	83	-	-
90-94	3	68	27	-	3	-	13	87	-	-
95-99	-	60	40	-	-	-	21	79	-	-
Total	44	54	1	0	0	35	55	8	1	0

Table 26: Median age at marriage by region and gender

	Male					Female				
Birth year	South	Baghdad	Centre	North	All	South	Baghdad	Centre	North	All
1940-1949	26	26	25	25	25	20	20	20	19	20
1950-1959	26	27	25	24	26	21	20	20	19	20
1960-1969	26	27	25	25	26	21	22	21	20	21
1970-1979	28	32	27	28	28	23	23	22	25	23

Figure 23: Median age at marriage by year of birth. Yearly estimates and less smooth.



born in the late 1970s, those born a few years later married younger. Thus, the more important increase in marriage age is among the women, and the trend toward smaller age differences is mainly caused by the increase in the age at which women marry.

As for the gender ratio, there are differences between the regions with regard to age of marriage (Table 26). Women in the three northern governorates have traditionally married early compared to the women in other regions, but now have the highest marriage age. In contrast, men in the north have had similar median age of marriage compared to other regions.

Another measure of the age at marriage is the so-called singulate mean (Hajnal 1953), which estimates the mean age at marriage from the proportions married at a given time. This measure yields a marriage age for men of 28.1 years, and for women of 25.2 years. Since the measure is estimated from the current distribution of marriage by age groups, it is only partly sensitive to shifts in the age at marriage. Like the median, the measure is sensitive to migration. A benefit of the measure, however, is that comparative figures from other countries are readily available (Table 27). As can be seen, the Iraqi singulate mean age at marriage is considerably higher than elsewhere in the Middle East (although it should be taken into consideration that data from the other countries are about 10 years old). However, the difference between the marriage age for men and women is similar to most countries, at about four years.

An indicator of early marriage that is increasingly used is the percentage of women aged 15-19 that are currently married. Fifteen percent of Iraqi women in that age group are married, a figure that is higher than Iraq's neighbours to the west and north, but lower than its southern neighbours (Table 28).

Table 27: Singulate mean age at marriage in selected countries, early to mid 1990s

Country	Female	Male	Source
Egypt	22	27,8	UNESCWA 1994
Jordan	22,3	26,3	UNESCWA 1994
West Bank and Gaza	21,5	25,3	Fafo data 1995
Syria	21,5	25,7	UNESCWA 1994
Iraq	25,2	28,1	ILCS

Table 28: Currently married women aged 15-19, 20-24, in percent

Country	Percent married
Jordan	8
Syria	10
Kuwait	11
Turkey	13
Iraq	15
Saudi Arabia	15
United Arab Emirates	17
Iran	22
Yemen	26
Oman	36

Source: PRB 2004, except Syria (Survey of Internal Migration in Syria, CBS/Fafo – calculated from data set), Iraq (ILCS data).

High and stable frequency of marriage between kin

A characteristic of marriage in Iraq is the practice of marriage between close kin. In principle, marriage between the father's brother's daughter and father's brother's son is the preferred type, but this form makes out only half of all marriages between cousins. Moreover, marriage within the patrilineal clan is also common (Table 29).

Cousin and kin marriages are more common in rural than in urban areas, but only in the urban areas of Baghdad and the north does the frequency of non-kin marriages surpass 50 percent.

The difference between urban and rural areas may easily be interpreted as a development away from kin marriages. However, this would be misleading, as can be seen by consulting Table 30, which shows the frequency of marriage types by the period in which the marriage took place. The frequencies of no relation between the spouses have been nearly constant, at around 28 percent for rural areas and 48 percent for

Table 29: Relation to husband, by place of residence, in percent

	South		Baghdad		Centre		North		Iraq
Marriage type	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Total
Mother's brother's son	5	5	6	4	5	5	5	5	5
Father's brother's son (FBS)	24	16	29	14	24	16	15	10	17
Mother's brother's son and father's sister's son	1	1	1	1	1	2	3	2	1
Mother's sister's son	6	5	9	5	5	6	4	4	5
Father's sister's son	4	4	4	4	4	5	3	3	4
Mother's sister's son and father's brother's son	1	1	1	1	1	1	1	1	1
Same clan, father's side	20	9	14	9	19	12	18	13	13
Same clan, mother's side	3	5	4	5	5	5	5	5	5
Same clan, mother's and father's side	9	6	9	5	8	5	8	5	6
No relation	27	48	23	51	29	43	39	53	41
All	100	100	100	100	100	100	100	100	100
Total cousin marriage	41	33	51	30	39	34	30	24	34
Percentage FBS of all cousin marriages	60	50	59	50	62	48	52	44	53

Table 30: Relation to husband, by place of residence and year when marriage took place, in percent

	Marriage type	1940-49	1950-59	1960-69	1970-79	1980-89	1990-99	2000-04	Total
Rural	Father's brother's son	30	25	26	22	24	24	24	24
	Other cousin	8	10	10	15	16	18	20	16
	Clan	35	33	34	34	33	30	30	32
	No relation	27	31	29	29	27	28	26	28
	Total rural	100	100	100	100	100	100	100	100
Urban	Father's brother's son	19	18	18	15	14	14	15	15
	Other cousin	9	13	13	14	16	19	19	16
	Clan	26	24	24	22	22	18	20	21
	No relation	46	46	45	50	49	49	46	48
	Total Urban	100	100	100	100	100	100	100	100

urban. Nevertheless, there are some changes that follow similar patterns in urban and rural areas. On the one hand, father's brother's son marriages have decreased somewhat in frequency, as have clan marriages. On the other hand, other types of cousin marriages have increased in frequency.

Thus, in contrast to patterns among other populations in the Middle East (Pedersen 2002), kin marriage frequency does not seem to have decreased with the overall modernisation in Iraq.

Fertility

Declining fertility rate

Fertility in Iraq is dropping. The total fertility rate for a period is the number of children a woman will have if she, throughout her reproductive life, has the same average number of children as the women in the different age groups have during the period. The average total fertility rate for 1999–2003 was 4.0 (Table 31).

The national total fertility rate of 4.0 hides, however, both a difference of about 1.5 children between urban and rural areas, and a general decline throughout the five year reference period and before, as indicated in Figure 24. Thus, in 2003 the total fertility rate was at 3.8.

Table 31: Total Fertility Rates by place of residence and period

	1994-1998	1999-2003
Urban	4,2	3,7
Rural	6,1	5,2
Total	4,7	4,0

The estimates of fertility derived from ILCS are lower than previous estimates, such as those based on the census of 1997. However, the previous estimates were based on the P/F-ratio method, which corrects assumed underreporting of births in the year before a census or survey with the parity (number of children) of women. That method does not necessarily work well when there is fertility decline.

In the ILCS case, the estimates are based on the birth history of women. All ever-married women aged between 15 and 54 years were asked to give details on each child they had borne, including date of birth, gender, and whether the child was still alive and, if not, the date of death. Fertility rates were then estimated directly. Because only women up to 54 years of age were asked to supply their birth history, the estimates tend to underestimate fertility for periods far back in time. However, this becomes a problem only for estimates of the fertility rates going more than 15 years back, as the fertility of women above 40 is quite low and does not contribute much to the overall rate. For the same reason, the underreporting of women aged 50-54 (referred to above) does not pose a significant problem for the fertility estimates.

Educated women have lower fertility

The fertility rates show a clear-cut association with level of education. For the period 1999-2003, women with higher education had a TFR 2.2 lower than those that never attended school (Table 32). If one considers the difference between the periods 1994-1998 and 1999-2003, it appears that the women who never attended school have the largest absolute decline in fertility, while those with higher education have the smallest decline, both in absolute and percentage terms.

Not unexpectedly, fertility shows a quite clear association with the labour force participation of women, with participating women (i.e. those that are either employed, temporarily absent, or unemployed but seeking work) having a total fertility rate of 2.9, while those outside the labour force having a fertility rate of 4.3 (1999-2003).

Age-specific fertility rates show how childbearing is distributed throughout the reproductive life of a woman. Figure 25 shows these rates for the last 10 years and for educational attainment, while Table 10 shows the figures for the last 10 years.

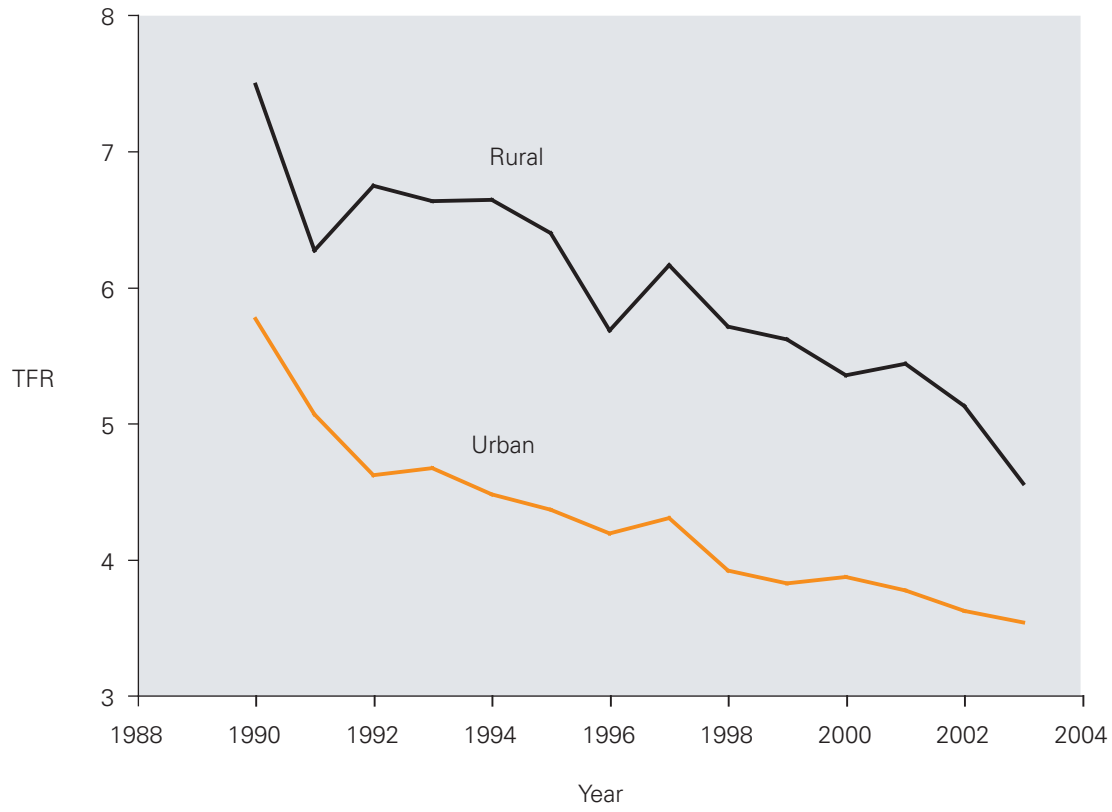
Table 32: Total Fertility Rates by period and education

	Period		Difference	
	1994-1998	1999-2003	Absolute	Percentage
Never attended	5,5	4,8	0,73	13
Incomplete elementary	5,0	4,4	0,62	12
Elementary	4,9	4,3	0,65	13
Intermediate	4,0	3,6	0,37	9
Secondary	3,5	2,9	0,62	18
Higher	2,9	2,6	0,26	9

Table 33: Age specific fertility rates, 1994-1998, 1999-2003

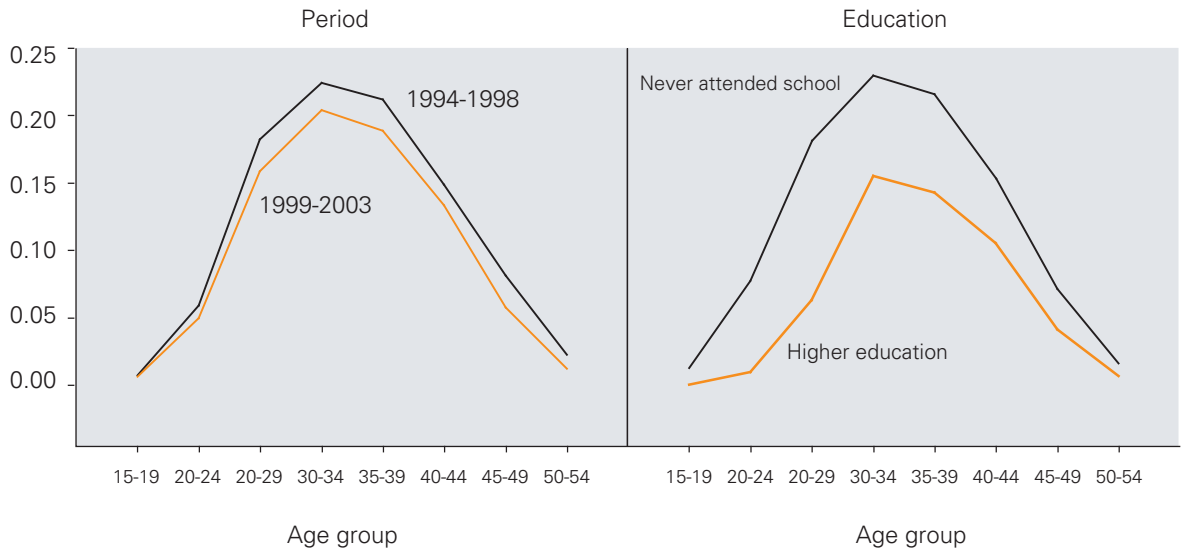
Age	1994-1998	1999-2003
15-19	0,007	0,006
20-24	0,059	0,050
20-29	0,182	0,158
30-34	0,224	0,204
35-39	0,212	0,189
40-44	0,148	0,133
45-49	0,081	0,058
50-54	0,023	0,012
TFR	4,7	4,0

Figure 24: Development of Total Fertility Rate 1985-2000



Childbearing by women aged 15-19 comprises less than one percent of the total fertility rate, primarily indicating that those that marry in that age group marry close to the end of it and so do not contribute much to the overall fertility of the age group. However, as will be discussed in the chapter on reproductive

Figure 25: Age specific fertility rates



health, births by women aged 15-19 accounts for a large proportion of total births, due to the number of women in the age group.

Regardless of the total number of children she bears, a woman in the 30-34 year age group has the highest chance of having children. The reduction of fertility with higher education means that highly educated women start to bear children later and stop bearing them sooner.

Given the strong link between educational attainment and fertility, and the fact that enrolment in schools has stagnated, as will be discussed in the education chapter, it is possible that fertility will not continue to decline in the future.

Another indication that a halt in the decline is possible is that the trend in ages at marriage is such that the age difference between the spouses is approaching zero. The increasing age at marriage for women has been a factor that has stimulated fertility decline in other Arab countries (Rashad 1997). However, it is difficult to believe that marriage ages of women will be higher than those of men. Therefore, unless the age at marriage for men increases, this factor, too, will contribute to a levelling of the fertility decline, since the increase in women's age at marriage will stop.

Infant and child mortality

Lower infant and child mortality than previous estimates

The survey found an infant morality of 32 deaths during the first year of life per 1,000 births. For the period 1999–2003, the rate was 29 for girls and 25 for boys. The corresponding under five-year mortality rate ($_5Q_0$) was 40 (all), 35 (girls), and 44 (boys) per 1,000 (Table 34). This level is considerably lower than many previous estimates of infant and child mortality in Iraq (Garfield 1999; Ali & Shah 2000; Ali, Blacker & Jones 2003).

The infant and child mortality have been estimated using a direct method, i.e. the synthetic cohort method directly from the birth history (Curtis 1995). This is the same method used in the Demographic and Health Surveys.

When the ILCS was conducted, data were evaluated as they came in, and it soon became apparent that the infant and child mortality rates would turn out considerably lower than expected. Interviewers were therefore asked to pay particular attention to the birth history section of the interview.

Nevertheless, when first estimated, the mortality rates turned out to be lower than those published here. Therefore, it was decided to conduct control interviews in order to check if all births and deaths were recorded. First, a sample of 500 households in Baghdad that had already been interviewed were interviewed again. The questionnaire used consisted of just the birth history and parts of the labour force section. Once it turned out that there were indeed some omissions of births and deaths, it was decided to re-interview all households again with the small questionnaire.

In general, girls have had lower mortality than boys for all the periods for which estimates from the survey showed. Thus, the surplus mortality of girls that has existed in the Middle East (Tabutin 1994) has disappeared in Iraq, as it has generally.

During the last 15 years, infant and child mortality rates appear to have been steadily increasing. What is surprising is that one does not see an immediate rise, as depicted in other studies, after the 1991 Gulf war (see in particular Garfield 1999; Ali & Shah 2000; Ali, Blacker & Jones 2003). Instead of a sudden jump to an extreme level, the ILCS data indicates a progressive worsening of the situation for children. One should note that this should be seen in a context of declining infant and child mortality rates in neighbouring countries.

It is possible that ILCS somewhat underestimates infant and child mortality. In particular, and as indicated by the

Table 34: Infant and child mortality rates (1991 - 2000, per 1,000 live births)

Mortality rate	Estimate	Standard Error	95 percent confidence interval+	
			Low	High
Neonatal	20,3	1,57	17,2	23,4
Post neonatal*	11,9	0,92	10,1	13,7
$_1Q_0$ (infant mortality)	32,2	1,78	28,7	35,7
$_2Q_0$	38,1	1,92	34,4	41,9
$_3Q_0$	38,8	1,93	35,0	42,6
$_4Q_0$	39,2	1,94	35,4	43,0
$_5Q_0$ (U5MR, child mortality)	39,7	1,94	35,9	43,5

* Note: Post neonatal death rate is estimated as the difference between 1Q0 (the infant mortality rate) and the neonatal rate.
+ Confidence intervals have been arrived at by a Jackknife procedure as outlined by Wolter (1985: 184) and Levy and Lemeshow (1999: 378-79).

Table 35: Neonatal, Infant and Under Five Mortality (1989 - 2003, deaths per 1,000)

Year	Gender	Neonatal Mortality	Post neonatal Mortality	$_1Q_0$ Infant mortality rate	$_5Q_0$ (U5MR, child mortality rate)
	Total	15	11	25	36
1989-1993	Male	19	11	30	40
	Female	11	10	20	31
	Total	19	11	30	38
1994-1998	Male	23	11	34	43
	Female	15	11	26	32
	Total	20	12	32	40
1999-2003	Male	23	12	35	44
	Female	17	12	29	35

Table 36: Infant and child mortality rates by region

Main regions	Neonatal Mortality	Post neonatal Mortality	$_1Q_0$ Infant mortality rate	$_5Q_0$ (U5MR, child mortality rate)
South	13	9	22	31
Baghdad	19	11	31	35
Centre	30	16	47	54
North	20	12	32	42

tables above and below, it is possible that there is some underreporting of neonatal mortality. For example, the regional distribution of mortality indicates that mortality, particularly neonatal mortality, is perhaps underreported in the southern region (Table 36), as the proportion of neonatal deaths is low compared to the other parts of the countries, and also on the low side of what one would expect at the overall level of mortality (Curtis 1995).

Maternal mortality

Maternal mortality is the death of women during pregnancy or childbirth. Maternal mortality is usually measured by the maternal mortality ratio, which is the number of deaths per 100,000 childbirths. It ranges from close to 0 in countries such as Norway, where, in some years, maternal deaths are not observed, to up to around 2,000 in countries such as Afghanistan. The maternal mortality ratio in the Middle East ranges from 23 (Saudi Arabia) to 850 (Yemen), while most countries have ratios in the range of 20 to 50 (Table 37). As will be discussed below, it can be estimated that there are 193 maternal deaths per 100,000 births in Iraq.

Maternal mortality is difficult to estimate. This is partly because the person immediately affected cannot report about it; it is also because, even when deaths during pregnancy or delivery are comparatively frequent, they are fortunately not very common. Therefore, in the absence of complete registration of deaths by cause, a large sample and indirect methods of estimation are needed.

One way to estimate the maternal mortality ratio is the so-called "sisterhood method". In this approach, persons aged 15 and above are asked if any of their sisters have died during pregnancy, childbirth, or during the first 40 days following childbirth[8]. Demographic models are then used to estimate the

Table 37: Maternal mortality ratios in the Middle East, maternal deaths per 100,000 births

Country	MMR
Saudi Arabia	23
Kuwait	25
United Arab Emirates	30
Jordan	41
Turkey	55
Oman	120
Iran	130
Iraq	193
Syria	200
Yemen	850

Source: PRB 2004, except Iraq

8. According to WHO (1992), a maternal death is a death of a woman while pregnant or within 42 days of termination of pregnancy. In principle, one should only include deaths related to the pregnancy. ILCS uses 40 days because of the conventional postpartum period of 40 days in the Middle East, and includes all deaths during pregnancy in line with what is common in sisterhood studies. Some authors (e.g. Høj et al. 2003) have argued that a longer postpartum period should be used for identifying maternal deaths, and that this would lead to a 10-15 percent increase in the estimate of maternal mortality.

maternal mortality ratio (Graham and Brass 1989). In ILCS, all ever-married women aged 15 and above were asked questions about their sisters. This is, strictly speaking, a biased sample of women, since the unmarried women are not included. To determine if this posed a significant bias, a test with another data set—the Demographic Survey of the West Bank and Gaza Strip (Pedersen et al. 2000)—was carried out. It showed that the sisterhood method gave equal results with and without the unmarried women.

According to the sisterhood method, the maternal mortality ratio among Iraqi women is 193 deaths per 100,000 births

Several authors have suggested that sisterhood estimates of maternal mortality underestimate the true incidence of mortality from this cause (Hill et al. 2001). An alternative is the use of "process indicators." Such indicators are based on observed relationships between the indicator of interest and various indicators that may be more easily measured.

One such procedure for estimating maternal mortality was used by WHO and Unicef for producing global estimates for 1995 (AbouZhar and Wordlaw 2000). It is based on the prediction of the proportion of maternal deaths through a regression of the General Fertility Rate (GFR), the proportion of trained assistance at birth, and the country's status as a developing country (Stanton et al 1996; Hill et al 2001).

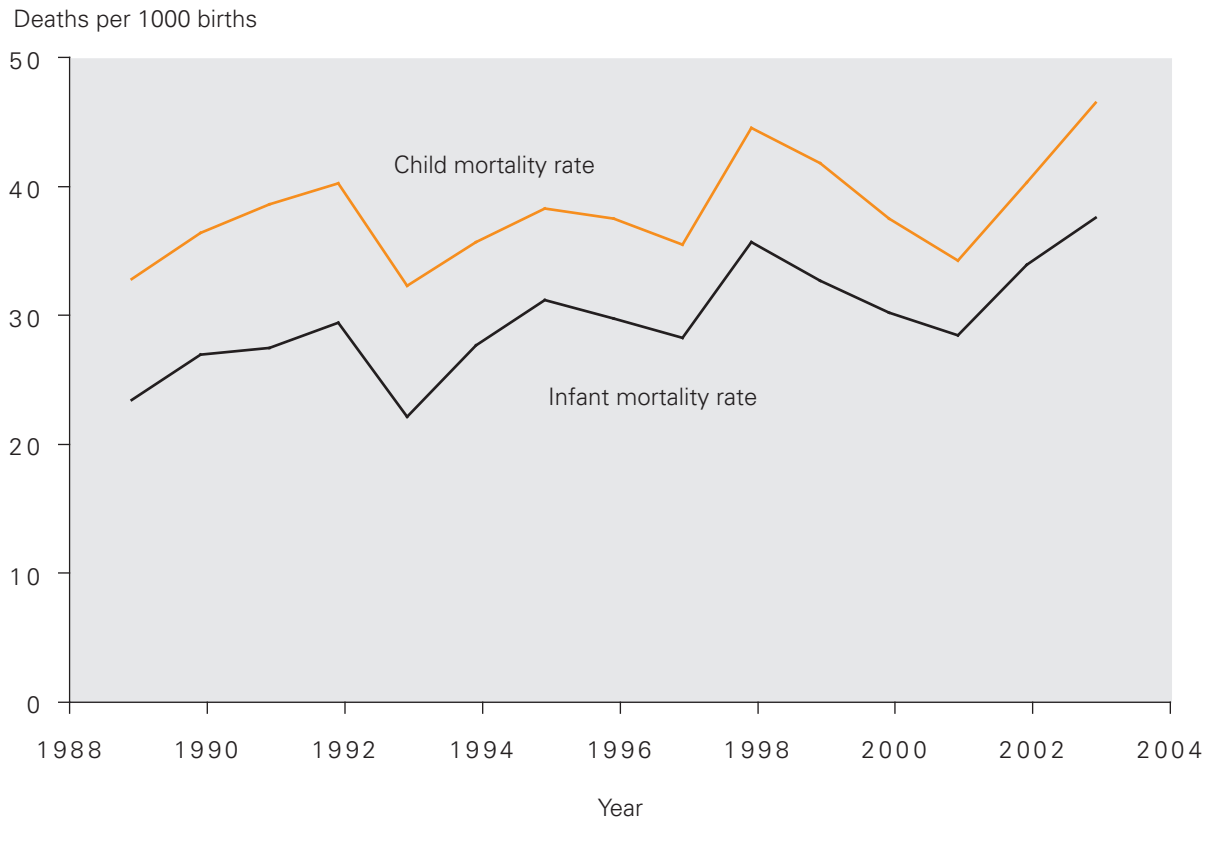
In the case of Iraq, with a GFR of 126 and a proportion of properly assisted births at 96 percent, the proportion of deaths from maternal causes predicted by the method is 0.07. It then remains to find the number of women that die between the age of 15 and 49. The infant mortality rate for women, as estimated from the survey, can be used to predict the female life table, which describes the chance of dying at different ages. The "West Coale Demeney" life table was used for this task.

When the total number of female deaths in the age group 15-49 has been found (by applying the life table to the age distribution, as estimated from the survey), one can calculate the number of maternal deaths. The number of births can be estimated from the age-specific fertility rates.

The procedure yields a maternal mortality ratio of 127 per 100,000 births, substantially lower than the sisterhood estimate. This process approach estimates the maternal mortality ratio for 2004, while the indirect estimate has a time reference at roughly 1996.

A third method of estimating the maternal mortality is to use the report that households give of mortality during the two years preceding the survey. According

Figure 26: Development of infant and child mortality rates, 1989 to 2003



to these data, 849 maternal deaths of women were reported (following the same definition as above). Similar to the procedure described above, the number of births can be estimated from the age-specific fertility rates. This also yields an estimate of the maternal mortality rate of 127. This estimate is valid for 2002-2003.

Even though the estimates of 193 and 127 differ in the time reference, there are no reasons to infer a trend in the data: most likely, the differences are due to the inherent uncertainty in estimates of the maternal mortality rate. Three issues merit particular mention. First, the process estimate crucially depends on the overall mortality assumptions (Hakkert 2001). The low infant mortality found in ILCS is controversial. A higher estimate of infant mortality would result in an estimate of a higher number of female deaths, which in turn would lead to a higher maternal mortality ratio. Moreover, although it is a common procedure, estimating adult mortality from infant mortality is at best an uncertain business—particularly so in crisis-ridden Iraq, where mortality patterns may easily be different from what the models stipulate.

Second, the process estimate also depends on the proportion of deliveries with skilled assistance. As is discussed in the health chapter, the ILCS estimate may be too high. If this is the case, it would again lead to an underestimate of the maternal mortality ratio. It should be noted, however, that some studies have found maternal mortality to be less affected by the skilled assistance at birth than estimated in the model used here (Bulatao and Ross 2003).

Third, it is well known that estimating mortality from deaths reported by households usually underestimate the number of deaths (UN 1983). This can in principle be corrected, but the correction itself is difficult because it involves demographic assumptions that are clearly inappropriate in the case of Iraq (such as the assumption of constant fertility and mortality rates). However, maternal deaths are perhaps reported better than deaths by other causes. One should also note that the recording by the interviewers of household deaths due to pregnancy appears somewhat uneven, particularly in Baghdad where no such deaths were recorded by interviewers, contributing to an underestimation.

Thus, it is more prudent to accept the higher estimate of 193 deaths per 100,000 births as the maternal mortality ratio. This estimate is still lower than previous estimates of 370 per 100,000 live births (PRB 2004).

The uncertainty in the estimates presented here to some extent illustrates this point. However, the estimates still provide an overview of the general level of Iraq compared to its neighbours and, as indicated above, show that Iraq has not participated in the overall decline in maternal mortality achieved in the past decades by other Middle Eastern countries.

Table 38: Sisterhood estimates of maternal mortality

Age group of respondents	Number of respondents	Sister aged 15 and above	Sister units of risk exposure	Maternal deahs	Lifetime risk of maternal death	Maternal mortality ratio (per 100,000)	Proportion dead from maternal causes
15-19	1,169	2,764	296	17	0,056	1,409	0,247
20-24	3,077	7,277	1,499	38	0,025	625	0,169
25-29	3,791	11,693	4,011	43	0,011	267	0,162
30-34	3,847	12,393	6,233	40	0,006	160	0,117
35-39	3,373	10,590	7,032	46	0,007	163	0,159
40-44	2,794	8,888	7,128	41	0,006	142	0,148
45-49	2,507	7,664	6,897	33	0,005	119	0,103
50-54	1,882	4,998	4,788	35	0,007	183	0,098
Total 15-49			33,096	258	0,008	193	

War-related deaths – between 18,000 and 29,000

The number of deaths of civilians and military personnel in Iraq in the aftermath of the 2003 invasion is another set of figures that have raised controversy. The ILCS data indicates 24,000 deaths, with a 95 percent confidence interval from 18,000 to 29,000 deaths. The confidence interval was estimated using a linearisation technique (using SPSS Complex Samples, version 12).

Table 39: Number of war-related deaths by region

		95% confidence interval	
Region	Number	Lower	Higher
South	12,044	8,007	16,081
Baghdad	7,547	4,173	10,920
Centre	3,686	2,046	5,326
North	466	-	1,173
Total	23,743	18,187	29,299

Another source (Roberts et al. 2004) estimates the number to be 98,000, with a confidence interval of 8,000 to 194,000. The website "Iraq Body Count" (http://www.iraqbodycount.net/) estimates that between 14,619 and 16,804 deaths have occurred between the beginning of 2003 and 7 December 2004 (IBC 2004).

The ILCS data has been derived from a question posed to households concerning missing and dead persons during the two years prior to the survey. Although the date was not asked for, it is reasonable to suppose that the vast majority of deaths due to warfare occurred after the beginning of 2003.

The question asked in ILCS was formulated and posed in a relatively standard way typical to large surveys and censuses (UN 1983). The question underestimates deaths, because households in which all members were lost are omitted. It is therefore common within demographic studies to use a correction for this, based on a number of assumptions derived from stable population theory (UN 1983). This has not been attempted here, as it is unlikely that the assumptions are satisfied. It is not common to make this correction in epidemiologically oriented studies, and this was not done in the Roberts et al. study.

According to the ILCS data, children aged below 18 years comprise twelve percent of the deaths due to warfare. As the data on infant mortality make clear—as does the data on malnutrition, presented elsewhere in this report—the suffering of children due to war and conflict in Iraq is not limited to those directly wounded or killed by military activities.

Survival of parents: relatively few fathers alive

Another way to approach Iraqi mortality is to consider maternal and paternal orphanhood. In ILCS, respondents were asked whether or not their father and mother were still alive. This has an interest in itself, because it can be used to show how many children have lost one or both of their parents (Table 40). The pattern of maternal orphanhood is nearly identical to comparable data from Jordan (based on data from the Jordan Living Conditions Survey 1996), but Iraqi respondents report more deceased fathers: for example, at the ages of 15-19, Jordanians report 8 percent of fathers dead compared to the Iraqi figure of 13. In general, the Iraqi figure is six to seven percentage points above that of Jordan.

Table 40: Survival status of parents by age of offspring

	Parent not alive		
Age	Mother dead	Father dead	Both dead
0-4	0	1	0
5-9	1	3	0
10-14	2	6	0
15-19	3	13	1
20-24	5	20	2
25-29	8	28	4
30-34	14	39	8
35-39	25	51	17
40-44	35	65	28
45-49	51	77	45
50-54	67	87	62
55-59	80	93	77
60-64	91	97	90
65-69	95	98	94
70-74	98	99	97

One should note that the death of parents, and especially of fathers, is an imperfect indicator of mortality due to war and conflict. This is especially so in Iraq, where many of the deaths in the past were due to the Iran-Iraq war or the first Gulf war—the former in particular led to the death of a large number of soldiers. Many of these men, however, never got the chance to become fathers.

The orphanhood data can also be used to estimate adult mortality, which can then be used to extrapolate life expectancy. Using the so-called Brass conditional technique (UN 1983: 101-106) and assuming a Coale-Demeney "West" life table, we can arrive at estimates of life expectancy at birth for women and men. Each five-year age group of respondents are used to provide estimates of life expectancy that have different location in time.

The data appear to indicate a relatively stable female life expectancy at birth of around 71-72 years, and a decline of male life expectancy since 1988. It is difficult from the pattern of decline to fix an estimate of the male life expectancy, but somewhere between 62.5 and 65 years is probably reasonable. Again, one should note that the modelling technique is not sensitive to war-related deaths, because they do not follow a pattern that matches the model life tables.

Migration

Little internal movement

Compared to other countries in the region, inhabitants in Iraq have moved relatively little (Table 41). There is also very little difference in the propensity to move by gender (not shown). Nevertheless, during 2003 and the beginning of 2004, there were nearly as many moves as during the five years preceding the survey in total.

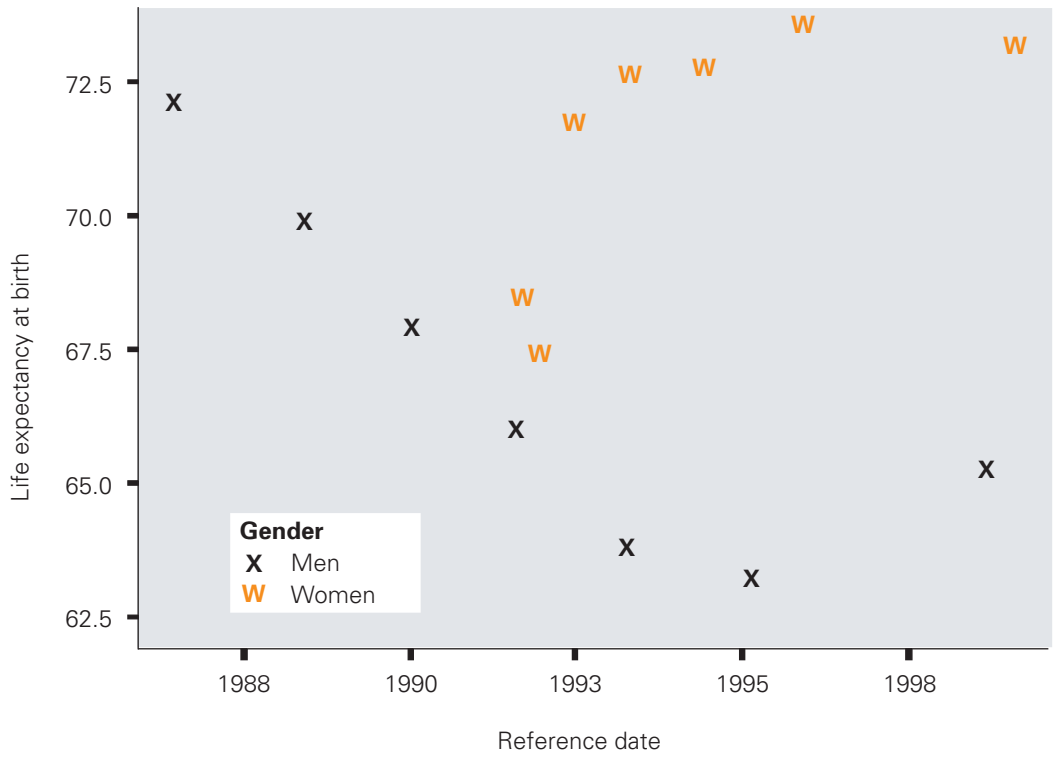
Table 41: Change of residence. Percent moved

Residence	South	Baghdad	Centre	North	Total
Different from birth	5,1	10,9	4,5	9,6	6,9
Different from 5 years ago *	2,1	2,1	1,9	3,0	2,2
Different from December 2002 *	1,4	0,7	1,5	2,3	1,4

** Population base is those born within the relevant time period.*

The figures in Table 41 are based on responses to the question of whether the respondent currently lived in the same place as at birth, five years ago, and in December 2002. A limitation with this type of data is that they do not reveal how often one moves back and forth within the periods in question. This is forcefully brought home by the data on whether or not people have been forced to move at any time. While in the south, centre, and Baghdad, approximately 2 to 3 percent have been forced to move whereas in the north, as many as 26 percent have been forced to move. In the north, people have been evicted and then later moved back to their homes.

Figure 27: Estimates of male and female life expectancy at birth by time location of estimate. Brass conditional method, west model life table



Relatively few households with close relatives abroad

Not only have the households in the north moved more, they also have more relatives abroad (Table 42). However, even in the north, the percent of households with close relatives abroad is much less than in, for example, the West Bank and Gaza Strip, Jordan, or Syria, where around 50 percent of the households have close relatives abroad. A close relative was defined as a son, daughter, parent, sibling, or spouse of any household member.

Europe is the dominant destination for Iraqis abroad, followed by the United States and Canada. Many households also have links to the Gulf countries, Jordan, and Lebanon.

Table 42: Percent of households with relatives outside Iraq

South	Baghdad	Centre	North	Total
6	11	6	22	10

Table 43: Residence of close relatives abroad as reported by the households (Percent of all relatives reported abroad)

Country	Percent
United States, Canada	13
Europe	52
Australia	3
Iran	5
Jordan	5
Gulf countries	5
Other Arab countries	11
Other countries	7
Total	100

Table 44: Occupation of close relatives abroad before they left, as reported by the households (Percent of all relatives reported abroad)

	Male	Female	Total
Employee private sector	20	6	16
Employee public sector	18	22	19
Student	18	13	17
Unemployed	20	6	16
Peasant	1	0	1
Self-employed	16	1	12
Housewife	0	47	14
No activity	0	1	1
Other occupation	6	2	5
Total	100	100	100

Around 53 percent of the close relatives are abroad to work or to seek work, of which more are men than women. In contrast, as many as 35 percent of the women are abroad because of marriage, versus only 2 percent of men (Table 45). The fact that many women worked or studied before they left does not preclude them from following family or being married abroad, however men seldom gave these reasons.

Table 45: Reason for being abroad - relatives reported by households. (Percent of all relatives reported abroad)

	Male	Female	Total
Work	48	15	38
Seeking work	19	6	15
Study/school	7	2	5
Married	2	35	11
Followed family	3	20	8
Place of origin/settled there	1	3	1
Political reasons	13	11	13
Other reason for staying there	7	9	7
Total	100	100	100

It should be noted that the percentages of relatives should be taken with some caution, as more than one household will have reported the same relatives. For example, an emigrant with many brothers still in Iraq may have been reported several times. As long as there is no association between the size of a group of relatives and the characteristics of relatives abroad, this does not affect the percentages. The fact that relatives may be reported more than once does, however, bias the estimated number of relatives abroad upwards by an unknown amount, and for that reason absolute numbers are not reported.

3. Child Health and Nutrition

Summary

Malnutrition among small children in Iraq is widespread. Almost a quarter of the children between six months and five years (23 percent) suffer from chronic malnutrition (low height-for-age), 12 percent suffer from general malnutrition (low weight-for-age), and eight percent suffer from acute malnutrition (low weight for height). The prevalence of acute malnutrition is highest in the south, particularly in Al-Qadisiya, where 17 percent are acutely malnourished. The prevalence of general and chronic malnutrition falls as the educational level of the caretaker increases, but there is no obvious relation to family income. Girls and boys are equally affected. Compared with previous findings, the level of malnutrition seems to have increased slightly and stabilized at a high level during the last four years. This is somewhat surprising in the light of the fact that 96 percent of the population reported that they were currently receiving regular food rations.

In the two weeks prior to the survey, 15 percent of the children had experienced a cough or cold, 14 percent had experienced fever, and nine percent had had at least one episode of diarrhea. Of the children with diarrhea, as much as 68 percent had been treated with antibiotics, 55 percent had drunk less or much less, and only 24 percent had increased the fluid intake as recommended. The incidence of diarrhea was not lower among those with piped water into the dwelling, which indicates that piped water is not necessarily safe.

Introduction

The Iraqi population is young: almost half the inhabitants are less than 18 years of age. In 1990, Iraq was ranked 50th on the United Nations Development Programme's Human Development Index. Ten years later, it was ranked 126th (Unicef 2003). Most Iraqi children today have lived their whole lives under sanctions and war. How has this affected their health and nutritional status during their growing and formative years?

The first Millennium Development Goal (MDG) is to eradicate extreme poverty and hunger. The main indicator chosen to monitor this goal is the prevalence of general malnutrition (low weight-for-age) in the age group below five years. This is important because "(S)ufficient and good quality nutrition is the cornerstone for development, health and survival of current and succeeding generations" (World Bank 2004a). The fourth MDG is to reduce child mortality by two-thirds in the period 1990 to 2015. The first and the fourth MDGs are closely interrelated, as are malnutrition, morbidity, and mortality in children.

In practice, malnutrition and morbidity form a vicious circle: those who are malnourished are more vulnerable to disease, and those who are diseased are more prone to become malnourished. Most of the child mortality in the world is directly or indirectly caused by infectious diseases, malnutrition, and poor neonatal conditions, which are, in theory, easily avoidable through simple and cost-effective interventions (WHO 2004a). While the child mortality rate has been reduced in most countries of the world over the last decade, it has increased in Iraq. Exactly how many excess deaths should be attributed to the sanctions and wars is a matter of controversy. Lack of good empirical evidence, combined with discrepancies in the estimates, has produced some confusion. There is, however, no disagreement that the steady decline in child mortality rates in Iraq in the 1970s and '80s was sharply interrupted at the time of the Gulf War in 1991. In the ILCS study, the child mortality rate (deaths in children under five years per 1000 live births) was found to be 40, and the infant mortality rate (deaths in children under one year per 1000 live births) was 32 which is somewhat lower than previous findings(UNDP 2003b).

In this chapter, the ILCS findings on nutrition and child health are discussed.

Nutrition

Malnutrition may be the result of too few calories, lack of particular elements in the food, or inadequate uptake by the body, for instance during diarrhea. The indicator of malnutrition chosen to monitor the first MDG is underweight-for-age ("general malnutrition"). Preferably, however, to be able to interpret the combination of acute and chronic malnutrition, the height-for-age ("stunting"), and weight-for-height ("wasting") should also be monitored (World Bank 2004a). While "stunting" reflects chronic malnutrition and shows little seasonal variance, "wasting" is a measure of acute malnutrition and has large seasonal variance. Underweight-for-age can be caused by either stunting or wasting, or both. There is no direct relation between the level of wasting and stunting. A person may suffer from severe acute malnutrition without signs of chronic malnutrition and vice versa. For example, a common sight in populations that have gone from poverty to wealth in one generation is short, overweight parents alongside tall, slender children.

Anthropometry builds on the concept that in a well-nourished population, the distribution of children's height and weight at a given age will approximately follow a normal distribution. The underlying assumption is that all populations have similar genetic potential for growth (Habicht JP et al. 1974). A reference population has been defined by the U.S. National Centre for Health Statistics and is recommended by the WHO and the U.S. Centres for Disease Control and Prevention. Children who are more than 2 z-scores below the median in the reference population are considered malnourished, and children who are more than 3 z-scores below the

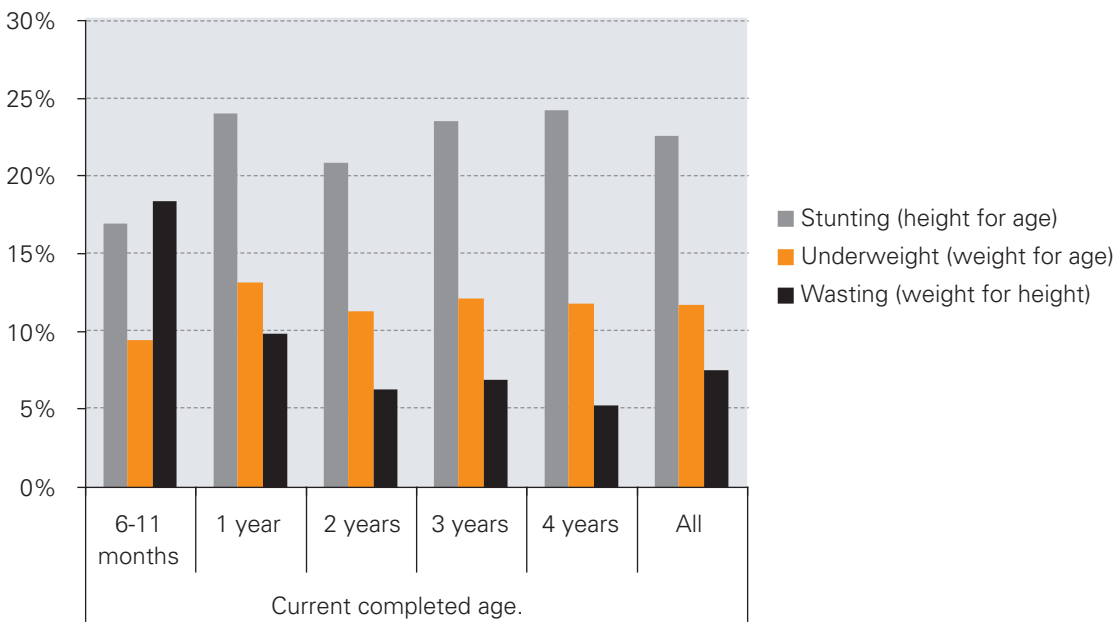
Box 3: Indicators of Malnutrition

Acute malnutrition
"wasting"
weight-for-height below
2 z-scores of the median.

General malnutrition
"underweight"
(indicator for Millennium Development Goal)
weight for age below
2 z-scores of the median.

Chronic malnutrition
"stunting"
height-for-age below
2 z-scores of median.

Figure 28: Malnourished children in Iraq by age group and measure



median are considered severely malnourished. This means that even in the reference population, following from the definition of the normal distribution, 2.14 percent will be moderately undernourished, and 0.13 percent severely undernourished.

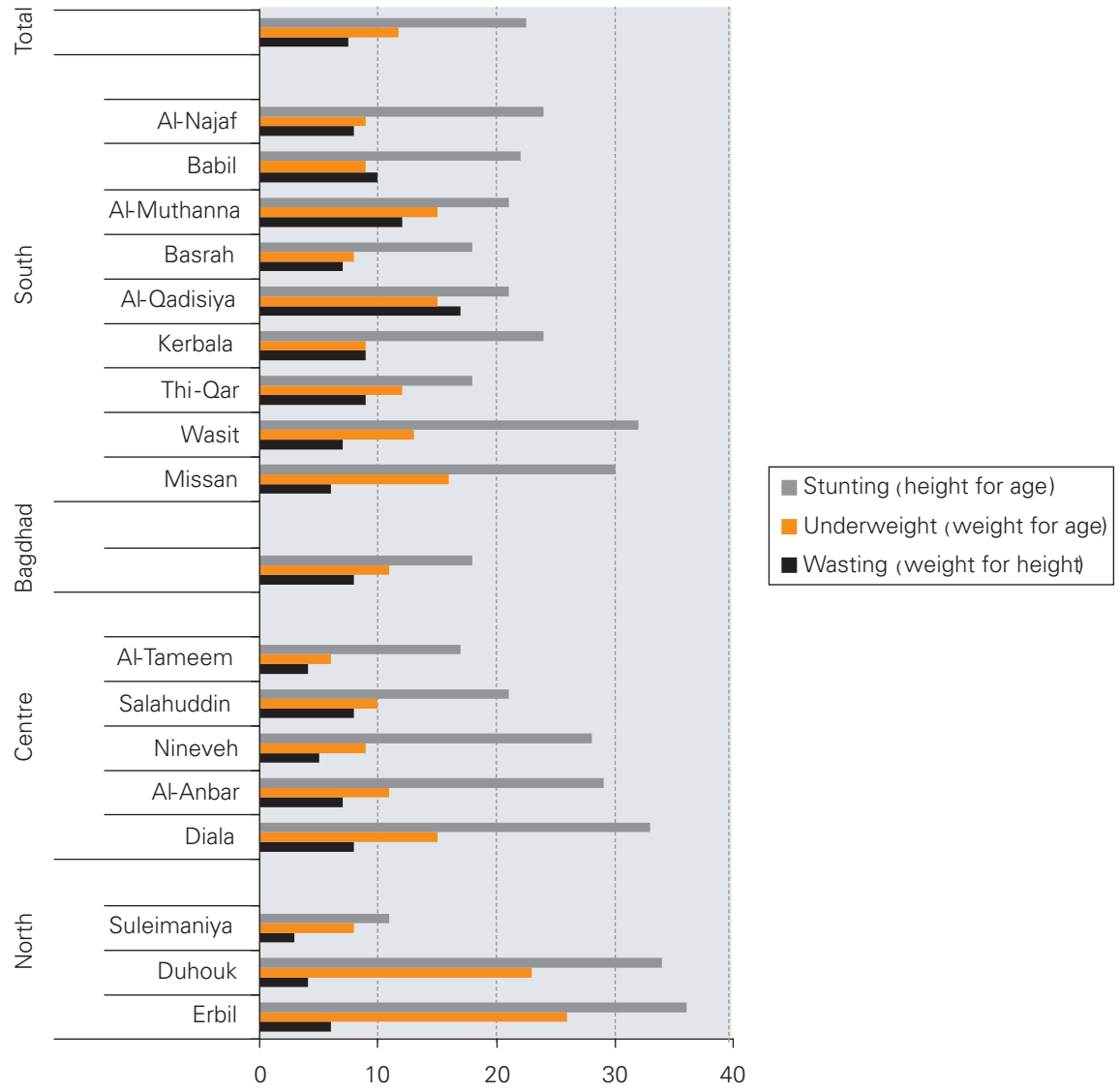
High levels of malnutrition in children six months to five years

In the ILCS, generally high levels of chronic, acute, and general malnutrition are found. On average, 12 percent of Iraqi children between six months and five years are underweight, i.e. have a weight that is 2 z-scores below the median in their age group. Eight percent suffer from acute malnutrition (low weight-for-height), and 23 percent suffer from chronic malnutrition (low height-for-age). Acute malnutrition affects the youngest children most (Figure 28). In those aged between six and 11 months, the prevalence of wasting is as high as 17 percent, and the prevalence of severe acute malnutrition is 10 percent. General malnutrition is more evenly distributed between the age groups, and the level of chronic malnutrition increases slightly with age.

Acute malnutrition most prevalent in the south

There is a marked difference in the prevalence of malnutrition between the regions and governorates (Figure 29). According to the weight-for-height measure, the prevalence of acute malnutrition is highest in the southern region, with a regional average of nine percent wasting. In Al-Qadisiya, as many as 17 percent of the children suffer from wasting. The northern region is relatively better off, but even here, four percent are acutely malnourished.

Figure 29: Malnourished children by measure and governorate, in percent of Iraqi children between six months and five years



Chronic malnutrition, reflected in the height-for-age measure, is most prevalent in the central region, with a regional average of 26 percent stunting, and nine percent severe stunting. In the northern governorates of Erbil and Dahouk, the level of chronic malnourishment is very high, while the level of acute malnourishment is lower than the national average.

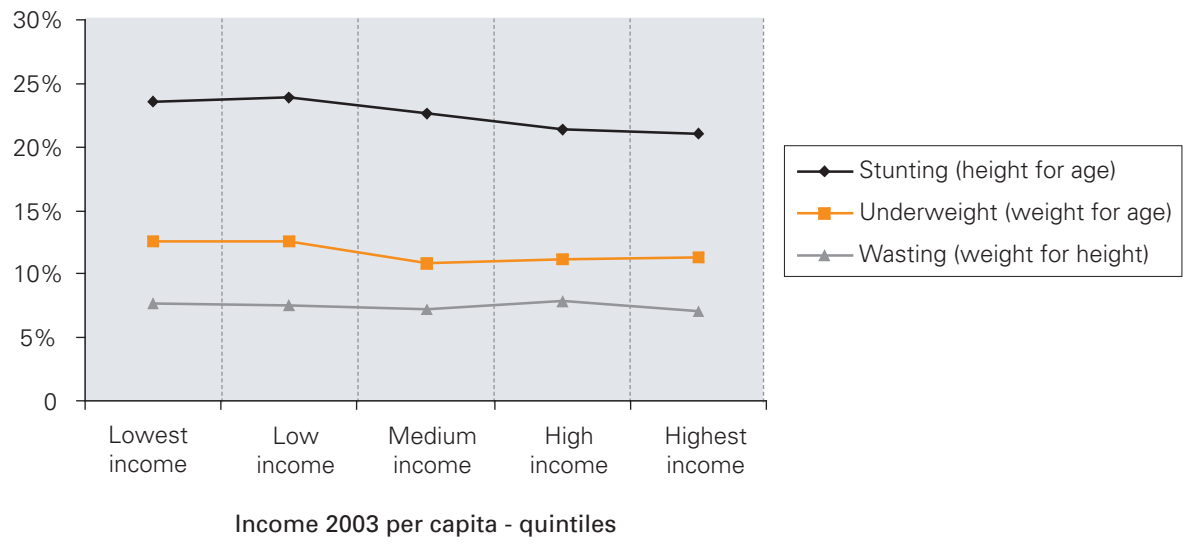
The governorates in which the total level of malnourished children is highest also have the highest levels of severely malnourished children (Table 46).

In Al-Qadisiya, where the total level of acute malnutrition is highest, the prevalence of severe wasting is also highest, at six percent. The level of

Table 46: Severely and moderately malnourished children aged six months to five years by measure and governorate

		Wasting (weight for height)		Underweight (weight for age)		Stunting (height for age)	
		Severe (-2 to –3 z-scores below median)	Moderate (-3 z-scores below median)	Severe (-2 to –3 z-scores below median)	Moderate (-3 z-scores below median)	Severe (-2 to –3 z-scores below median)	Moderate (-3 z-scores below median)
	Erbil	2,1	3,5	10,1	15,8	15,6	20,2
North	Dahouk	0,9	3,1	4,7	17,8	13,5	20,2
	Sulaimaniya	0,6	2,1	1,3	6,8	2,4	9,3
	Diala	2,0	5,6	3,7	10,9	11,5	21,2
	Al-Anbar	1,9	5,0	2,0	8,8	9,6	18,6
Centre	Nineveh	0,9	3,7	1,8	7,2	9,6	18,4
	Salahuddin	1,6	6,0	2,1	7,5	6,3	14,7
	Al-Tameem	1,1	2,6	0,4	6,0	3,7	12,6
Baghdad		1,8	6,3	2,1	8,6	6,1	12,0
	Missan	2,2	4,0	2,9	12,5	10,8	19,2
	Wasit	1,8	4,8	2,8	9,6	10,9	21,2
	Thi-Qar	2,0	7,2	3,0	8,7	5,5	12,2
	Kerbala	2,6	5,7	2,1	9,7	7,6	15,9
South	Al-Qadisiya	5,6	11,6	5,4	16,1	6,9	14,3
	Basrah	1,9	5,1	1,3	7,1	6,9	11,3
	Al-Muthanna	2,7	8,5	2,9	11,7	6,8	14,2
	Babil	2,3	7,8	2,3	7,4	7,7	13,9
	Al-Najaf	1,9	5,6	2,1	7,0	7,5	16,4
Total		1,9	5,6	2,6	9,1	7,7	15,0

Figure 30: Level of malnutrition in relation to family income, in percent of Iraqi children 6 months to 5 years



severely stunted children is highest in Erbil and Dahouk, at over 13 percent. In Erbil, the level of severely underweight children is also highest, at 10 percent.

Malnutrition correlates little with income, some with caretaker's education

Malnutrition is found to afflict young children in Iraq from all income groups (Figure 30). The amount of malnutrition is found to vary very little with the economic situation of the family. As can be seen from Figure 30, the level of acute malnutrition is almost identical in the five income groups, while general and chronic malnutrition is slightly more common among the poorest. The level of general malnutrition falls from 13 percent among the lowest income quintiles to 11 percent among the highest income groups, and chronic malnutrition falls steadily with higher income from 24 percent to 21 percent. In the present situation, it thus seems that familial wealth does not protect children from malnourishment. This can be seen as an indication that the distribution of food baskets reaches those who need it most, thus compensating for lack of income.

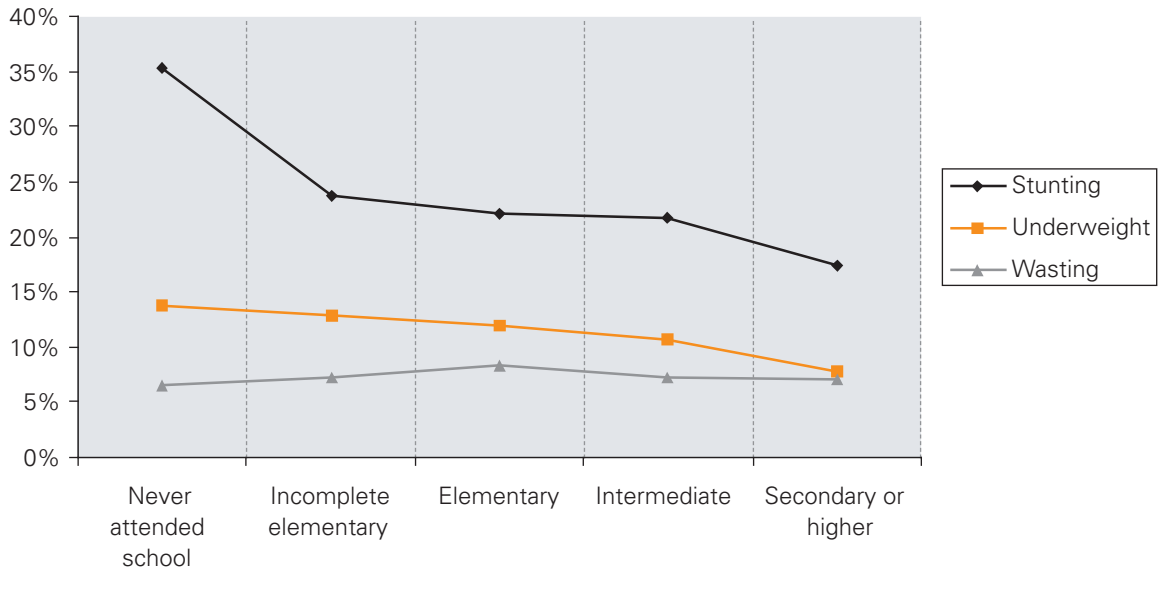
Levels of chronic and general malnutrition are found to be much more closely related to the caretaker's levels of education than to family income (Figure 31). Among children with caretakers who never attended school, the prevalence of stunted children is 35 percent, while among children of caretakers with secondary school or higher, 17 percent are stunted. The level of underweight children falls steadily from 14 to eight percent with secondary or higher education of the caretaker. For acute malnutrition, however, there is no such tendency; the prevalence remains at the same level regardless of the caretaker's level of education.

The nutritional status of male and female children in the data is almost identical. The differences are insignificant, and not systematically in favor of one gender. Similarly even rates of malnutrition between girls and boys was found in the Child and Maternal Mortality Survey (Salman & Al-Dulaymi 1999), and the Multiple Index Cluster Survey 2000 (Unicef & CSO Iraq 2001), while a survey by FAO and WFP in Baghdad and Kerbala in 1997 found that boys were more likely to be underweight than girls (FAO & WFP 1997). The ILCS and previous findings indicates that when it comes to sharing food within Iraqi families in a situation of food scarcity, preference is not given to children of one gender.

Levels of malnutrition have stabilized at a high level

There have been several studies on malnutrition in Iraq over the last decade. They have all shown high levels of malnutrition, but there has been considerable variance in results, even when the measurements have been done in the same population with short intervals. For instance, three consecutive surveys conducted by the FAO and WFP in 1996 (FAO & WFP 2000), 1997 (FAO & WFP 1997) and 2000 (FAO & WFP 2000), found levels of acute malnutrition in Baghdad of 11 percent in 1996, then three percent the following year, and then back to 11 percent in 2000.

Figure 31: Level of malnutrition in relation to caretaker's education. Iraqi children six months to five years, in percent of children 6 months to 5 years



Generally, in anthropometric studies, the results will be given with some degree of uncertainty, even when the sample is big enough and well drawn. This is mainly because measuring weight and height is more difficult in practice than in theory. The tendency is that children are measured as shorter and heavier than they really are because the knees are not properly straightened out, for a more accurate height measurement, and not all clothes items are taken off, for a more accurate weight measurement. This tends to give an overestimation of the number of stunted children, and an underestimation of the number of wasted children. Furthermore, the real age of a child is not always known. This has a large impact on the levels of stunting and underweight, which are both calculated relative to age. Random measurement error, due to noting down the wrong number, etc, tends to give higher estimates of malnutrition, because there are fewer in that group to start with. Variation in results on acute and general malnutrition may also be due to different temperatures at the time of measurement. If the temperature is very high, the children will sweat a lot and thereby lose fluid, resulting in a lower weight. The ILCS study was performed during a rather warm season.

In order to find robust trends in the level of malnutrition in Iraq, comparison with previous national household surveys with a design resembling the ILCS are of particular interest. One such example is the standardized Multiple Index Cluster Surveys (MICS), developed by Unicef. The MICS 2000 in Iraq surveyed a representative sample of 13,114 households from all governorates (Unicef & CSO Iraq 2001). The MICS from 1996 covered all governorates, although results from the north were released separately from that of the centre and south. Another survey that included all regions in Iraq was conducted by the International Study Team in 1991 (Chase et al. 1991). They surveyed a representative sample of 9,034 households from all governorates, and measured height and weight of 2,902 children from these households.

In Figure 32, trends in malnutrition are drawn from the International Study Team survey from 1991, through the MICS surveys from 1996 and 2000, to the ILCS findings from 2004. The levels of all types of malnutrition are seen to have increased dramatically from 1991 to 1996, and thereafter fall towards the year 2000. During the last four years, the prevalence of chronic and acute malnutrition is seen to have increased slightly. The level of general underweight is found to have decreased further, but it is still considerably higher than it was in 1991.

In order to explore the robustness of the ILCS findings, it is also of interest to compare them directly with the most recent surveys. In December 2003, the Iraq country office of World Food Programme (WFP) conducted a nationwide household survey based on 28,500 households (WFP Iraq country office 2004). In addition, the Food and Agriculture Organization (FAO) and WFP together conducted a household survey to assess nutritional status in Baghdad and Kerbala between April and June in 2003 (FAO & WFP 2003), with a total representative sample of 450 households from these governorates. The findings are compared in Table 47.

Figure 32: Trends in malnutrition 1991-2004, household surveys

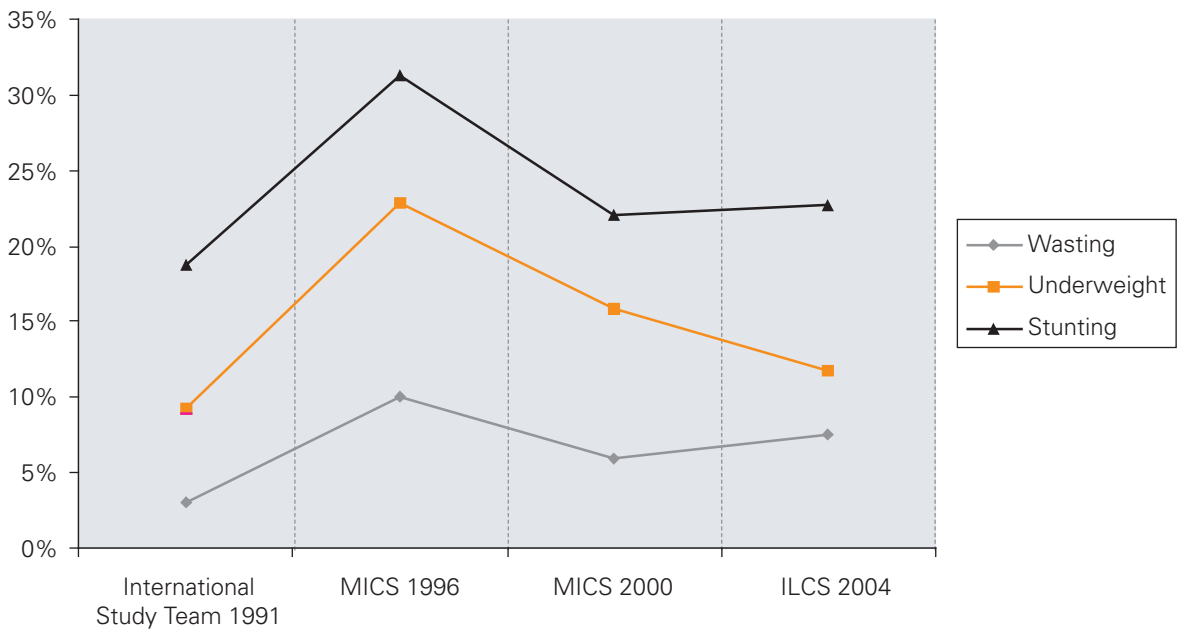


Table 47: Malnutrition. Household surveys by FAO summer 2003, WFP December 2003 and ILCS spring 2004, in percent

	Bagdhad			Kerbala			Iraq		
	Wasting	Under-weight	Stunting	Wasting	Under-weight	Stunting	Wasting	Under-weight	Stunting
2003, FAO	8	13	16	7	10	21	-	-	-
2003, WFP	4	8	20	3	9	18	4	12	28
2004, ILCS	8	11	18	9	9	24	8	12	23

These three studies, all of which were conducted within 12 months, give slightly different estimates of the level of malnutrition. In particular, the WFP Iraq office found lower levels of acute malnutrition than were found in the FAO and ILCSs. This may partly be explained by seasonal variation. There are also some differences in the level of stunting, which are not likely to reflect a real change because levels of stunting do not change very quickly.

The overall picture that emerges when comparing the ILCS results with previous findings is that the prevalence of all forms of malnutrition has stabilized at a very high level.

Nearly all Iraqis receive food baskets

There have been rapid and marked changes in food security in Iraq. In 1990, the average dietary intake was around 3,300 calories (FAO & WFP 1997). Over the decade, the average dietary intake sunk by more than 1,000 calories per person (FAO & WFP 1997). When the first UN sanctions were imposed in August 1990, the Iraqi government responded by setting up a system of food rationing. The ration provided per person per day was around 1,300 calories (FAO & WFP 1997). In the aftermath of the attacks on Iraq in January and February of 1991, there came various alarming reports of malnutrition. In 1997, the UN Security Council Resolution 986 (the "oil-for-food" programme) came into effect. Monthly "food baskets" were to be distributed by the government in the south and centre, and by international organizations in the north. By 2003, the rations provided around 2,000 calories per person a day (FAO & WFP 2003). While the provision of calories is approaching satisfactory levels, the provision of micronutrients such as iron, absorbable folate, iodine, and vitamin A has been less satisfactory (FAO & WFP 1997;FAO & WFP 2000). In June 2003, the FAO and WFO analysed the food rations and found that they supplied 81 percent of the United Nations recommended daily intake of calories, 71 percent of the recommended amount of proteins, 50 percent of the recommended intake of vitamin A, and 29 percent of the recommended daily allowance of iron. There was no iodized salt in the ration (FAO & WFP 2003). In September 2004, the WFP Iraq country office reported that 25 percent of Iraqi families were still highly dependent on the monthly food rations (WFP Iraq country office 2004).

In the ILCS, it was found that 96 percent of Iraqis were currently receiving regular food rations. In all governorates except Al-Anbar, the percentage was above 95 percent. In Al-Anbar, 84 percent of the respondents were receiving food rations. In all income groups and educational groups, the average was above 95 percent. Virtually all of those who answered that they were receiving food rations had received their last ration within the last month.

In light of the rather efficient coverage of food rations all over Iraq, the high rate of malnutrition is somewhat of a mystery. Curiously, the rate of malnutrition is not higher in Al-Anbar, where the coverage of food rations was lower, than elsewhere. The findings lead one to question whether the rations reach the children. Possible explanations may be that only parts of the rations arrive in the households; the rations are sold to achieve other necessary goods; or that the food is not evenly distributed between adults and children inside the households.

Moderate levels of breastfeeding

Breastfeeding "on demand" is the optimal feeding for full-term babies during their first half-year. The WHO recommends that infants be exclusively breastfed the first six months of life, and encourage breastfeeding up to two years of age or beyond. The rationale behind this recommendation is broad-based. Breast milk is nutritionally superior to other food, particularly in areas where alternative food has poor nutritional value. Exclusive breastfeeding protects the baby from being exposed to viruses, bacteria and parasites that may exist in added food and water. Breast milk in itself provides the baby with maternal antibodies, which protect against infectious diseases and quickens recovery. The feeding process strengthens the bond between mother and child, and might thereby also be of importance in the cognitive and emotional development of the child. Furthermore, breastfeeding postpones ovulation after birth and thereby contributes to spacing between childbirths.

Breastfeeding is natural, but it must also be learned. In order to establish and maintain breastfeeding, it is important that it starts immediately after birth, and that the mother is given the opportunity to feed the baby when it is hungry. The amount of milk produced is controlled by how much and how often the baby suckles. Breastfeeding is thus influenced by political choices such as maternal leave. According to Unicef, the "Maternal Law"—from as early as 1971—gave Iraqi women working in the public sector the right to seven months of paid leave in relation to childbirth (Unicef/Iraq 1998). This is longer and earlier than in many European countries. The provision of infant formula in the food baskets has been repeatedly criticized for discouraging exclusive breastfeeding (FAO & WFP 1997;FAO & WFP 2000).

The survey asked mothers if they were still breastfeeding their youngest child; the question was one of the first in a questionnaire specifically for women. Results indicated that at six months, 82 percent of the children were still breastfed; at 18 months, the rate was 56 percent; and at 24 months, 39 percent reported that they were still breastfeeding their youngest child.

The rates of breastfeeding found in the ILCS were higher than previous findings. In the Iraqi Multiple Index Cluster Survey (MICS) from 2000, it was found that 96 percent breastfed their child the first month. Half the children (51 percent) were breastfed alongside complementary food when they were six to nine months, and a quarter (27 percent) were still breastfed when they were 20-23 months (Unicef 2004a). The rates of exclusive breastfeeding were much lower, with 12 percent exclusively breastfed until they were six months.

In the neighbouring countries, the rates of breastfeeding vary. Unicef estimates that the percentage of children six to nine months that were breastfed in addition to complementary food for the period 1998-2000 was 50 in Syria, 70 in Jordan, 26 in Kuwait, 60 in Saudi Arabia, and 52 in the United Arab Emirates. The levels of exclusive breastfeeding were much lower but vary considerably, from the lowest rate found in Kuwait, at 12 percent, to the highest in Syria, 84 percent (both until four months), and around 30 percent in Jordan and Saudi Arabia (both until six months) (Unicef 2004b).

The relatively higher rates of breastfeeding found in the ILCS is an encouraging finding, particularly in the light of the high levels of malnutrition and infectious diseases. Still, these findings must be regarded critically, as they are not supported by previous findings.

Child health

One of the main childhood killers is diarrhea. Diarrheal diseases have multiple oral–fecal transmission routes, and most forms are prevented by good hygiene and clean drinking water. In 2002, WHO estimated that diarrhea accounts for 15 percent of under-five mortality worldwide. Before the war in 1991, two in 10 deaths among under five-year-old Iraqis were attributed to diarrhea; this share rose to four in ten after the war (Chase et al. 1991; USAID, Garfield, & Waldman 2003). The case fatality rate of diarrhea per 1,000 cases was reported to increase from 1.6 in 1990, to 19.3 in 1998 (United Nations Humanitarian coordination for Iraq HCG 2003, p.9).

The immediate cause of death due to diarrhea is dehydration. Adverse outcomes can therefore in most cases be avoided by simply securing adequate fluid intake. Oral rehydration salts facilitate rehydration, but the key principle of treatment of diarrhea is to increase fluid intake and continue feeding. The vast majority of diarrhea is caused by viral infections, which do not respond to antibiotics. Antibiotics are therefore in most cases nothing but an additional burden for the child, and should be avoided. Generally speaking, antibiotics that are not helping are harming.

Acute respiratory infection is another main killer in childhood. It is spread from one person to another through the air. Lower respiratory infections (pneumonias) are most often caused by bacteria and manifests itself by cough, fever, and being short of breath. As opposed to diarrhea, children with symptoms of lower respiratory infections benefit immensely from treatment with antibiotics, and prompt treatment may be life-saving. Upper respiratory infections (colds) are normally caused by viruses, and show symptoms such as runny nose, sneezing, and dry cough, and do not respond to antibiotics. Often, however, the distinction between upper and lower respiratory infections is not clear-cut, and there are many intermediate forms. Biologically, the airways are continuous, and milder infections of the upper airways often give way to more serious infections of the bronchia and lungs.

Fever may be caused by a number of conditions, including non-infectious diseases such as rheumatologic conditions and immunological

disorders. In practice, however, one may assume that a child with a fever suffers an infection of virus, bacteria, or parasites, since this is by far the most common cause.

In addition to the infectious diseases, accidents are a common and preventable source of ill health in childhood.

Incidence of infectious diseases, particularly diarrhea, highest among infants

In the ILCS study, information was collected on the incidence of "diarrhea", "fever", "cough or cold", "accidents" and "other illness" during the two weeks preceding the survey for children below five years. In this age group, 14 percent of the children had had a cough or cold, 14 percent had had fever, and nine percent had had diarrhea. Two percent had had other illnesses, and one percent had experienced an accident. The levels of acute illnesses found are thus quite high. This finding should be seen in relation with the high levels of malnutrition, which makes children more vulnerable of contracting infectious disease.

Figure 33 shows the incidence of the conditions asked about in each year-group below five years. Some children have more than one condition, so that the total number of children affected by any condition is less than the added incidence of all. In particular, many of those with cough or cold (58 percent) also had a fever.

As seen in Figure 33, the total burden of fever, diarrhea, and cough or cold is highest in the youngest age groups. This is as expected because the youngest children, especially infants, are most vulnerable to infectious diseases; this is particularly the case for diarrhea. More than four times as many infants (18 percent) as four year olds (four percent) suffered from diarrhea in the two weeks prior to the survey.

High incidence of acute respiratory infections in urban areas

When looking at the geographical distribution of acute disease (Figure 34), there are large differences with regards to the incidence of fever, cough/cold, and diarrhea. The incidence of all three infectious diseases was markedly higher in the northern and the Baghdad regions than in the centre and south. For "accidents" and "other illnesses", there is little geographical variance in their incidence.

The large urban-rural difference in incidence of cough/cold, diarrhea, and fever is mainly explained by the fact that communicable diseases are more easily transmitted when people live close to each other. This is especially important for coughs and colds, because airway pathogens are airborne. The crucial factor for the epidemiology of airway infections is how close people are to each other physically, or, literally, how many "breathe the same air".

In the urban areas, the percent that had experienced at least one episode of cough or cold during the fortnight preceding the survey was 17, as opposed to nine in rural areas. In the North, 21 percent had suffered at least one episode of cough or cold; the corresponding figure in Baghdad was 19 percent, as opposed to 13 and 10 percent in the south and centre, respectively. Among infants less than one year of age, exactly one in five (20%) had had a respiratory infection, while among three and four year-olds, one in 10 (11%) had had one.

Figure 33: Type of health problem last two weeks by age groups, in percent of Iraqi children in each age group

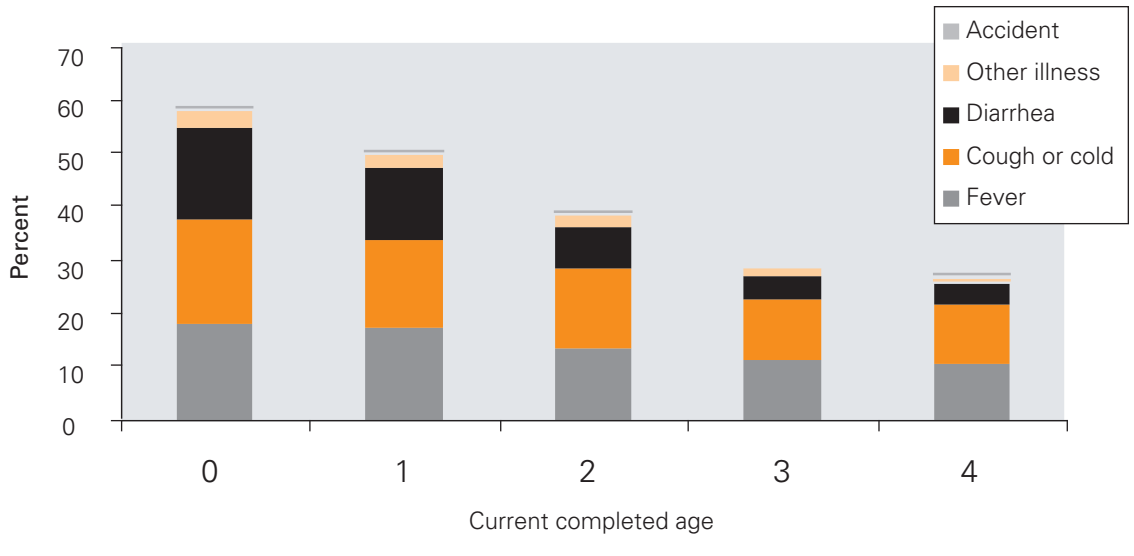
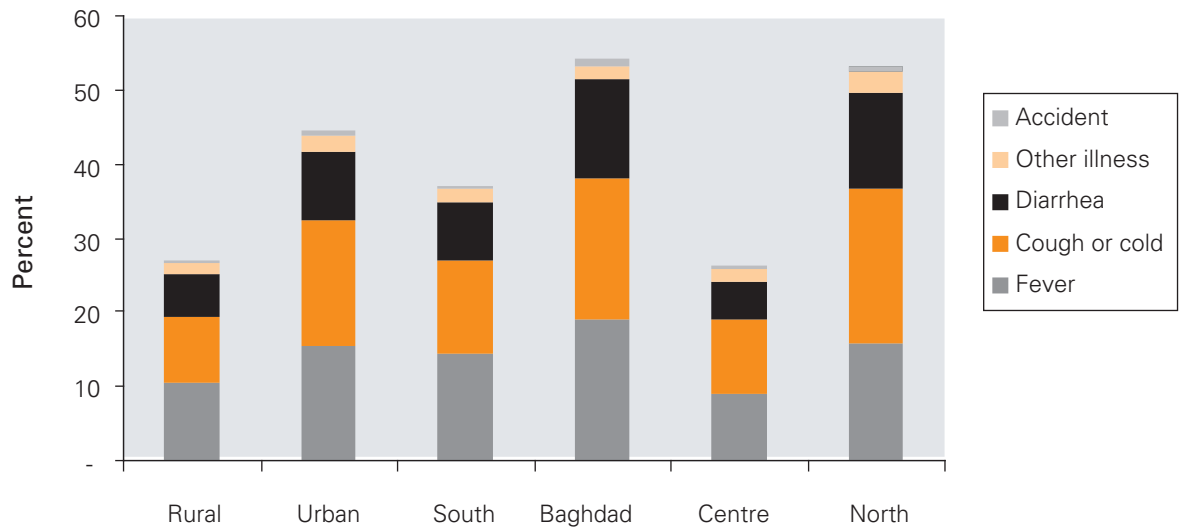


Figure 34: Incidence of health problems in last two weeks by region, in percent of Iraqi children less than five years-old



Since the question in the ILCS study regards both "cough" and "cold", it covers a wide range of respiratory infections, from very severe pneumonias to very light colds. Infections in the upper airways are much more common than in the lower airways, but in many cases, the distinction between "upper" and "lower" is unclear, and the symptoms could be characterized as either. An indication of the severity of the respiratory infection is whether the child also had fever. Out of those with a cough and cold, 58 percent also had a fever. This means that eight percent of children under five had symptoms of a lower respiratory infection (pneumonia), which requires treatment with antibiotics. Of the children with both cough/cold and fever, external help was sought for 88 percent.

In an earlier study (1998-2002), Unicef estimated that seven percent of 0-4 year-olds experienced an episode of acute respiratory infection during a two-week period, of which 76 percent were taken to a health care provider (Unicef 2004a). The ILCS findings on the incidence of acute respiratory infection are thus considerably higher than the Unicef findings. This may reflect an increase in the incidence, but it is quite likely to be caused by different inclusion criteria. Since there is no clear-cut distinction between more and less severe respiratory infections, slight variations in how the question is asked may yield very different results. Furthermore, for respiratory infections, there is large seasonal variance, and results of surveys conducted at different times of the year cannot be compared directly. Therefore, it can not be concluded that there has been an increase in the incidence of acute respiratory infection, but rather state that at present, the incidence is high.

No apparent relation between incidence of diarrhea and source of drinking water

One of the main causes of childhood diarrhea in poor countries is contaminated drinking water. One of the targets of the Millennium Development Goals, therefore, is to halve, by 2015, the proportion of people without sustainable access to safe drinking water. It is generally assumed that piped water into dwelling is "safe drinking water". This, however, is not necessarily the case.

An unexpected finding in the ILCS study is that a majority (63 percent) of the children who had experienced diarrhea had access to treated water that was piped into their dwelling. In fact, the incidence of diarrhea among those with water piped into the dwelling was 8.8 percent, whereas the incidence among those who drank water from a river/ stream was six percent. Altogether, the incidence among those who are considered to have safe drinking water was 9.8 percent, as opposed to an incidence of six percent among those who are considered to have unsafe drinking water.

One possible explanation for the lack of correlation between "safe drinking water" and lower incidence of diarrhea is that the piped water may be contaminated. During the war, there has been severe irregularity of the provision of electricity in Iraq. This has led to interruptions in the function of sewage pumps and over-flooding of the sewage system. A system of water pipes is seldom totally impermeable; this is why water pipes and sewage pipes should never be laid close to each other. In a situation of over-flooding sewage, it is likely that the piped water becomes contaminated. Epidemiologically, this theory is supported by local outbreaks of diarrhea. In the ILCS

sample, a particularly large incidence among those with piped water in some governorates were found (Dahouk, Sulaimaniya, Baghdad, Kerbala, Al-Najaf), while in other governorates, such as Nineveh and Diala, the incidence among those with piped water was low.

Another possible explanation is up-growth of pathogens in stored water. Household storage of water is a security measure to compensate for interruptions in the central water supply. Water contained for long periods, however, is at high risk of becoming contaminated, regardless of whether it was taken from a clean source originally. In the ILCS study, it was found that an overwhelmingly high percentage of households have a water tank. In all governorates except Kerbala and Al-Qadisiya, more than 65 percent have one, and in many governorates (Dahouk, Nineveh, Sulaimaniya, Al-Tameem, Erbil, Al-Anbar, Salahuddin), the percentage is well over 90.

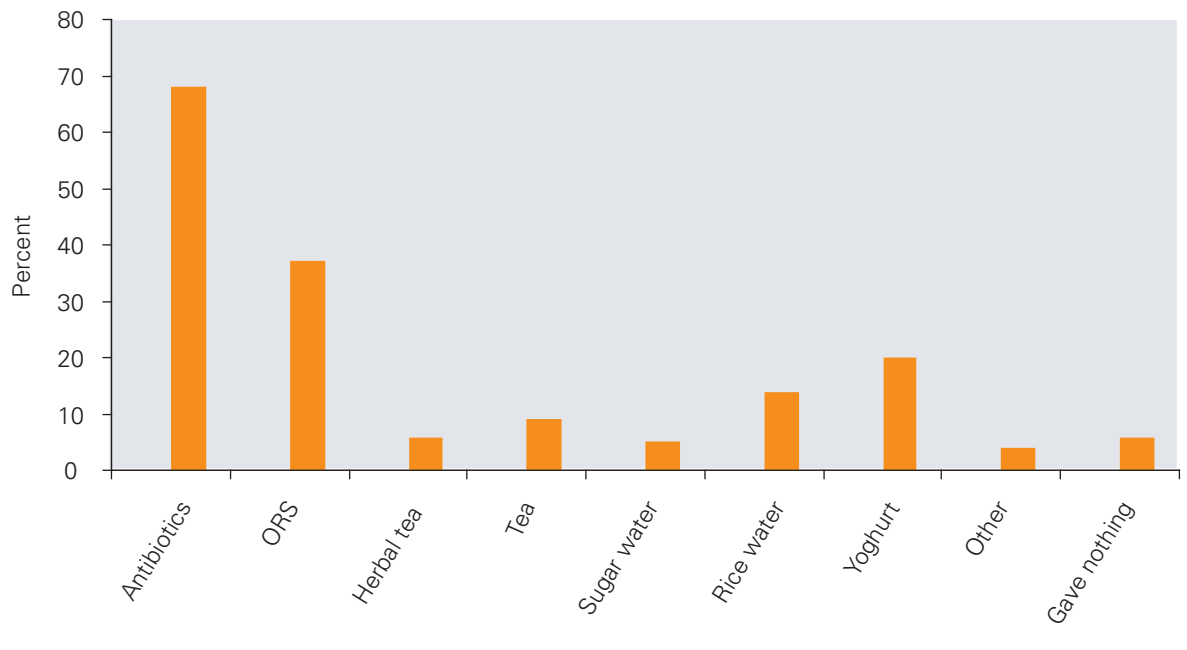
Having a water tank does not necessarily mean that one drinks from it, but in times of unstable water supply, this will often be the case. The vast majority report that they drink from the same source of water that they use for other purposes: in 14 of the 17 governorates, more than 90 percent drank from the same source, and in all governorates except Basrah, this percentage was over 80. The decisive factor in the quality of the drinking water may be how the stored water is handled. Overall only nine percent of the Iraqi households report that they purify their water, and in the rural area, the percentage is five.

Contaminated stored water could thus explain the lack of difference in incidence of diarrhea between different original sources of water, but needs to be further explored.

Altogether, the ILCS found that nine percent of the children below five years had experienced diarrhea in the two weeks preceding the survey. If the recall bias is not too large, and if no seasonal variation is assumed, this corresponds to an average of 2.4 episodes of diarrhea per child per year. The incidence of diarrhea over the preceding two weeks was highest in Baghdad (13 percent) and the northern region (13 percent). The governorates with the highest incidence rates were Dahouk (15 percent), Sulaimaniya (15 percent), Baghdad (13 percent), Kerbala (12 percent), and Al-Najaf (13 percent). The lowest incidence was found in Nineveh (4 percent) and Diala (4 percent).

The ILCS findings of the incidence of diarrhea are considerably lower than previous findings. In a communicable disease profile of Iraq, the WHO estimates that the incidence of diarrhea in under five-year-olds increased from an average of 3.8 episodes per child per year in 1990, to nearly 15 episodes per child per year in 1996 (WHO 2003). In 2000, a household survey conducted in northern Iraq showed that as many as 30 percent of children under five years had suffered from diarrhea in the two weeks prior to the survey. This corresponds to an average of 7.9 episodes per child per year in the northern region (WHO 2003). The seasonal variance is less for diarrhea than for respiratory infections, and the definition also causes less problems, so these findings may reveal a real reduction in the incidence of diarrhea, which may be seen in relation to efforts to improve the sanitary system and the provision of electricity and drinking water. Still, the current incidence is high, particularly among the youngest children in urban areas and in the north.

Figure 35: Treatment of children who had diarrhea in last two weeks



Children with diarrhea treated with antibiotics

Respondents whose children had had diarrhea the two weeks prior to the survey were asked about how they treated their child. More than one response was allowed, and the total is therefore more than 100 percent (Figure 35).

On average, 68 percent of the children with diarrhea were given antibiotics. Conversely, only 37 percent of the respondents gave the recommended treatment of oral rehydration salts (ORS), alone or in combination with other treatments.

Only 24 percent, or one in four, increased the total intake of fluids as recommended. As many as 18 percent of the mothers had reduced breastfeeding during the child's diarrhea; 22 percent had increased breastfeeding, as recommended, and 20 percent had not changed the breastfeeding pattern. Altogether, 55 percent of the children were reported to drink much less, or somewhat less, during their diarrheal episode. Considering that the lethal danger with diarrhea is dehydration, reduction in fluid intake is dangerous behavior.

The pattern of how diarrhea was treated varied very little between urban and rural areas, and had no apparent relation to the family income. There was, however, slight geographic variance in the preferred treatment. In Baghdad and in the south, the proportions that gave antibiotics were slightly higher (73 and 70 percent, respectively) than in the central and northern regions (59 and 65 percent, respectively). The lowest rates of ORS treatment to children with diarrhea were found in Sulaimaniya (15 percent), Erbil (20 percent), and Salahuddin (22 percent). Giving yoghurt and rice water was more common in Baghdad and the southern region than in the centre and northern regions.

The ILCS findings correspond well with previous Unicef findings of an oral rehydration rate of 21 percent in the period between 1994 and 2002 (Unicef 2004a).

Three out of four of those who gave medicine to their child with diarrhea had had the medicine prescribed from a health worker. The high rate of prescribed medicine indicates that health workers in Iraq continue to overuse antibiotics for children with diarrhea. This may perhaps be rooted in the Iraqi tradition of emphasis on specialized, interventionist care rather than on preventive medicine (Unicef/Iraq 1998). Altogether, these and previous findings demonstrate severe overuse of antibiotics in the treatment of children with diarrhea, and apparent gaps in the knowledge of the importance of rehydration.

4. Reproductive Health

Summary

Most Iraqi women are assisted by an attendant at delivery. For deliveries during the five years prior to the ILCS, an average of 96 percent were attended by a nurse, doctor, or midwife. The category "midwife", however, probably includes both traditional and formally trained personnel. In rural areas, almost half of the deliveries took place at home. A "midwife" oversaw 84 percent of these deliveries, and almost half could not receive an ambulance to their dwelling in case of emergency. In urban areas, 65 percent gave birth at a hospital where the majority were overseen by a doctor. The high rate of homebirths in rural districts is of concern, and may be seen in relation to the finding that 68 percent of the rural population are "unsatisfied" or "very unsatisfied" with the health services.

The coverage of prenatal care was on average 87 percent of pregnancies. The average number of prenatal health care visits was five. Most of those who received prenatal care were attended by a doctor at least once. Among women with little education, in low-income groups, and in rural areas, the coverage was considerably lower. In rural areas, the main reason for not seeking help was long distance to facility, and in low-income groups the main reason was cost.

The level of postnatal care is low with 58 percent of the women not receiving any health checks during the 40 days following childbirth.

Tetanus vaccination rates were lowest in rural areas, among women who gave birth at home, and among low-income mothers. On average, 21 percent had not received a tetanus vaccination during the last pregnancy, and 11 percent had not received one in the last ten years.

The intervals between births are short but increasing. In urban areas, the mean number of months from last birth increased from 21 for babies born in 1965 to 36 for babies born in 2000.

Fourteen percent of births were to adolescent mothers of 19 years or less. Among adult women between 35 and 54 years, almost half are overweight. The prevalence deduction of overweight and obesity is lower among younger women, in rural areas and in the capita southern region.

Introduction

The fifth Millennium Development Goal (MDG) is to improve maternal health and reduce maternal mortality by three-quarters from 1990 to 2015. For no other population subgroup does mortality vary as much between rich and poor countries as it does for women during pregnancy and childbirth. For example, the lifetime risk of maternal death is approximately 1 in 10,000 for women in Western Europe, versus 1 in 20 for women in sub-Saharan Africa (Beaglehole & Bonita 1997). The maternal mortality ratio found in the ILCS study was 193 per 100,000 live births, and the calculated lifetime risk of maternal death is 1 in 125. This is somewhat lower than previous findings for Iraq, and is further discussed in chapter 2.

The single most important way to reduce maternal deaths is considered to be the presence of a skilled health professional at every birth. Skilled assistance at delivery is therefore chosen as a main indicator to monitor achievements towards this goal (WHO 2004b). Another crucial factor is that the delivery takes place at a clean place with appropriate equipment and access to rapid referral for complicated cases. That said, to fight maternal mortality and secure the health and well-being of the mother and child, the complete chain of care during pregnancy, delivery and following birth is crucial. Other important indicators of reproductive health are the total fertility rates, the age at first delivery, and the birth intervals.

In this chapter, the ILCS findings of coverage of reproductive health services and birth history are discussed.

Child delivery

Almost full coverage of birth attendance, but how skilled?

A "skilled attendant" is defined as "a health professional - a midwife, doctor or nurse - who has been educated and trained to proficiency in the skills needed to manage normal deliveries and diagnose, manage or refer obstetric complications" (WHO 2004b). For the year 2003, there was no reliable data on the percent of births attended by skilled personnel in Iraq; this is left open in the UNDP Human Development Index (UNDP 2003b).

In the ILCS study, data on delivery care was obtained for all births that occurred in the five years preceding the survey. In the sample, data on the outcomes of a total of 22,849 pregnancies were collected.

Findings indicated that an average of 43 percent of the births were assisted by doctors, 20 percent by a nurse, and 33 percent by a midwife. Other attendants played a smaller role; two percent were assisted by a traditional birth attendant, two percent by a relative or a neighbour, and less than one percent by the husband (Figure 36). Less than one percent had no help at all. This means that, at a national level, 96 percent of deliveries were assisted by what may be assumed to be a "skilled birth attendant". However, as will be discussed below, the term "skilled" may not be appropriate for all of these.

When only looking at the total rates of "skilled delivery assistance", the geographic distribution is quite stable. Ninety-one percent of deliveries in rural areas were assisted by either a doctor, a midwife or a nurse, compared to 98 percent in urban areas. Although some governorates have lower coverage - Dahouk (80 percent), Salahuddin (85 percent) and Al-Muthanna (88 percent) - the overall level of attendance is quite similar between the governorates. The total level of birth attendance found in the ILCS is similar to previous findings for neighbouring Jordan (97 percent), Kuwait (98 percent) and Saudi Arabia (91 percent), and higher than Syria (76 percent) (Unicef 2004b).

However, when the type of birth assistant is compared, large geographical differences materialize (Figure 36). There are particularly large differences between the governorates with regards to the proportion of deliveries attended by a "midwife".

The type of assistance received clearly depends on where the delivery took place (Figure 37). Almost all homebirths are attended by a midwife, and most hospital births are attended by physicians. Among births occurring at home, 84 percent are assisted by a midwife as the main helper, 5 percent by a nurse, and 2 percent by a physician. Traditional birth attendants oversee 6 percent of these births. In contrast, 69 percent of births in public or private hospitals are overseen by a physician, 29 percent by a nurse, and 2 percent by a midwife. In private hospitals, more

Figure 36: Type of birth assistance, in percent of deliveries in last five years

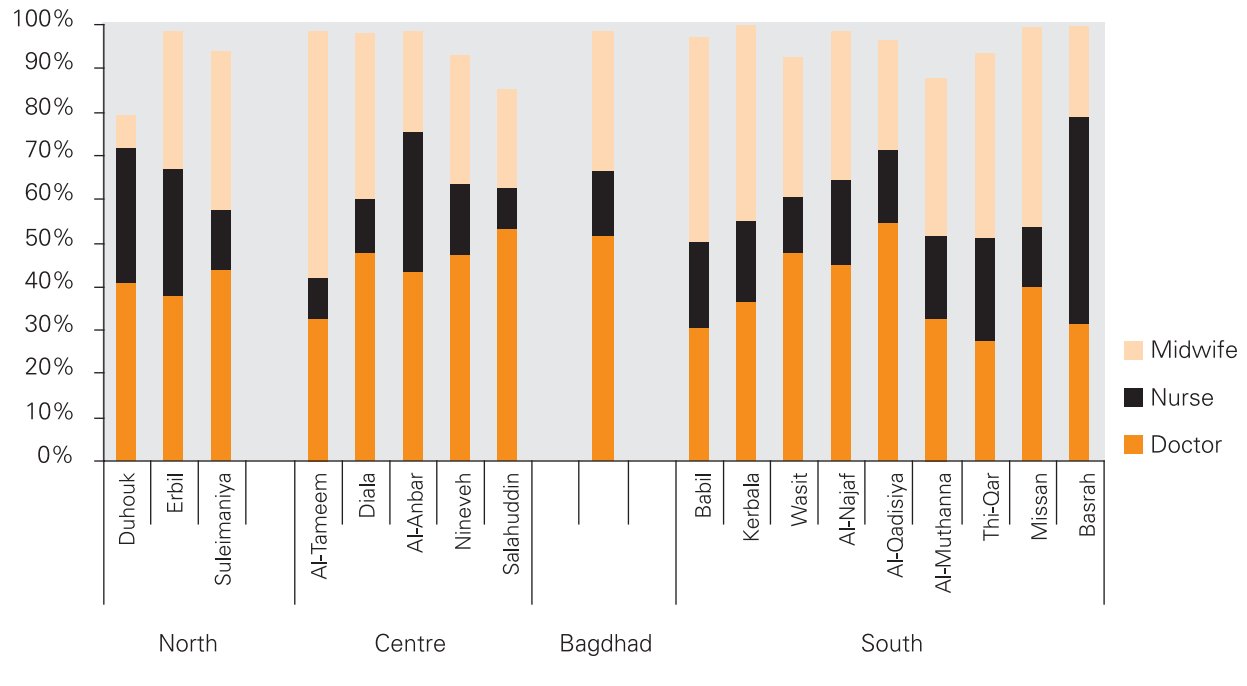
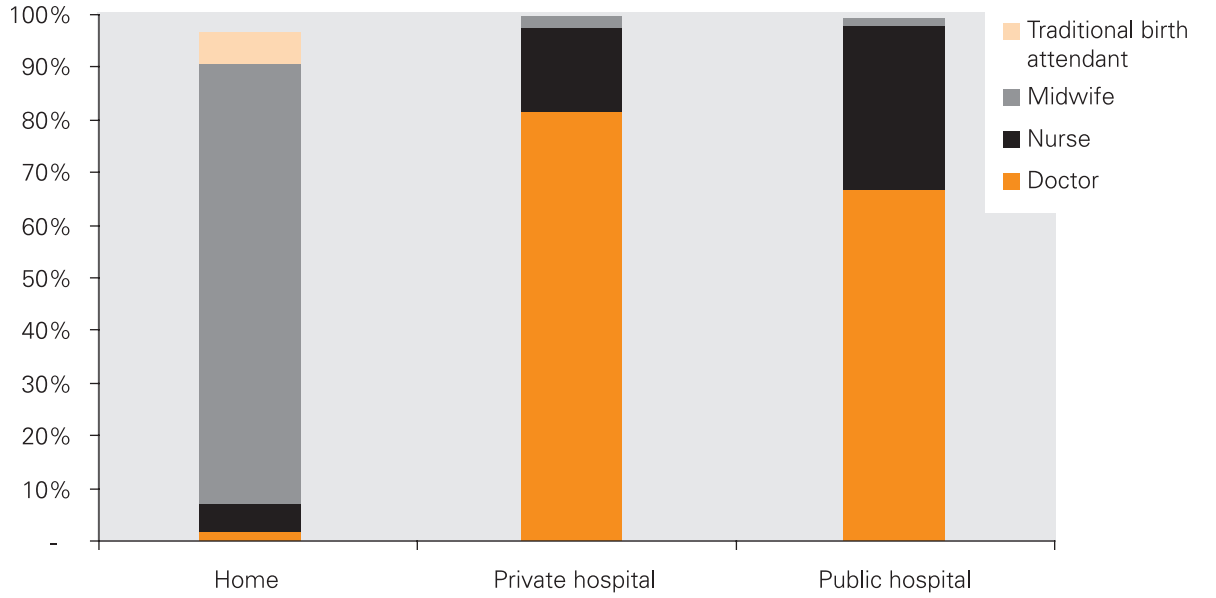


Figure 37: Type of care by place of delivery, in percent of deliveries in last five years



births are attended by a doctor and less by a nurse than in public hospitals. Midwives play a minor role in both private and public hospitals.

Given the low number of trained midwives in Iraq, it seems unlikely that as many as 84 percent of homebirths were assisted by one (Richard Garfield, personal communication). Rather, it seems more plausible that many of those who are called midwives do not have formal training, thus they should in fact have been classified as traditional birth attendants or auxiliary midwives. In the ILCS, the interviewers were instructed to include only birth attendants with a formal education. However, the level of skills was not specifically asked for, and it may therefore have been miscoded.

In the Multiple Index Cluster Survey (MICS) for Iraq in 2000, almost a quarter of the births were found to be assisted by traditional midwives. This survey concluded that the total coverage of skilled birth assistance was 72 percent. More specifically, they found that 28 percent had been assisted by a doctor, 37 percent by a trained midwife, and 24 percent by a traditional midwife (Unicef & CSO Iraq 2001).

Given the flight of Iraqi health personnel during the last years, it is not likely that the attendance of skilled personnel has actually increased between 2000 and 2004. More likely, the category "midwife" in the ILCS dataset contains both trained and traditional midwives.

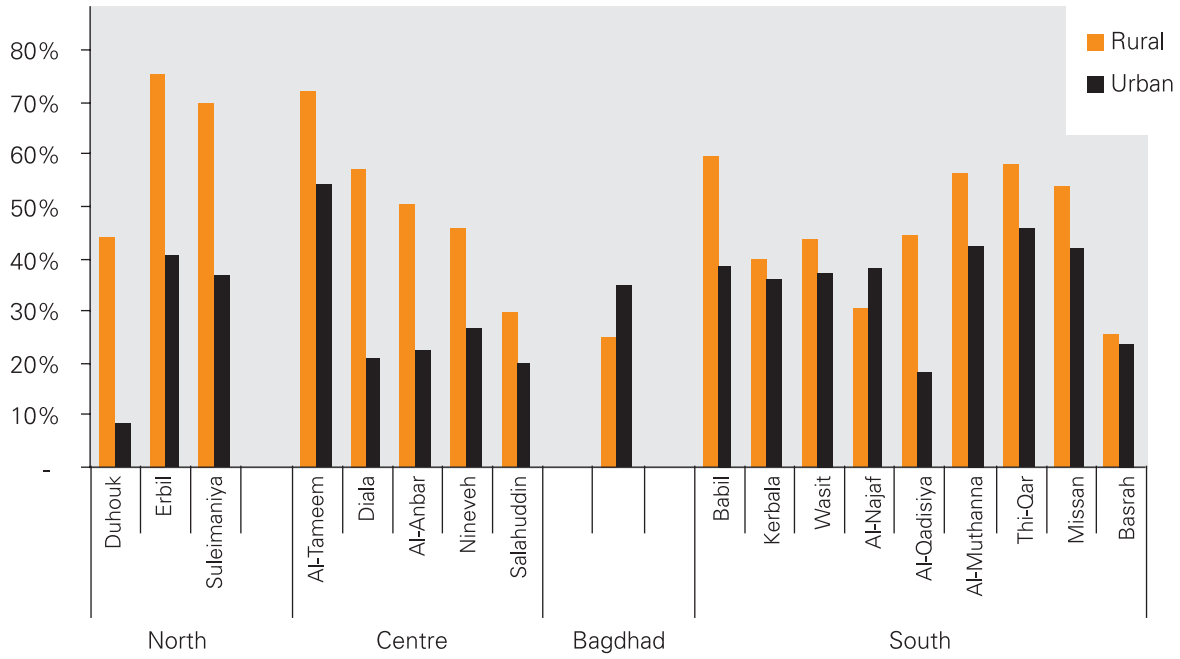
In rural areas, half of deliveries take place at home

Almost all deliveries (99 percent) in the five years preceding the ILCS took place either at hospital (private or public) or at home. Births at home are a concern because the locality may not be clean and fit for the purpose, and because the assistance may not be as qualified as in a hospital. Furthermore, emergencies may arise that cannot be handled at home or be referred quickly enough to a competent institution.

Furthermore, marked geographical differences with regards to the rate of homebirths are found. Overall, 37 percent of births during the five years prior to the survey occurred at home, 53 percent in public hospitals, and 9 percent in private hospitals. Private hospitals were more frequently used in urban areas (nine percent) than rural areas (four percent). In rural areas, nearly half of births occurred at home, compared to 33 percent in urban areas. In some of the governorates the percentage of home deliveries is particularly high, especially Al-Tameem (59 percent), Babil (49 percent), Al-Muthanna (50 percent), and Thi-Qar (50 percent). The differences in rates of homebirths are even larger when looking at the rural and urban districts of each governorate separately (Figure 38).

In all governorates except Baghdad, there were more homebirths in rural than in urban districts. Baghdad is the governorate where the distinction between rural and urban areas is most unclear. In the northern and the central districts, the urban-rural differences are largest and the overall rate of homebirth is highest. In rural areas in Erbil, Al-Tameem, and Sulaimaniya, over 70 percent of the women gave birth at home.

Figure 38: Percent of homebirths in rural and urban parts of governorates in last five years



Rapid access to specialized care is crucial in case of obstetric complications. If a woman during childbirth starts to bleed uncontrollably or gets seizures, or if the baby is distressed, the time frame for lifesaving action is limited to minutes. This is the main reason for the recommendation of giving birth at a hospital. Of those who gave birth at home in the rural districts, 40 percent could not receive an ambulance by road to their dwelling. For these women, one cannot assume that any kind of referral system functions. In case of complications, these women and their attendants are, in practice, left to handle the case on their own.

The high rates of homebirths cannot be explained only by long distance to health care facilities. In rural areas, among those who had to travel for more than 30 minutes to get to a hospital, the percentage who gave birth at home was 42, as opposed to 49 percent homebirths among those living closer to a hospital. The same was the case in urban areas: living close to a hospital did not decrease the probability for giving birth at home.

One possible explanation for the differences between rural and urban districts is that rural women are more influenced by traditional values and more reluctant to be taken care of by male doctors in the hospitals. Since approximately one-third of hospital doctors are women (Unicef/Iraq 1998), the chances of women being attended by male doctors is high. At home, however, the woman giving birth can personally choose the assistance of a female midwife.

Another possible explanation is that the hospitals in rural districts are of such poor standards that rural women actually consider it safer to give birth at home. This theory is supported by the finding that satisfaction with health services is much lower in rural than in urban areas. While a total of 29 percent were unsatisfied or very unsatisfied with the health services in urban areas, the corresponding figure for rural areas is as high as 68 percent. This question was asked with five response alternatives ranging from very satisfied to very unsatisfied. Normally in such questions, the middle categories are most frequently chosen. An unusual - and clearly significant - finding is that in the rural areas of Iraq, as many as 39 percent answered that they were very unsatisfied with the health services. In rural areas of Sulaimanyia, where 70 percent of the women gave birth at home, as much as 78 percent of the respondents answered that they were very unsatisfied. It thus seems that dissatisfaction with health services explains the high rate of homebirths in rural areas better than long distance to hospitals.

Place of delivery and type of care vary with education and income

The total rate of assistance at birth by a nurse, a doctor, or a midwife is within one or two percentage points of the national average in all income and education groups. However, the type of care and the place of delivery vary strongly with income and education.

The biggest differences are seen in the proportion of women giving birth at home and at private hospitals. Out of the women who never attended school, 43 percent gave birth at home, compared to 25 percent of births to higher educated women (Figure 39). Only five percent of births to uneducated women occurred in private hospitals, compared to 18 percent of births to highly educated women.

Figure 39: Place of delivery by level of education, pregnancies over last five years

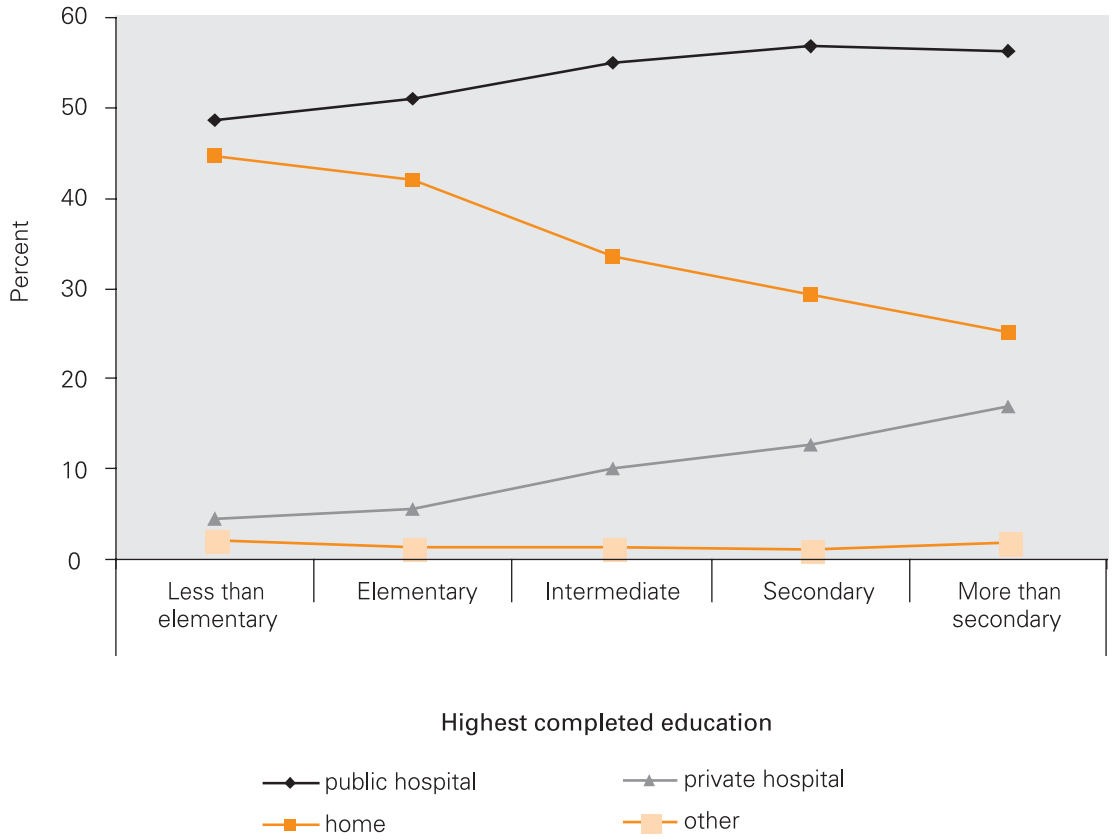
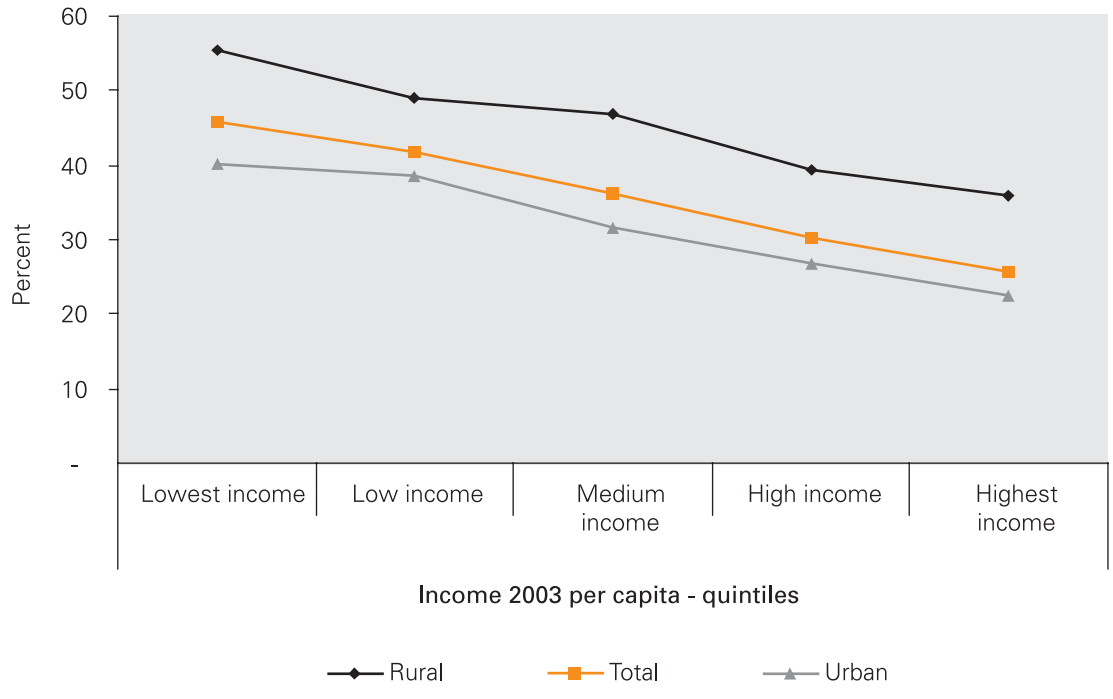


Figure 40: Percent who gave birth at home in rural and urban areas by income



When the population is divided into five groups according to how much they earned in 2003 (income quintiles), a similar picture emerges: Women with high income are much more likely to give birth in private hospitals than other women, whereas women with elementary school or less are much more likely to give birth at home. This tendency was found in both rural and urban districts (Figure 40).

Prenatal care

High coverage of prenatal care

Prenatal care is crucial to safeguard the health of the mother and her child throughout pregnancy. The care consists of identifying and acting upon medical complications such as anaemia and pre-eclampsia; following the child's growth and position in the uterus; providing general health education; making sure the child is protected from neonatal tetanus through vaccination of the mother; and detecting and referring high-risk deliveries before birth. The WHO recommends that the first prenatal care visit should occur within the first trimester of pregnancy, and that there be a minimum of four health visits during the pregnancy.

In the ILCS study, a relatively high level of prenatal care coverage was found: some 87 percent of pregnancies during the five years preceding the survey were monitored by a midwife, nurse, or physician. Pregnancies over the five-year period prior to the survey were, on average, overseen by five visits, and no variation in background characteristics, such as location or socio-economic status, result in an average of less than four visits.

These results are slightly higher than previous WHO figures from 2001, when a prenatal care coverage of 78 percent was found (Department of Reproductive health and research 2004). These levels are similar to neighbouring countries such as Jordan (96 percent), Saudi Arabia (90 percent), and Kuwait (95 percent) - and higher than in Syria (71 percent) and Iran (77 percent) (Unicef 2004b).

Similar to the findings of the attendance at deliveries, marked variation in coverage between rural and urban areas were found. Rural areas lag behind, with a prenatal care coverage of 76 percent compared to 91 percent in urban areas. The lowest prenatal care coverage is found in heavily rural governorates, particularly Nineveh in the Central region and Al-Muthanna in the South (Figure 43).

Moreover, it is found that that the prenatal care coverage is related to the woman's socio-economic background. Some 80 percent of pregnancies are monitored for women in the lowest per capita income quintile, compared to 92 percent in the highest. About the same difference is found for pregnancies among women who never attended school (81 percent monitored) versus those with higher education (94 percent). Nonetheless, 80 percent coverage for these more vulnerable groups can be considered a rather good result.

Figure 41: Not vaccinated against tetanus during last pregnancy in rural areas

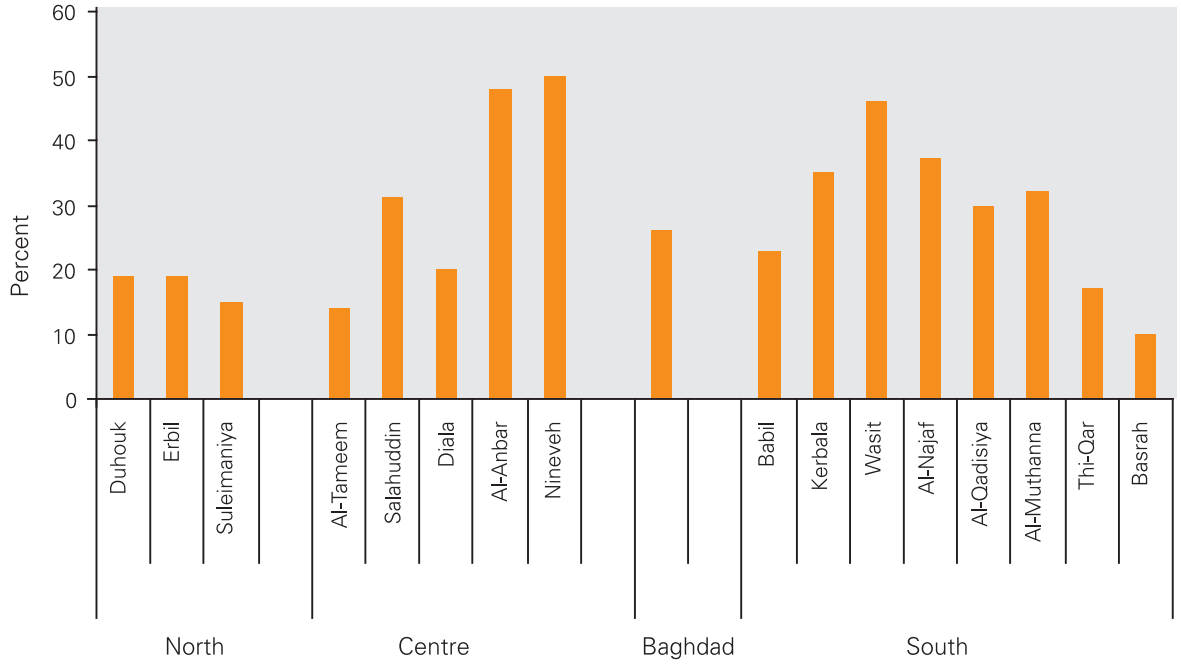


Figure 42: Coverage of postnatal care and proportion who could not afford it, by income groups

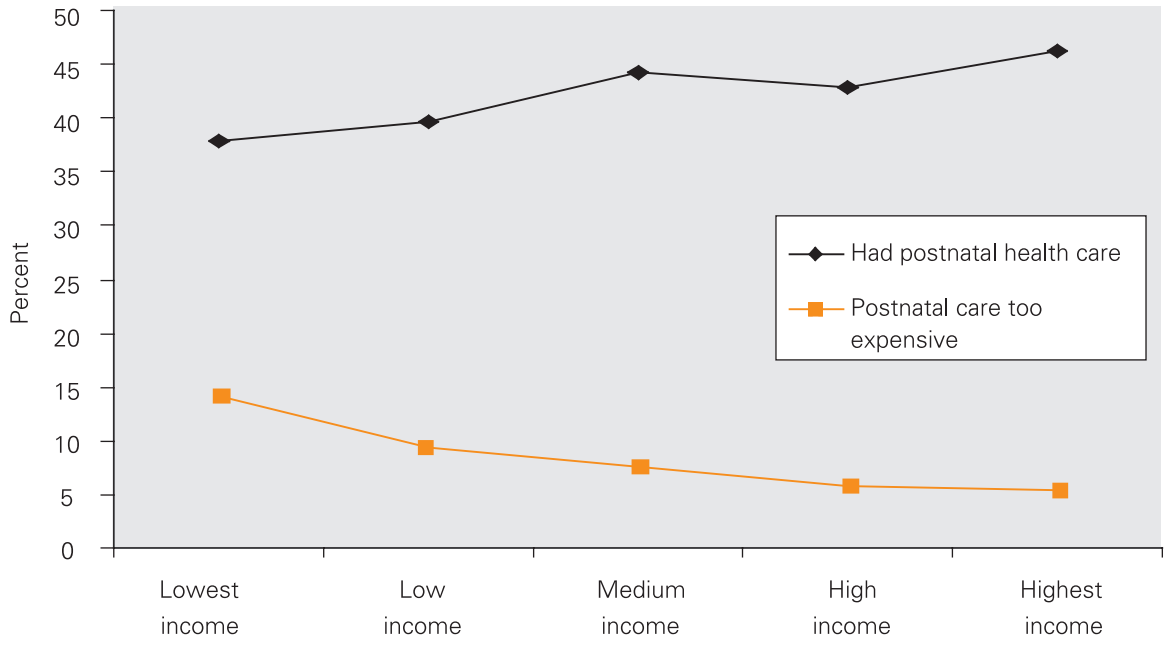
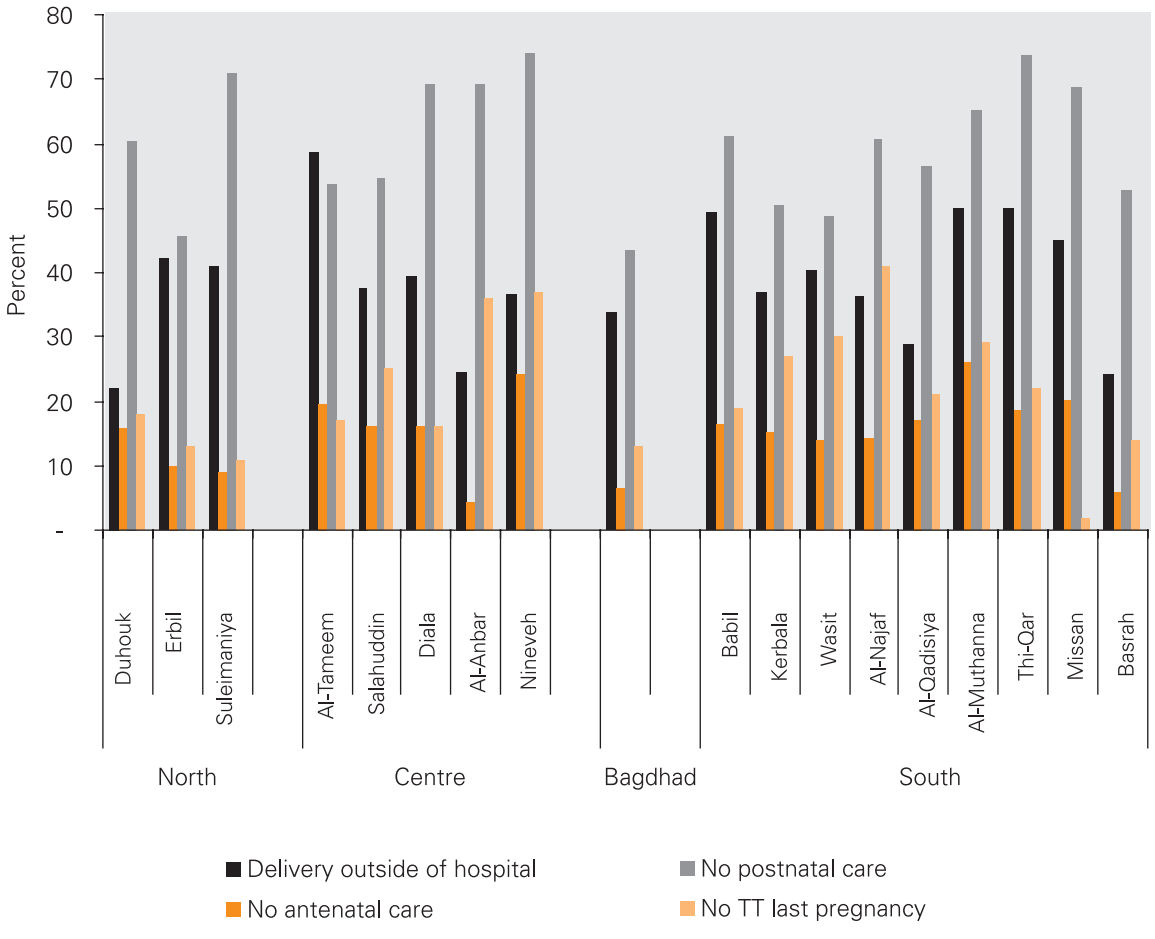


Figure 43: Geographical gaps in coverage of reproductive health services, in percent of pregnancies in last five years



Another important aspect of prenatal care is the timing. While the proportion of pregnancies that have been attended at least once is quite high in Iraq, women are commencing care slightly later than recommended by the WHO. About half of pregnancies were monitored within the first three months, and another 30 percent had the first visit during the fourth month. Late initiation of prenatal care is most common in the southern region, where 60 percent are not monitored within the first three months. Income does not appear to influence the likelihood of commencing care early, but education clearly does. Increasing levels of the woman's education correlates with earlier initiation of prenatal care.

Women who did not seek out prenatal care during their pregnancies were further questioned about the reasons for failing to do so. For some 40 percent of those who did not seek care during the pregnancies, the reported reason was that there was no need; for 26 percent it was that the care was too expensive; and for 15 percent, that it would be too far to travel. Security concerns were cited as the main reason for not seeking care in less than one percent of the cases.

The main reasons for not seeking prenatal care varies in urban and rural locations. While 23 percent of the rural women who did not seek care reported long distance to health services as the main reason, this was the case for only five percent in urban areas. Women in urban areas, however, more often reported that they "preferred not to get care". There are also differences between socio-economic groups. As Fafo has found elsewhere in the region (Blome Jacobsen 2000; Hanssen-Bauer, Pedersen, & Tiltnes 1998), highly educated women and those with high incomes are more likely to consider that there is no need for prenatal care than their counterparts. In Iraq, 49% of the women with the highest income and education who did not seek prenatal care gave the reason that it was not necessary. For pregnancies among low-income women, the cost of care was the main constraint, accounting for 38 percent of those who did not seek care.

The majority of women receive prenatal care in health clinics. Richer women tend to get their care in private clinics, while poorer women tend to use public clinics: half of pregnancies among women in the highest income group were monitored in a private clinic, compared to 34 percent of pregnancies among the lowest income quintile. Hospitals are less popular (14 percent), except in the north (29 percent). Health institutions run by non-governmental organizations (NGOs) and occupation force facilities were not important sites for prenatal care in any governorate. Among pregnancies overseen by a trained health worker, 98 percent have been monitored at some point by a physician. The majority are solely monitored by physicians. (Respondents are allowed to have multiple responses so the total adds up to greater than 100 percent). There is very little variation in this pattern, although pregnancies among low income and uneducated women are slightly more often monitored by a nurse and midwife than others. However, this appears to be in addition to, rather than in place of, physician monitoring, since 97 percent of pregnancies among this group are also monitored by a physician.

The level of prenatal care coverage is quite similar to the level of assisted deliveries. Curiously, however, while 84 percent of prenatal care was handled by doctors, this was the case for only 43 percent of the deliveries. Thus, if one considers assistance by physicians as a higher level of care than assistance by midwives or nurses, the coverage of prenatal assistance may be considered better than the coverage of birth attendance.

Coverage of tetanus vaccination poorest where most needed

Neonatal tetanus (NT) is one of the leading causes of death from vaccine-preventable diseases among children worldwide. Generally, neonatal tetanus is heavily under-reported because the incidence is highest in the most remote areas, where access to health services and reporting systems are poorest. Tetanus is caused by a potent neurotoxin produced by bacteria growing in necrosed tissues in dirty wounds. It may affect neonates if delivery, or cutting of the umbilical cord, has not been clean. Even when intensively treated, lethality of neonatal tetanus is high. All member states of WHO and UNICEF have agreed to the aim of eliminating neonatal tetanus as a public health problem - defined as an incidence of less than 1 per 1000 live births - by 2005 (Vaccines and Biologicals, WHO 2003). In Iraq, a decline in the incidence of neonatal tetanus has been reported. This may reflect changes in reporting routines, or may be a real reduction that mirrors the worldwide downward slanting tendency in the incidence of neonatal tetanus.

There are two main strategies for achieving the goal of eradicating neonatal tetanus. First is the provision of clean delivery services to all pregnant women, with emphasis on sterile cutting of the umbilical cord and clean handling of the stump. Second is the vaccination during pregnancy of all women that are not fully protected, with at least two doses of tetanus toxoid (TT) given at least four weeks apart. When the mother is vaccinated, she produces antibodies that pass to the fetus across the placenta and protect the baby against neonatal tetanus. Tetanus vaccinations may be effective for up to 10 years, but the effect is much improved with a booster dosage closer in time to birth. The ideal vaccination programme of the mother depends on her immunization history. Unfortunately, in the course of the war launched in mid-March 2003, much of the stock of vaccines in the country were rendered useless because the cold-chain was broken (Unicef 2004c).

In the ILCS, it was found that an average of 79 percent of pregnant women had received at least one TT injection during their last pregnancy, and another

10 percent had been vaccinated during the 10 years prior to delivery. This means that an average of 11 percent of women do not even have a minimum of immunization. These findings are slightly better than previous results: the MICS study in 2000 found that 63 percent of pregnant women had received tetanus protection (Unicef 2003), while in 2002 Unicef estimated coverage of 70 percent. (Unicef 2004a).

There were, however, large geographical differences in the coverage. On average, 30 percent of rural women had not been immunized during their last pregnancy, as opposed to 17 percent of urban women (Figure 41). In the rural areas of Nineveh, Al-Anbar, Wasit, and Al-Najaf, respectively, 50, 48, 46 and 37 percent of the women had not been immunized during their last pregnancy, and more than 20 percent of the women had no protection at all, i.e. their last injection was taken more than 10 years ago.

The rate of coverage was also found to vary with socio-economic indicators. The rate of women who did not receive at least one TT injection during their last pregnancy rises in inverse proportion to the level of education and income. Twenty-three percent of women who had never attended school, and 23 percent in the low-income group did not receive at least one TT injection during their most recent pregnancy, as opposed to 18 percent among women with higher education and in the highest income group.

Partly overlapping with this trend are the differences seen according to place of delivery. Among women who gave birth in private hospitals, only eight percent were not immunized, as opposed to 17 percent who gave birth in public hospitals and 30 percent of those who gave birth at home. The differences in rate of immunization give an indication of the difference of quality of care between deliveries at home, at public hospitals, and at private hospitals.

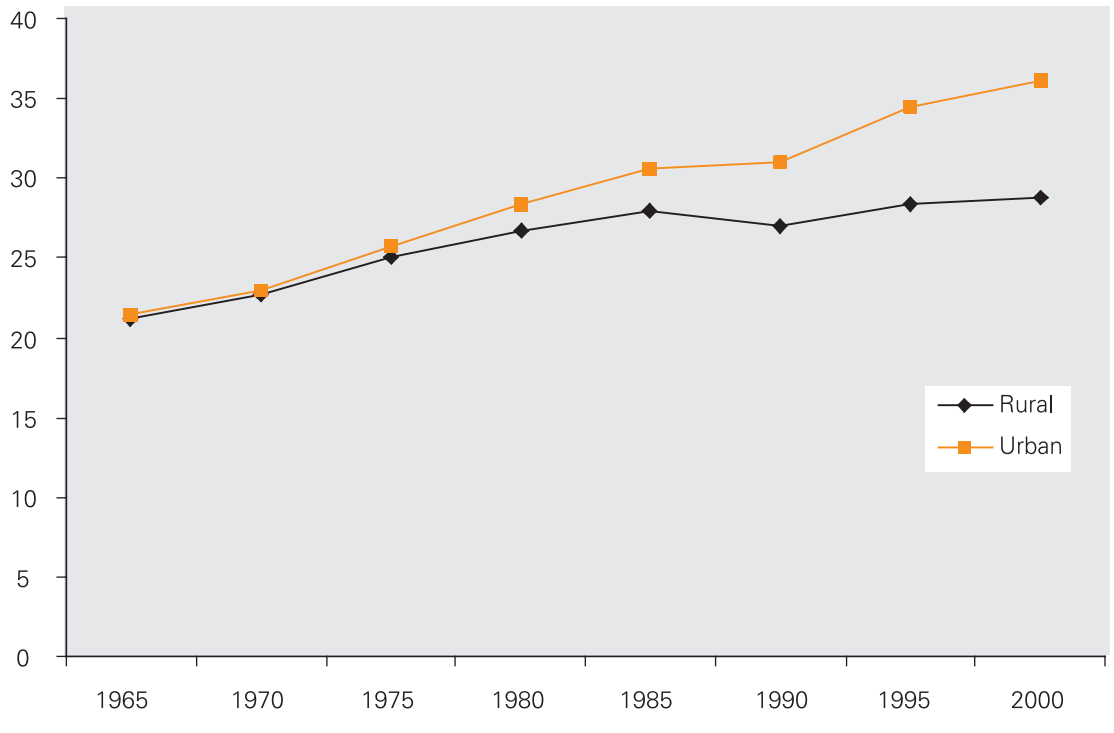
In short, the coverage of tetanus immunization is found to be poorest in rural areas and low-income groups, the very places and groups among which the incidence of neonatal tetanus can be expected to be highest.

Low coverage of postnatal care

In the postpartum period, health checks of mother and child and support for establishing breastfeeding should be available. Altogether, 42 percent of the women had one or more health care visit during the 40 days after giving birth. In the poorest income quintile the rate was 38 percent, rising to 46 percent in the highest income quintile (Figure 42).

Coverage of postnatal care was poorest in the central region, with only 33 percent. In the south, an average of 40 percent sought postnatal care; in the north 41 percent; and 57 percent in Baghdad.

Figure 44: Birth intervals. Mean number of months from previous birth



Of those who did not seek postnatal care, 66 percent said it was because they considered there was no need for it, and nine percent because they found it too expensive. The proportion who could not afford postnatal care was higher in the low income groups (Figure 42). In rural areas, 13 percent did not seek postnatal care because it was too far to travel, as opposed to two percent in urban areas. As with the reasons for not seeking prenatal care, the proportion of women who preferred not to have postnatal care, or considered there was no need for it, was highest among women with the highest income and education.

Best coverage of reproductive health care in Baghdad

Summing up the coverage of prenatal care, postnatal care, TT vaccination during last pregnancy, and delivery elsewhere than hospital, there is not a very clear picture of where the gaps are biggest (Figure 43). However, in the Baghdad region the gaps in coverage are clearly smaller than the national average on all measures. There is also a tendency that the central and the southern regions are worse off on almost all measures. Al-Muthanna, Salahuddin, Nineveh, and Dahouk are among the governorates with the poorest coverage of reproductive health services.

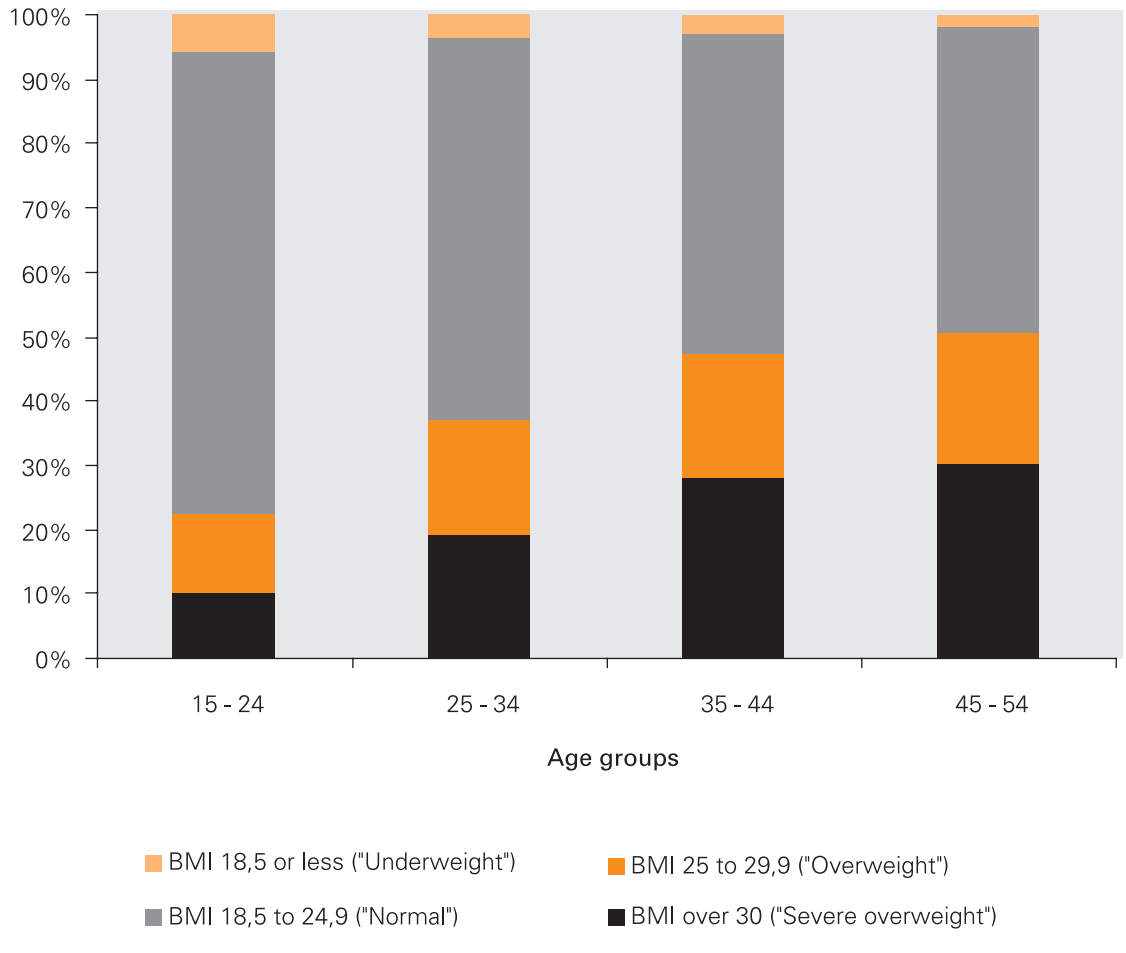
Mothers

Short but increasing birth intervals

Frequent pregnancies or those spaced very closely, run an increased risk for adverse health outcomes for mother and child at delivery.

In Iraq, the total fertility rate per woman is high but decreasing, falling from 7.1 in 1970-75 to around 4.8 in 2000-5 (UNDP 2003b). A similar reduction is seen in neighbouring countries. Between 1960 and 2002, the total fertility rate fell from 7.7 to 3.6 in Jordan and from 7.5 to 3.4 in Syria (Unicef 2004a). The contraceptive prevalence in Iraq, i.e. the percentage of married women aged 15-49 years currently using contraception, was around 44 percent in the period 1995-2000 (Unicef 2004a).

Figure 45: Body Mass Index among adult women



The intervals between births are short but increasing. Overall, 27 percent of the births reported occurred within 18 months of a previous birth, and 10 percent within 12 months. The mean number of months since the previous birth increased from 21 months for babies born in 1965, to 34 months for babies born in 2000. The median changed less, from 23 months in 1965 to 27 months in 2000. The spacing increased more in rural than in urban districts (Figure 44).

The number of short birth intervals found in the ILCS is similar to the results of Salman and Al-Duaymi in 1999, who found that 20 percent of the births are spaced less than 18 months apart (Salman and Al-Dulaymi 1999).

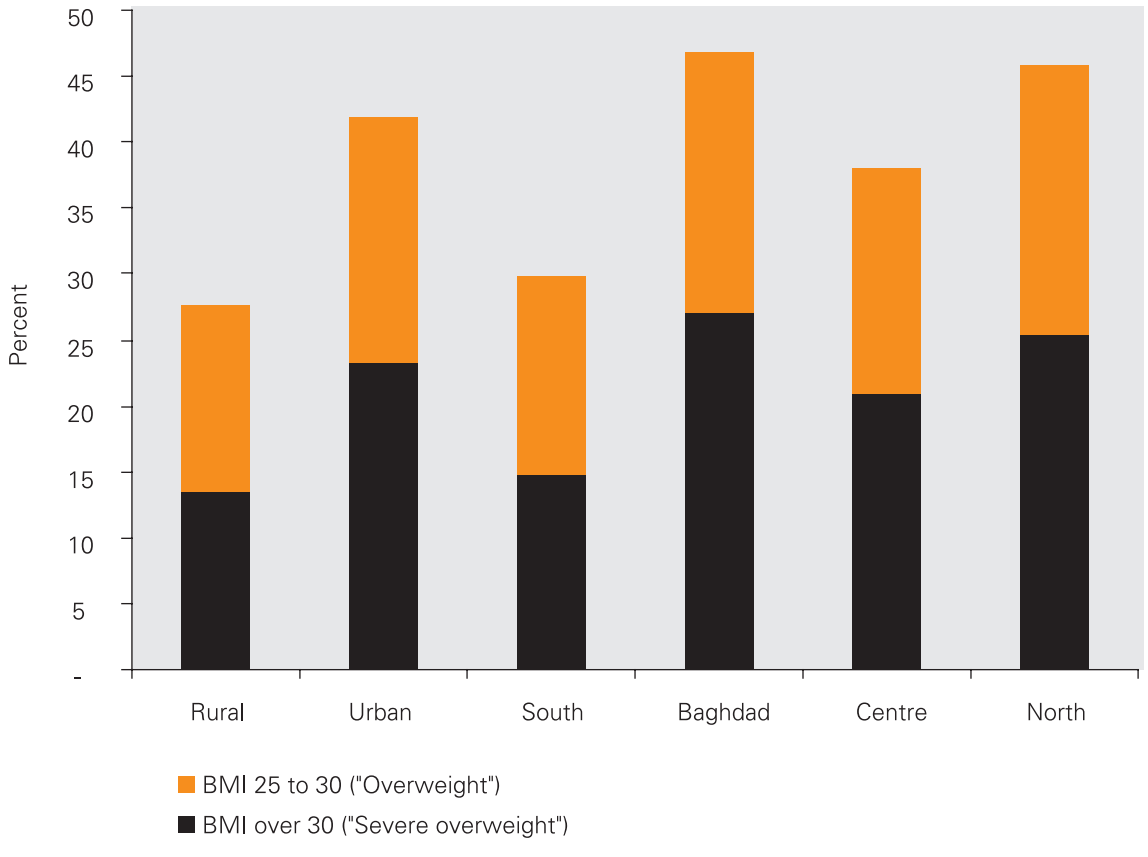
Many adolescent mothers

Deliveries among adolescents, defined by the WHO as persons between 10 and 19 years of age (less than 20 years), are associated with a higher risk of adverse outcomes for both the baby and the mother. Girls aged 15-19 are twice as likely to die from childbirth as women in their twenties (Safe Motherhood Inter-Agency Group 1998). Furthermore, babies born to adolescent mothers are more likely to die in the neonatal period (WHO 2004b). In addition to the medical problems at delivery, there are social and economic implications of adolescent motherhood. Childbirths at a very early age may interfere with the mother's further education and, indirectly, with the child's later welfare, because the youngest mothers are less equipped to take care of them.

It was found that the mean age for giving birth was 26.7 years. Although the age specific fertility rate for women 15 to 19 years is low, as discussed in the chapter on demography, the total number of women in this age group is large; hence many children are born to adolescent mothers. More than one tenth of births (14 percent) occurred among women less than 20 years. In the middle and low-income groups, the percentage was slightly higher than in the other income groups.

The average age at first birth to a large extent depends on cultural practices for marriage. In the ILCS study, more than a quarter of the respondents (27 percent) were married when they were 18 years or younger, and 14 percent when they were 16 years or younger. Approximately half of marriages were between first cousins. Three percent of the babies in these marriages had visible deformity/ies at birth as compared to 1.7 percent in marriages between non-related spouses. This is further discussed in the chapter 2.

Figure 46: Percent of overweight women aged 15 to 54 by region



One strategy for postponing the first pregnancy is to provide adequate sexual education and readily accessible contraceptives. There is evidence of numerous barriers to the utilization of health care by adolescents (WHO 2004b). This implies that the special situation and characteristics of adolescents and adolescent mothers has to be taken into account in order for the health services to reach them.

High prevalence of obesity among mothers

In the ILCS, the weight and height of children under five years and that of their caretaker, in most cases the mother, were measured. The data on children is reported in the chapter 3. The indicator most frequently used to get a comparable relation between weight and height for adults is the Body Mass Index (BMI). The weight in kilograms is divided on the squared height in meters. According to WHO classification, a BMI between 25 and 29.9 is overweight, and a BMI of 30 or above, is "severe overweight". For example, if a person is 1.70 meters tall and weighs 60 kilograms, she has a BMI of 21. If she gains 10 kilos, the BMI rises to 24, which is still considered "normal." At 80 kilos, the BMI rises to 28, which is considered "overweight," and at 90 kilos, she would have a BMI of 31 and be considered "severely overweight."

As opposed to the situation among the youngest children, underweight is not found to be a problem among adult women. On the contrary, in the age group between 15 and 45 years, overweight is more of a problem (Figure 45).

The problems of obesity are seen to increase with age. In the age group 45-55, half of the women are overweight, and about a third are severely overweight. There are almost no differences across income and education groups.

Obesity is more of a problem in urban than in rural areas. Baghdad and the northern areas are more affected than the southern and the central regions (Figure 46).

A high prevalence of overweight in the adult population has also been found in previous studies. In Baghdad in 2000, the WFP and the FAO found that 67 percent of adults were overweight, and that 30 percent were severely overweight (FAO & WFP 2000).

Obesity may be a desired condition to meet ideals of beauty and status, or it may be an unwanted situation. Its main causes are unhealthy diet, physical inactivity and a sedentary lifestyle, aggravated by less possibility of outdoor activities. The importance of physical activity is reflected in the finding that rural women are less obese than urban women. Another explanation for the high rate of overweight among women may be that women tend to eat last and finish the leftovers (mainly cereals) when the other members of the family have eaten, so their diet is very high in carbohydrates but contains less protein and important micronutrients (FAO & WFP 2003).

Both physical inactivity and obesity are important risk factors for developing cardiovascular disease and diabetes. Another major risk factor for developing cardiovascular diseases is the indication that an increasing part of the population is smoking. In 2000, the UNDP estimated that five percent of adult women and 40 percent of adult men smoked (UNDP 2003b). Cardiovascular conditions and conditions related to diabetes are already among the major causes of adult deaths in Iraq (Roberts et al. 2004). In light of the above, it is reasonable to foresee that the burden of these diseases will increase in the following years.

5. Health Status and Use of Health Services

Summary

The overall prevalence of self-assessed chronic illness in Iraq is eight percent, and higher in older age groups and among women. The estimated number of persons living with a chronic health problem directly caused by war is 223,000 with a 95 percent confidence interval of 205,000 to 242,000. In the ongoing war, more children, elderly, and women have been disabled than in previous wars.

Four percent of the respondents experienced acute illness or injury during the two weeks prior to the survey, of which 6 in 10 were hindered in daily activities for three days or more.

Among all population subgroups, around 8 in 10 of those with acute illness had sought some kind of external help. However, high-income groups seek more private and specialized care than do low-income groups. Among those who did not seek care, cost was a frequent reason among low-income groups and in rural areas, while high-income groups to a greater extent treated themselves. The cost of care varied more with the type of care sought than with the severity of the diseases.

Overall, almost all Iraqis (95 percent) live within one hour of the nearest hospital and 89 percent live within half an hour of the nearest health centre. In rural areas, however, a substantial proportion of the population lives further away from health institutions.

Introduction

In the 1980s, Iraq was widely considered to have one of the region's best health care systems, with advanced, technological specialist care, and an extensive net of primary health care. However, after years of war and sanctions, this situation has changed completely. Among the current major problems are lack of health personnel, lack of medicines, non-functioning medical equipment and destroyed hospitals and health centres. The health services are also heavily affected by infrastructure problems, including degraded or disrupted electricity supply, sanitation, and communications. The situation has been characterized in this way: "Iraq is a second world country, accustomed to a first world health system, which now has the epidemiological profile of a third world country (Garfield, Zaidi, & Lennock 1997)."

The probability of dying before the age of 40 for Iraqi children born between 2000 and 2005 is estimated at 18 percent; approximately three times the level in neighbouring Jordan and Syria (UNDP 2003b;UNDP 2004a). Between 1970-75 to 2000-05, the life expectancy at birth in Iraq increased by four years, from 57 to 61 (UNDP 2003b). In the same period, however, the life expectancy in Jordan, Syria, Saudi Arabia, and Iran rose by 17 to 20 years(Unicef 2004b). The demographic composition of the Iraqi population is further discussed in the population chapter.

In this chapter, the ILCS findings of prevalence of chronic illness, war-related causes of chronic illness, and incidence of acute illness and injury will be discussed in relation to the use of health services, starting with a brief review of some characteristics of the current Iraqi health system.

The Iraqi health system - from success to breakdown in one decade

The rapid breakdown of the Iraqi health system has been reported by several delegations of international health workers. Before the first Gulf war in 1991, Iraq had a net of around 1,800 primary health centres. By 2001, that number had fallen to 929, of which a third were considered to require rehabilitation (IRIN 2004). A group of international researchers found that in 1996, nearly one-third of hospital beds were closed, more than half of the hospital equipment did not work, and many departments did not have a functioning toilet. Lack of medicines and equipment forced through prioritization according to what could be done rather than what was needed (Garfield, Zaidi, & Lennock 1997). In 1997, it was estimated that three-quarters of the medical equipment was not operational (United Nations Humanitarian coordination for Iraq HCG 2003). In the course of the war launched in mid-March 2003, further destruction of infrastructure and health facilities were reported (Unicef 2004c). In 2001, the total expenditure on health was 3.2 percent of GDP, compared to 9.55 percent in neighbouring Jordan.

In the period 1990-2003, Iraq had approximately 53 physicians per 100,000 inhabitants, about one-third of the level in neighbouring Jordan, Syria, and Lebanon in the same period (UNDP 2003b;UNDP 2004a). There are several reasons for the lack of health personnel in Iraq. One is that Iraq had a high proportion of imported personnel who returned home in response to the first Persian Gulf War and the falling value of the Iraqi dinar; another is that national health personnel left the country for the same reasons. Health personnel have also left the public health sector for better-paid jobs in the private health sector or other sectors. Some of this decline may improve with the recent increase of salaries in the public sector. Still, there is a long way to go to reach pre-Gulf War levels. Furthermore, there is lag in the education of young doctors, and the scientific updating of the specialties has been hindered by lack of access to international medical literature since 1990 (Aschim, Holmboe-Ottesen, & Bordahl 2000).

The Iraqi health system has traditionally emphasized specialized health care and interventionist medicine, rather than primary health care and preventive medicine. In a Unicef report from 1997, the Iraqi health system was characterized as relying heavily on "import-dependent, high technology, curative biomedicine," with health promotion of secondary importance (Unicef/Iraq 1998). A Norwegian delegation of health workers characterized the Iraqi health system as having a strong specialist service, a relatively weaker level of primary health care, and little contact between the levels (Aschim, Holmboe-Ottesen, & Bordahl 2000).

Health status

The general health of a population is not easy to define and hence not easy to measure. For some purposes, self-assessments may be a better indicator than detailed objective measurements. For example, self-evaluations of health status have been found to predict life expectancy better than detailed assessments of health problems, physical disability, and biological or lifestyle risk factors(Centres for Disease Control and Prevention 2000;Idler & Kas 1991). On the other hand, asking respondents to report on their own chronic or acute illness does not set a threshold for how severe a problem should be to merit mentioning as an "illness" or an "injury." Most draw the line somewhere between an open wound and a bruise, and somewhere between a deep depression and sadness, but there may be differences in where.

In the ILCS, the general questions about health and disease are based on self-assessments. When interpreting the figures, it should therefore be kept in mind that this type of question reflects not only the incidence of acute illness or the prevalence of chronic illness, but also individual and cultural attitudes to what is reasonable to expect, and what are the borders of normality in terms of health and illness.

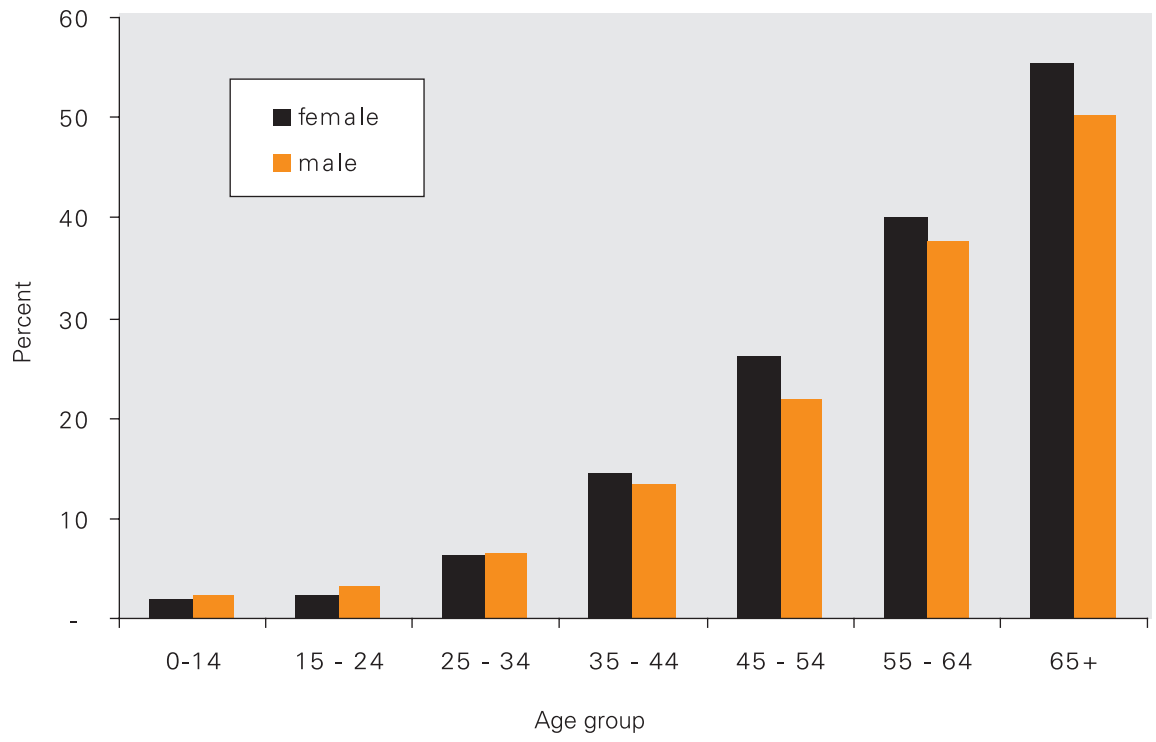
Chronic illness most prevalent among women and in older age groups

To explore the prevalence of chronic illness, each person in the household was asked whether they suffer from any physical or psychological illnesses of prolonged nature, or any afflictions due to an injury, a handicap, or age. The interviewer was asked not to include temporary complaints the respondent might be experiencing at the moment. The respondents who answered that they have a chronic illness were further asked if this chronic health problem or handicap makes it difficult for them to go out on their own, without the help of other people.

Overall, eight percent of the Iraqi population answer that they suffer from a chronic health problem. In most populations, the prevalence of self-assessed chronic illness is higher in the oldest age-groups than the youngest, and higher among women than men. This was also true in Iraq (Figure 47).

The highest level of chronic illness is reported among those with most and least education. However, many chronic conditions, such as high blood pressure or cholesterol, cause no symptoms in and of themselves. When looking at the percentage that reports difficulties in going out because of the illness, a different socioeconomic pattern emerges (Figure 48). While most of the chronic illnesses reported by the best-educated cause no difficulties in going out, those with least education report mainly chronic illnesses that do cause such problems. This may be due to several reasons: the best-educated are aware of more types of chronic diseases; have been more thoroughly investigated; or expect more from their health.

Figure 47: Percent of population with chronic illness



A similar pattern is seen when comparing chronic illnesses across income groups. In all income groups, an average of eight percent of the population responds that they currently suffer from chronic illness, but the proportion of those who have difficulties going out because of their illness is higher in the low-income groups.

Of male respondents with chronic illnesses, 15 percent reported a war-related cause, versus seven percent of females. Most of those living with a war-related chronic illness are in the middle age groups, which corresponds to those who were of soldiering age during the Iran-Iraq war. The most commonly reported cause is "other war-related event" (Figure 49).

More than 200,000 Iraqis with chronic illness due to war

In the survey, those who reported a chronic disability were asked about the reasons for their condition. Among the response categories were mines, shelling/bombing, imprisonment, and other war-related causes. These questions provided information about the number of Iraqis living with chronic health problems due to war, but not the total number who have been wounded; many more will have been wounded and afterwards healed, while others have died as a consequence of their wounds. The number of those who died due to war is discussed in the chapter on population.

The best point estimate of persons living in Iraq with a chronic disability caused by war is 223,000 with a 95 percent confidence interval of 205,000 – 242,000. The confidence interval is design corrected using the linearization procedure available in SPSS Complex Samples, version 12. This means, it can be said with 95 percent certainty that the true number is between these two extremes.

More children, women, and elderly are chronically disabled in the last war

In the survey, respondents with a chronic illness were also asked how old they were when the illness began. This information can be used to determine which war caused the war-related chronic disability/ies. The respondents may answer imprecisely about their ages. Therefore, it was considered that all reporting a chronic illness dating from 1996 onwards as referring to the current war, from the years 1990 to 1995 as referring to the first Gulf war, and from 1989 or before as referring to the Iran–Iraq war.

When comparing the age distribution of chronically disabled in these three wars, it is evident that during the Iran-Iraq war, mostly persons of soldiering age were affected: by far the biggest toll was in the age-group 20 to 29 years, with a considerable amount also in the age groups 10 to 19 and 30 to 49. This can be understood in the light of the fact that in the last phase of the Iran-Iraq war, younger boys and older men were also conscripted as soldiers.

Figure 48: Difficulties with going out becuase of chronic illness, in percent of population in education groups

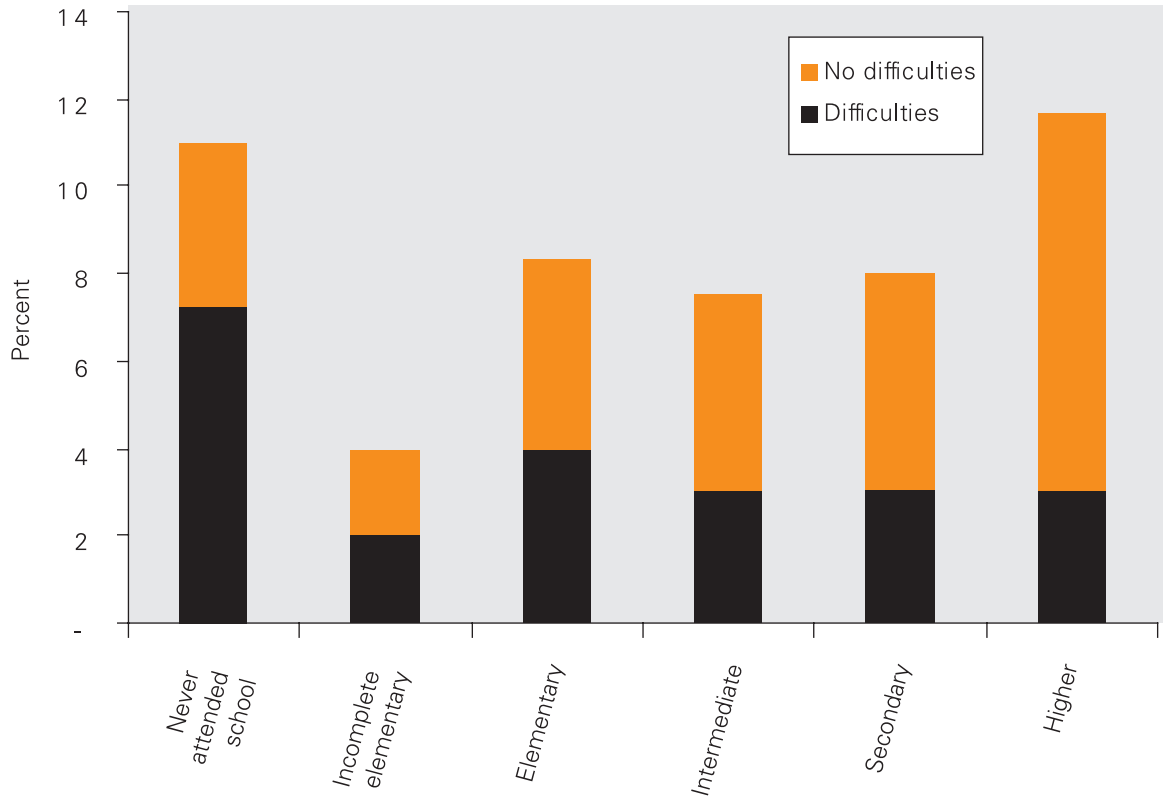


Figure 49: War-related cause of chronic illness, in percent of persons with chronic illness per age group

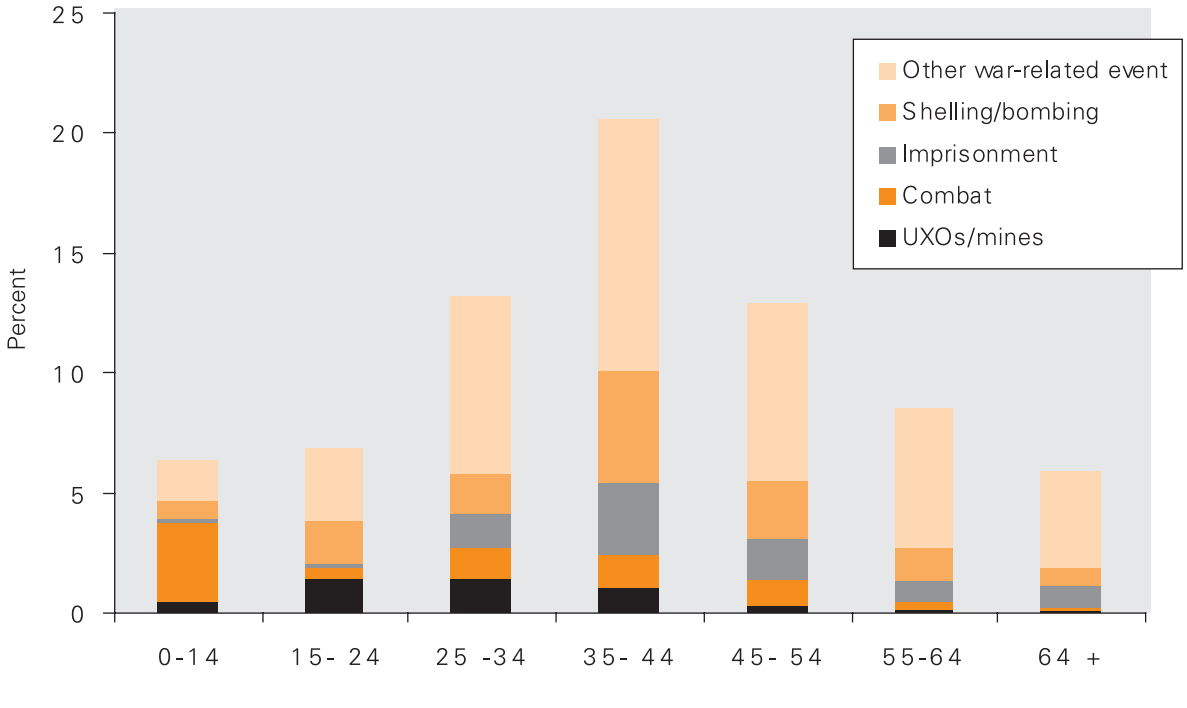
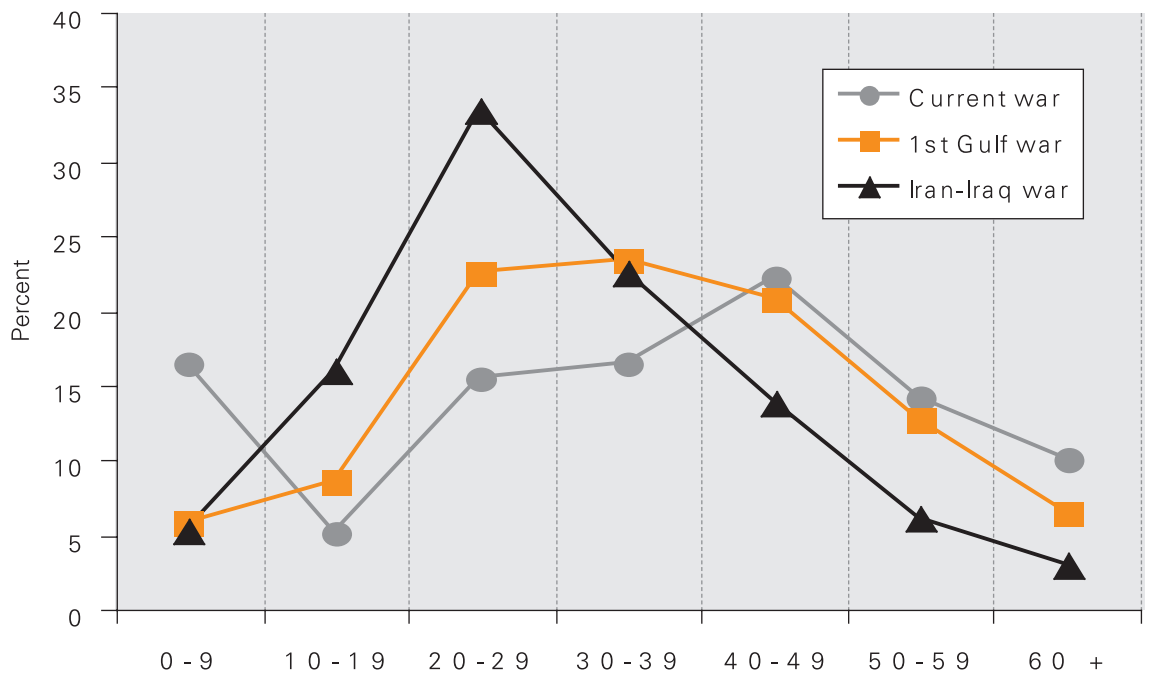


Figure 50: Age distribution of chronically disabled in the current and previous wars



The first Gulf war shows a similar pattern, but with a greater impact in the age group 30 to 49. In the most recent war, however, the number of affected children below nine years and the middle-aged is actually higher than in the age group 20 to 29. This reflects the finding that in the ongoing war, it is the civilian population that are most affected.

This impression is further strengthened by the fact that, in the most recent war, there is almost no difference in the number of women and men that were disabled. This is different from the previous wars, in which far more men than women have been wounded. Summing up, the proportion of chronically disabled in population groups that are not normally soldiers - namely women, children below nine and elderly above 60 - is larger in the ongoing war than in the first Gulf war, and was in turn larger in the first Gulf war than in the Iran-Iraq war (Figure 51).

In terms of geographic distribution, the prevalence of war-related causes is highest in the southern region where 12 percent of those with chronic illness reported war as the cause. In Baghdad, this was the case for 11 percent; in the north, 10 percent; and in the central region, 7 percent of those with chronic illness reported war as the cause. The governorate with the highest prevalence of war-related chronic illness was Wasit. However, when broken down to the governorate level, the total number of persons with chronic illness is low, so the confidence intervals are wide.

Acute illness more common in older age groups

The survey also asked how many acute or sudden illnesses or injuries each household member had had in the two weeks preceding the survey. To get an impression of the severity of the acute health problems, the survey also asked whether the illness or injury was serious enough to prevent the respondent from carrying out normal duties such as school, work, housework, etc, for a period of three days or more.

Overall, four percent of the respondents answered that they had had at least one acute illness or injury over the prior two weeks. Of these, 59 percent of the reported cases hindered normal activities for at least three days. The relatively low percentage of those reporting an acute illness, and the relatively high level of severity in the reported cases, indicates a high threshold for labeling an episode of ill health as an "illness or injury."

The incidence of acute illness varies according to age and gender. In the age group below five years, there is a high incidence of acute illness, which is further discussed in the child and nutrition chapter. The lowest rates are found among adolescents and young adults (Figure 52).

In the age group between 15 and 24 years, three percent report an acute illness, compared to 10 percent in the age group over 65 years. The severity of the cases reported also increases with age. In the oldest age group, as many as 74 percent who responded that they had had an acute illness, were hindered in their normal activities for three days or

Figure 51: Proportion of small children, elderly and women chronically disabled in the current and previous wars

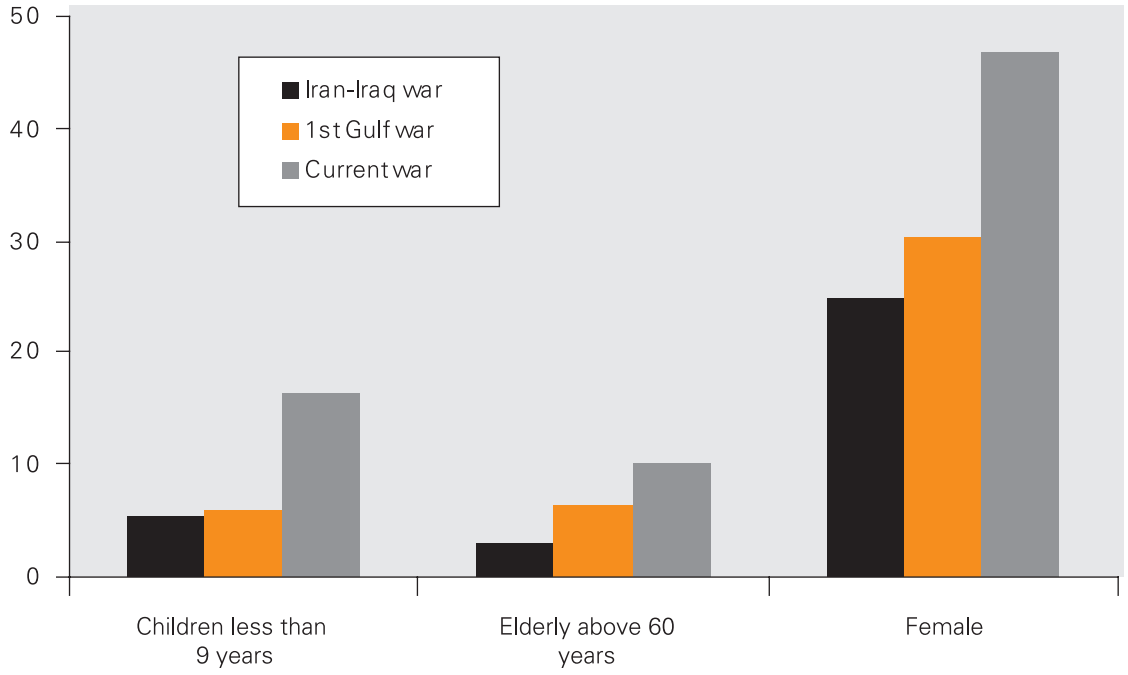
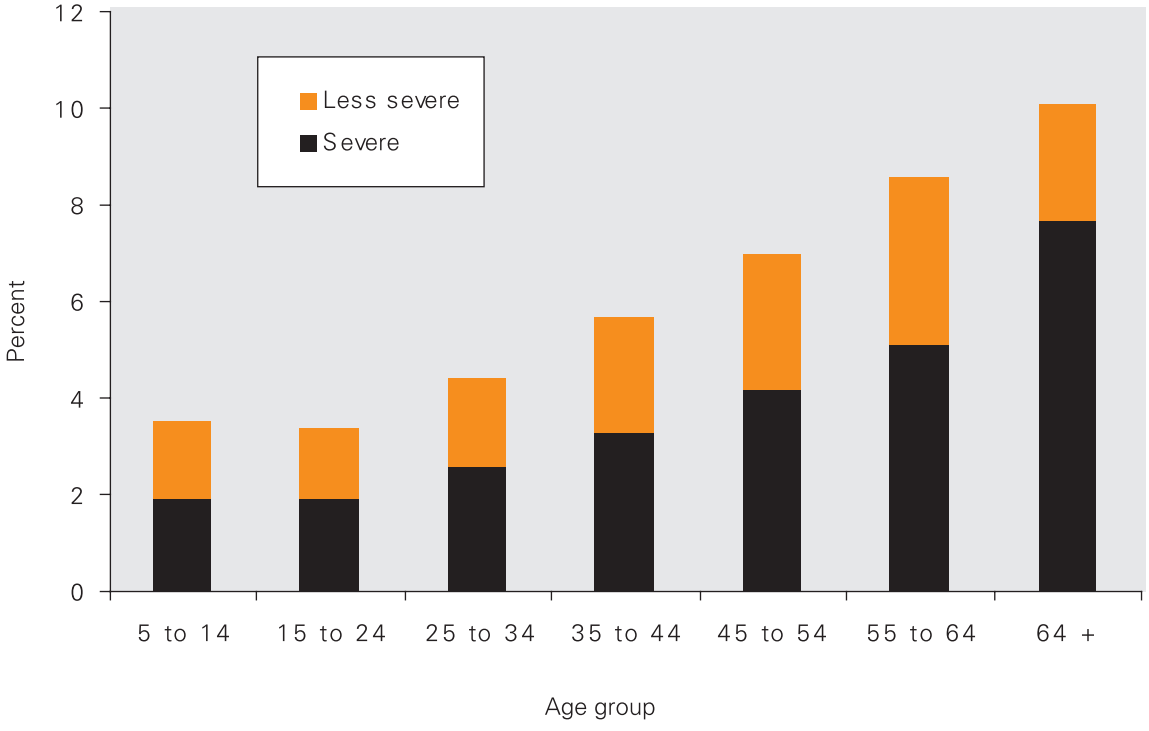


Figure 52: Acute illness in last two weeks, in percent of age groups



more. Females and males report approximately the same incidence of acute illness over the previous two weeks (5 percent versus 4 percent).

The incidence of acute illness is quite similar across income groups, falling from five percent in the two poorest quintiles to four percent in the three richest. The difference is slightly larger between urban areas (five percent) as opposed to rural areas (three percent), and between regions: seven percent in the north, six percent in Baghdad, four percent in the south, and three percent in the centre.

Use of Health Care

A good deal of information on a population's health seeking behavior can be obtained by asking what happened the last time they were ill. In the ILCS, the respondents who said they had an episode of acute illness or injury during the last fourteen days, were further asked whether they sought external help, where and from whom they sought help, and how much it cost. Those who did not seek external help for their health problem were asked why not.

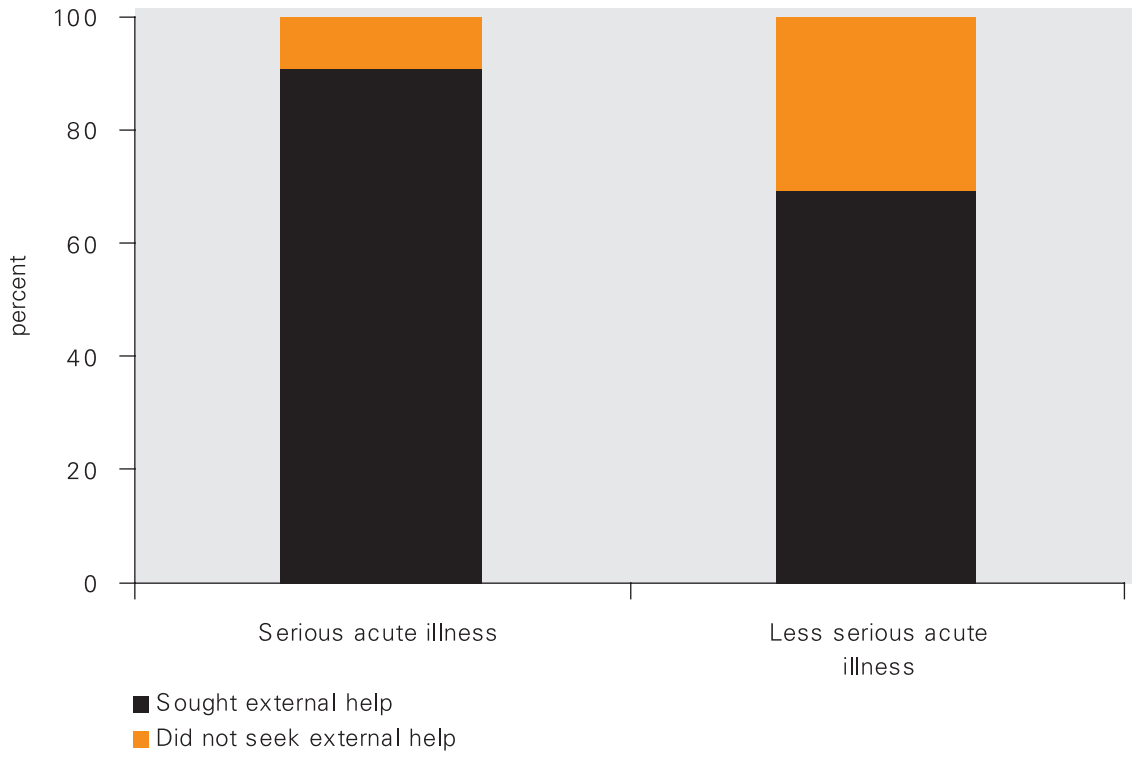
Most with acute illness seek help from doctor

The vast majority, 83 percent, of those who experienced acute illness or injury during the two weeks preceding the survey, had sought some kind of external help. This proportion was quite stable in all governorates, age groups, income groups and among both sexes. In cases of severe acute illness that hindered normal activity for three days or more, 91 percent sought help; among those with less severe acute illnesses the corresponding figure was 69 percent (Figure 53).

On average, 52 percent of those who sought external help went to private clinics or hospitals, while 41 percent went to public hospitals or clinics. Four percent sought advice in pharmacies. Other institutions - such as clinics and hospitals run by NGOs or coalition forces, or "other places", were found to play a very small role in the treatment of acute illness.

At a national level, half of the consultancies were with specialist doctors, 45 percent with general practitioners, and three percent with pharmacists. The help of nurses, religious helpers, traditional healers, neighbours or other people from the community was each sought in less than one percent of the cases.

Figure 53: Proportion of population with acute illness in last two weeks who sought external help



High income groups seek more private and specialized care than low income groups

While the tendency to seek some sort of external help for acute illness and injury was very similar across the economic sub-groups of the population, there are obvious differences with regards to where the help was sought and who was consulted. There are also marked differences in the patterns for the reasons given for not seeking help. This is explored in Figure 54.

With rising income, the chance that a specialist is consulted at a private clinic or hospital rises, and vice versa - the chance that a general practitioner is consulted at a public hospital falls.

Cost of care more important in rural areas and in low-income groups

An open-ended question about reasons for not consulting help outside the household was asked. The most frequently given answers were that the respondent treated him/herself with either modern medicines (34 percent) or traditional medicine such as herbs, etc (8 percent), or that there was no need (29 percent). In other words, 71 percent of those who did not seek external consultation preferred to handle the case on their own. Out of those who did not seek help, however, almost 1 in 5 (18 percent) did not do so because they could not afford it, and an additional 4 percent did not have appropriate medical facilities nearby.

The attitude towards disease and reasons for not seeking external help differed across the income groups (Figure 54). In the high-income groups, the most commonly given reason was that the respondents had treated themselves. This may reflect that people that cope well in some areas of life also

Figure 54: Income-related health behaviour, in percent of population over 5 with illness in last two weeks

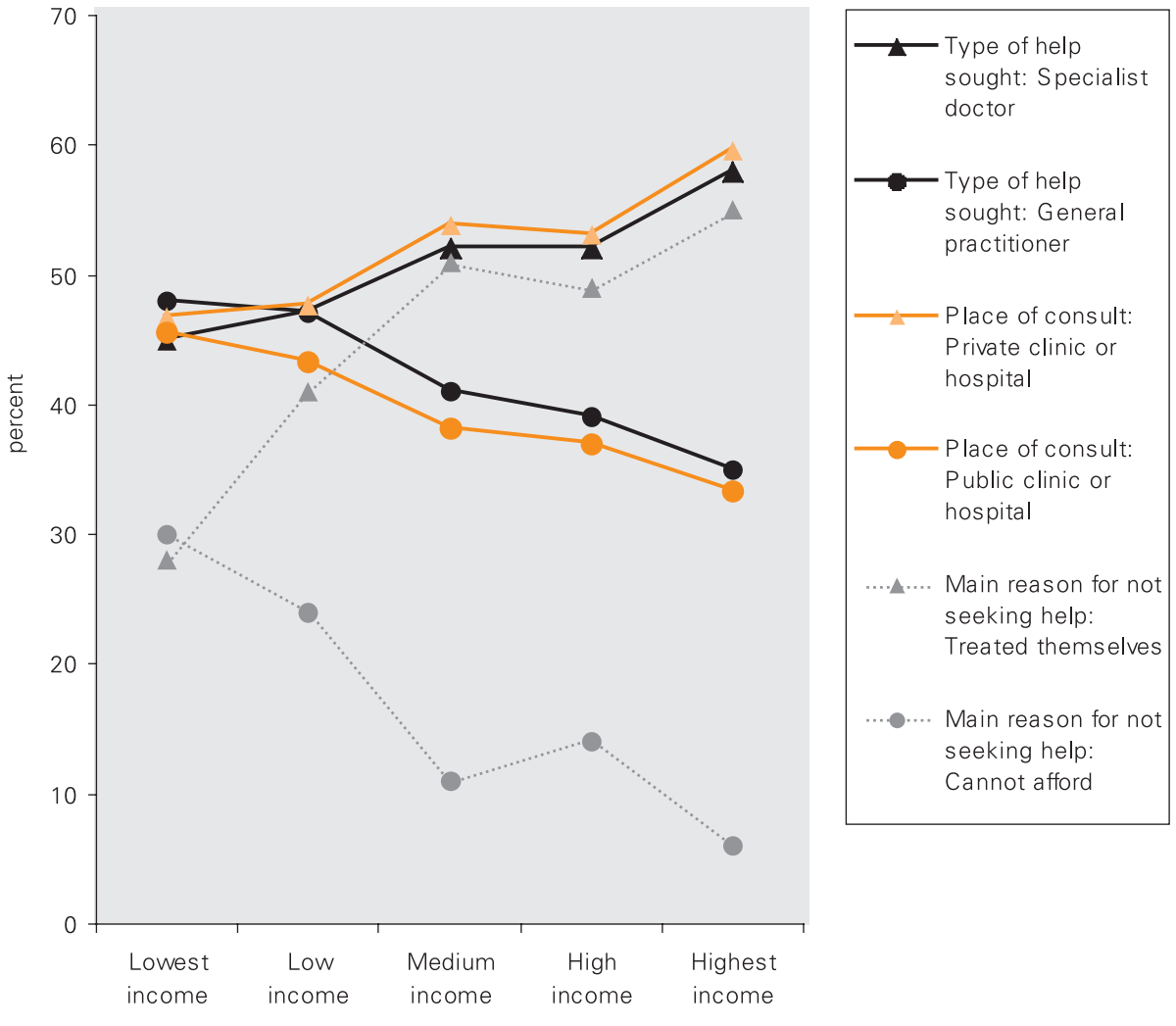


Table 48: Travel distance to health facility, in percent of population with more than:

		30 minutes to nearest doctor	60 minutes to nearest hospital
North	Dahouk	16	6
	Erbil	10	1
	Sulaimaniya	21	14
Centre	Al-Tameem	11	7
	Salahuddin	17	5
	Diala	16	6
	Al-Anbar	13	7
	Nineveh	10	12
Baghdad		5	4
South	Babil	22	7
	Kerbala	12	2
	Wasit	17	8
	Al-Najaf	10	5
	Al-Qadisiya	12	3
	Al-Muthanna	32	17
	Thi-Qar	13	2
	Basrah	1	0

feel more capable in other areas, such as diagnosing and handling their own health problems. As expected, the cost of the healthcare was more frequently given as a reason for not seeking care by the lowest income groups than by groups with higher income.

Differences are also apparent in the health-seeking behavior in rural and urban areas. In rural areas the most frequent reason given for not seeking external help was lack of affordability (35 percent), while an additional 16 percent answered that there was a lack of appropriate health services in the area. Conversely, in urban areas, 15 percent could not afford care, and only two percent said that appropriate services were not available or that they could not reach a hospital. The most frequent reason given for not seeking help in urban areas (37 percent) was that the respondents treated themselves with modern medicine, or that there was no need (31 percent).

The proportion that could not afford health services was highest in the southern region (27 percent), while the proportion who did not seek care because there were no medical facilities nearby was highest in the northern region (11 percent).

Medical costs depend on severity of disease, type of care and income.

The amount of money people spend on health care obviously depends on whether or not they are sick, and how sick they are. In the ILCS, those who experienced acute illnesses over the prior two weeks were asked how much they paid for consultations, transportation, medicines, and other remedies related to the illness. The median medical cost was 7,500 Iraqi dinars, and the mean cost was 15,643 dinars. The mean is much higher than the median because a few respondents report very high costs.

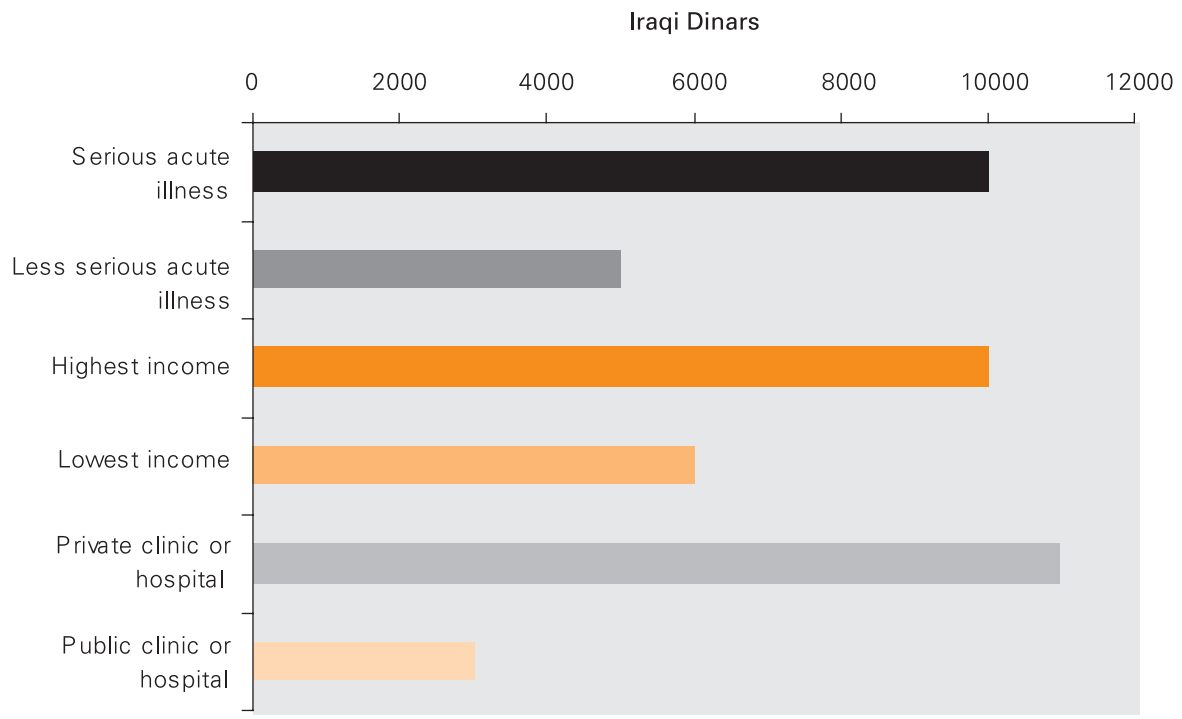
The median medical cost for those with severe acute illness (severe enough to hinder them from fulfilling their normal duties for three days or more) was twice as high (10,000 Iraqi dinars) as for those with less severe acute illness (5,000 Iraqi dinars). Among those with a severe acute illness, 28 percent spent more than 20,000 dinars, and 16 percent spent less than 2,000 dinars. For those with a less serious acute illness over the prior two weeks, 13 percent spent more than 20,000 dinars and 27 percent spent less than 2,000 dinars (Figure 55).

The differences in medical costs between women and men, rural and urban districts, and between the regions are less pronounced. However, large differences in cost when comparing the type of health service used are found. Those who used a private clinic or hospital spent a median of 11,000 dinars - more than three times as much as those who used a public clinic or hospital, who spent a median of 3,000 dinars each. The corresponding difference in the mean costs are 22,404 to 9,005.

Specialized health care costs more than care at a lower level. The mean cost for visiting a general practitioner was 9,000 dinars versus 33,000 for visiting a specialist. It was also found that the health expenditure is heavily income-related. In the lowest income group, the median cost was 6,000 dinars, and this sum rises steadily to a median of 10,000 in the highest income group. This is in part explained by the tendency of richer people to seek private care.

Medical costs are thus more influenced by the type of care sought than by the severity of the illness.

Figure 55: Median medical cost for acute illness in last two weeks in Iraqi Dinars, by severity of disease, type of care and family income



Almost all Iraqis live within one hour to the nearest hospital

An important aspect of health services is whether one can reach them in time. Overall, 95 percent of the Iraqi population has less than 60 minutes travel time to the nearest hospital, and 89 percent lives less than 30 minutes from the closest health care centre. There are, however, marked regional differences, particularly between rural and urban areas. In rural areas, 14 percent must travel more than one hour to get to the nearest hospital, and 36 percent must travel more than half an hour to get to the nearest health centre or physician. One governorate, Al-Muthanna, has the largest proportion of people living far away from all types of health services: here, 32 percent of the population must travel more than 30 minutes to reach a doctor, and 10 percent have more than 60 minutes to travel.

The quality of the health services offered is not assessed by the survey. One indication of quality is patient satisfaction. This indicator, however, also reflect topics that are not directly part of the medical services, such as the politeness of the health personnel, opening hours, waiting time, travel time, and the standard of the buildings and food. The level of satisfaction also reflects the level of expectations, and in that sense, may be a good indicator of change. The finding that an overwhelming 68 percent of the rural population is unsatisfied with the health services they receive, as discussed in the chapter 1, may also have influenced the choice for the 17 percent with acute illness who did not seek care, especially for those who preferred to handle the case on their own.

6. Education

Summary

Iraq's educational system used to be among the best in the region; one of the country's most important assets remains its well-educated people. The results of education reforms in the 1970s and 1980s are evident in the high literacy rates in the adult population. However, over the past two decades, wars, sanctions, and harsh economic conditions have taken a toll on the educational system. The youth (aged 15-24) literacy rate at 74 percent is slightly higher than the literacy rate for the population at large, yet lower than literacy rates for the age group 25-34, indicating that the younger generation lags behind its predecessors on educational performance. The literacy rate for women in Iraq has stagnated and, in some governorates, the level of female illiteracy is very high. The gender gap in literacy is diminishing, but this is due to a drop in the literacy levels of men rather than gains among women.

Achieving universal primary education by 2015 is one of the Millennium Development Goals. Three indicators are attached to this goal: youth literacy, net enrolment in primary education, and children enrolled in school that reach grade five. The net enrolment ratio describes the degree of participation of the official school-age population. The net enrolment ratio for primary school in Iraq is 79 percent, breaking down as 83 percent for boys and 74 percent for girls. The percentage of children enrolled in primary school is lower in rural than urban areas, especially for girls. In rural areas, only 60 percent of school-age girls are enrolled in school.

In Iraq, 89 percent of children enrolled in school reach grade five. Repetition rates are high: 20 percent of children (23 percent boys, 16 percent girls) currently enrolled in primary school have repeated at least one year. A high repetition rate generally indicates a low quality of education.

There are regional variations in educational performance. The lowest education level is found in the north, where 31 percent of the population over 15 years have never attended school and only six percent have started or completed higher education. The highest level of education is found in Baghdad, where 13 percent of the population never attended school while 16 percent have started or completed higher education. However, the regional differences have diminished in recent years, and the net enrolment for primary school in the north is now higher than the national average. This is to a large extent a result of an influx of foreign aid: the international donor community started educational programmes in northern Iraq in 1997, whereas the rest of the country did not receive international aid until after the 2003 invasion.

The UNESCO framework for analysing the educational sector has three main components: supply, demand, and quality. The supply of education includes: infrastructure, which is comprised of the number of teachers, availability of school buildings, and other necessary educational material; government policies; and public spending on education. The demand for education is related to the number of students at different levels, enrolment, and participation in education. The quality of education refers to how the system works internally: what the children learn at school; their progress; and whether or not the system is successful at keeping the children in school. This chapter loosely follows UNESCO's framework, starting with an introduction on the Iraqi educational system by way of an overview of the supply side, followed by a section on enrolment, and concluding with a section on education in the general population, i.e. the output of the educational system in terms of literacy and highest completed education, and the quality and efficiency of the Iraqi educational system.

Supply of education

Since the establishment of the modern state of Iraq in 1921, successive governments have in different ways conceived of education as a principal means of integration (Sousa 1982). When the Ba'ath Party came to power in 1968, eradication of illiteracy was made a primary objective. Educational policy was set by three laws passed in the 1970s: the Illiteracy Eradication Law (1971); the Free Education Law (1974), whereby the state would cover the costs of education at all stages; and the Compulsory Education Law (1978), which made six years of primary education compulsory for all children (Sousa 1982). In 1978, the government launched the National Comprehensive Campaign for the Eradication of Illiteracy, which aimed at eradicating illiteracy for all those between the ages of 15 and 45. The campaign mobilized the media, trade unions, and civic organizations; all groups in society were targeted, and there was an emphasis on the full participation and emancipation of women—for example, special facilities were provided to ensure that practical difficulties did not inhibit women from attending literacy classes. The literacy campaign was not compulsory for people over 45 in 1980, i.e. people who are 69 and above today.

The administration and management of education in Iraq is highly centralized within two ministries, the Ministry of Education and the Ministry of Higher Education and Scientific Research. A similar structure is found in the three Northern governorates (UNESCO 2003). The Ministry of Education is responsible for the management and implementation of pre-school, primary, and secondary education, the latter of which includes teacher training, fine arts institutes, and vocational education. The Ministry of Higher Education and Scientific Research is responsible for the administration, planning, and management of higher education. Post-secondary education in Iraq includes technical institutes, colleges, and universities. Universities are semi-autonomous in most financial, technical, and administrative matters (UNESCO 2003).

Box 4:
The educational ladder in Iraq

Kindergarten: Pre-school or kindergarten is a non-compulsory stage available to children aged four to five years. It is a one-year programme run by the Ministry of Education.

Primary school: Six years of primary school is compulsory for all children in Iraq. Children are supposed to start school the year they turn seven, but many children are sent to school one year earlier or one year later than prescribed. National examinations are held by the end of the last year, leading to a Primary School Baccalaureate.

Intermediate school: Primary school is followed by three years of intermediate school leading to the Third Form Baccalaureate. Based on the student's interests and qualifications he or she may proceed to secondary education preparing for academic studies, and then entrance into a teachers institute or vocational training.

Secondary school: The three-year preparatory level is intended to prepare the student for academic studies. After the first year the student will chose between literary or scientific studies. The secondary level leads to the Sixth Form Baccalaureate. Students who complete this level with a minimum of entry qualifications can proceed directly to university or college.

Vocational: After intermediate school students may chose three years of vocational training within the industrial, agricultural or commercial domain. Vocational training is part of the secondary educational system but is managed separately under its own Director General within the Ministry of Education. Students who obtain good results (the best 10 percent) can extend the training with another two years at a technical college.

Teachers Institute: After intermediate school students may proceed to a teachers institute for five years. The teachers institute educates mainly primary school teachers. The training of secondary school teachers has traditionally been the responsibility of the universities and other institutions of higher education.

University: Students that have completed the intermediate and preparatory secondary education may continue at a university or college for a minimum of four years leading to a Bachelor degree. A Master's degree requires an additional two to three years. Another option is to do two years of teacher training and later proceed to university.

Government schools dominate

In Iraq, most schools are government-run, but there are also private schools and NGO-administered schools. Among all children currently enrolled in school, 99 percent attend government schools. This holds up when looking at the various governorates, with no difference in type of school enrolment by age or gender.

Few children in Iraq attend Koranic schools. Of all children between the ages of 6 and 15 who are enrolled in regular school, only one percent are also enrolled in Koranic school (Table 49). There are slight gender differences in the likelihood of attending Koranic schools. Among boys currently enrolled in regular school, three percent have attended Koranic school in the past, compared to two percent of girls. There are also variations between governorates: in Al-Anbar, 15 percent of the children enrolled in regular school have attended Koranic school in the past, while in Al-Qadissiya and in Sulaimaniya, the comparable figure is three percent. It was found that children who are not enrolled in regular school also do not attend Koranic school; thus it seems evident that Koranic schools in Iraq are not an alternative, but rather a complement to public schools, where children may go once a week to read and study the Koran in addition to their regular studies.

Most children have school nearby

In Iraq, 73 percent of children of primary school-age need less than 15 minutes to get to primary school with the usual means of transportation. The accessibility of schools is higher in urban than in rural areas: in urban areas, 80 percent of children need less than 15 minutes to primary school, while in rural areas the comparable figure is 56 percent. The governorates of Babil and Al-Muthanna have the lowest availability of primary schools. In Babil, 20 percent of the children need more than 30 minutes to primary school, and 4 percent need more than 60 minutes; in Al-Muthanna, 19 percent need more than 30 minutes, and 6 percent need more than 60 minutes.

The availability of secondary schools is lower than primary schools. Among all children of secondary school-age, 42 percent need less than 15 minutes to school with the usual means of transportation. The pattern of availability is the same as for primary schools. In urban areas, 49 percent need less than 15 minutes to school, versus 23 percent in rural areas. The lowest availability of secondary schools is in Babil and Al-Muthanna. In Babil, 24 percent of children need more than 30 minutes, and 19 percent need more than 60 minutes to secondary school; in Al-Muthanna, 31 percent of children need more than 30 minutes, and 18 percent need more than 60 minutes. However, in most governorates the majority of the children need less than 30 minutes to get to secondary school, which could be considered to be within a reasonable distance.

Table 49: Enrolment in regular school and Koranic school by gender, in percent of children aged six to 15 years currently enrolled in either

	Gender		Total
	Male	Female	
Enrolled regular and Koranic	1	1	1
Enrolled regular, have attended Koranic in past	3	2	2
Enrolled regular, never attended Koranic	96	97	96
Not in regular, enrolled in Koranic	0	0	0
All	100	100	100

Enrolment in education

Achieving universal primary education is one of the Millennium Development Goals, and net enrolment in primary school is one of the indicators attached to this goal. This section examines various aspects of enrolment including the six years of mandatory primary school and enrolment in intermediate school. In addition to net and gross enrolment, this section will also look at overall enrolment, school attendance, and education at various levels.

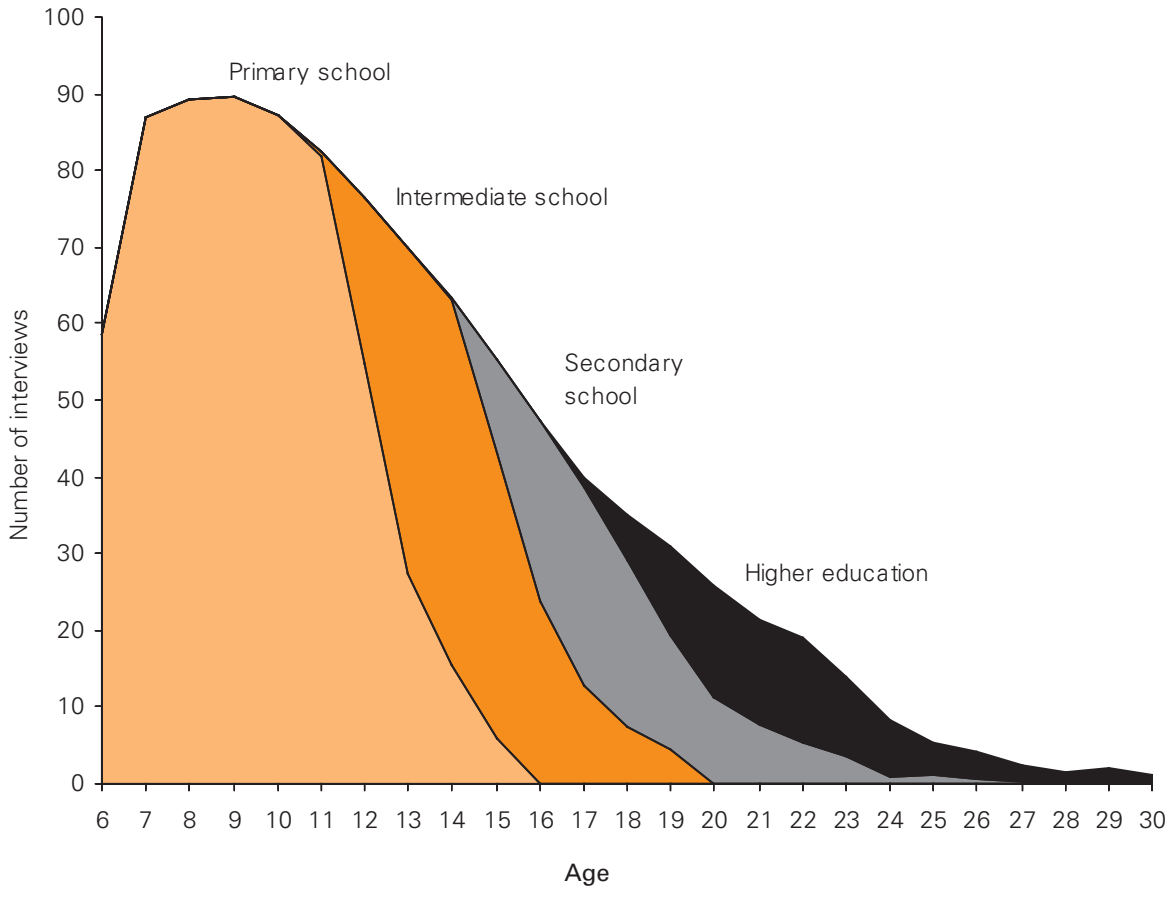
Overall enrolment

The overall enrolment, applicable to all ages between 6 and 24, shows the proportion of people enrolled in school, independent of which level or grade they are enrolled in. This indicator makes it possible to detect at what age children drop out of school entirely, as opposed to graduating from one level and continuing to the next. Overall, 55 percent of people in the age group 6 to 24 are enrolled in school (Figure 56). Within this group, a high percentage of children aged 7 to 11 are enrolled in school. Only 59 percent of all six-year-olds are enrolled, but this is due to the fact that some start school later than prescribed. From the age of 12, there is a steady decline in school enrolment, hitting 56 percent at the age of 15 and 35 percent at the age of 18.

At the primary school stage, 4,168,000 children are currently enrolled, accounting for 61.3 percent of all those enrolled. At the intermediate level, 1,311,000 children are currently enrolled, representing 19.3 percent of the total enrolment. Academic secondary education encompasses 639,000 students, accounting for 9.4 percent of the total enrolment, and vocational secondary education has 133,000 students, or 2 percent. There are currently 19 universities in Iraq with a total of 399,000 students, 5.9 percent of the total enrolment.

Vocational education consists of three years of training within the education, industry, business, agriculture, or commercial sectors[9]. Of the female students currently enrolled in vocational education, 45 percent are in the educational sector training to

Figure 56: Overall enrolment at various levels, in percent



9 Teacher training takes place at the Teacher Training Institutes, which enroll intermediate level students for a period of five years (UNESCO 2003:43).

become teachers at the primary and intermediate level. Among male vocational students, 21 percent are engaged in industry and another 21 percent in electrical training (Table 50).

Table 50: Enrolment in vocational training by gender, in percent of all enrolled children

	Male	Female	Total
Business	11	19	13
Industry	21	4	16
Agriculture	2	3	2
Computer science	4	6	4
Electrical	21	2	16
Building	1	0	0
Paramedical	4	4	4
Teacher training	11	45	20
Mechanical	16	2	12
Clothing		1	0
Arts and Crafts	2	3	2
Other	7	12	9
All	100	100	100

Attendance in primary school last month

Not all children enrolled in school actually attend. Attendance in primary school is an indicator that measures the number of children that were enrolled and actually attended school during the month prior to the survey. Of all enrolled children, 98 percent attended school most of the prior month. The school attendance indicator does not measure school dropouts because the situation might be temporary; for example, children might not attend school due to sickness or a difficult security situation in the area.

There is no gender difference in attendance, but significant differences occur between governorates. Al-Anbar and Al-Najaf have lower attendance, most likely due to the difficult security situation during the interview period (April/May 2004).

Low net enrolment compared to other countries in the region

The net primary school enrolment ratio is the number of children enrolled in primary school who belong to the age group that officially corresponds to primary schooling, divided by the total population of the same age group (Box 5). Children in Iraq are supposed to start school the year they turn seven and attend six years of primary school, three years of intermediate school, and three years of secondary school, before they are able to continue to higher education the year they turn 19. However, parents appear to be quite flexible in determining when a child should start school. Many children are sent to school the year

Box 5: Measuring education Key indicators

Adult literacy rate: Percentage of persons aged 15 and over who can read and write.

Youth literacy rate: Percentage of persons aged 15-24 who can read and write.

Gross enrolment ratio: The number of children enrolled in a level (primary or secondary), regardless of age, divided by the population of the age group that officially corresponds to the same level.

Net enrolment ratio: The number of children enrolled in primary (or secondary) school who belong to the age group that officially corresponds to primary schooling, divided by the total population of the same age group.

Net primary school attendance: Percentage of children in the age group that officially corresponds to primary schooling who attend primary school.

Survival rates by grade: The percentage of children who start education who will reach a given grade.

Primary school entrants reaching grade five: Percentage of the children entering the first grade of primary school who eventually reach grade five.

Overall enrolment: The proportion of the population aged six to 24 enrolled in school, independent of which level or grade they are enrolled in.

Source: UNESCO Institute for Statistics (2004) and UNICEF 2004.

they turn six, while others start one year delayed, the year they turn eight. The net enrolment ratio does not include children who start primary school earlier than prescribed, nor does it include children above the age of 12 who are still enrolled in primary school.

The net primary school enrolment in Iraq is 79 percent, breaking down as 83 percent for boys and 74 percent for girls. This is low compared to other countries in the region: in Jordan, for example, net enrolment in primary school is 93 percent for boys and 94 percent for girls; in Syria, it is 99 percent for boys, 94 percent for girls (Unicef 2004d).

The percentage of children enrolled in primary school is lower in rural than urban areas, especially for girls. In rural areas, only 60 percent of girls are enrolled in school, versus 81 percent in urban areas (Table 51). Enrolment for girls in rural areas is highly dependent on access to the school. When girls in rural areas require 30 minutes or more to school (either by foot or by other means of transportation), there is a marked decline in enrolment (Table 52). Girls in urban areas attend school even though the school is far away. A reason for this could be that transportation is easier in urban than in rural areas; busses are more frequent or parents drive their children to school.

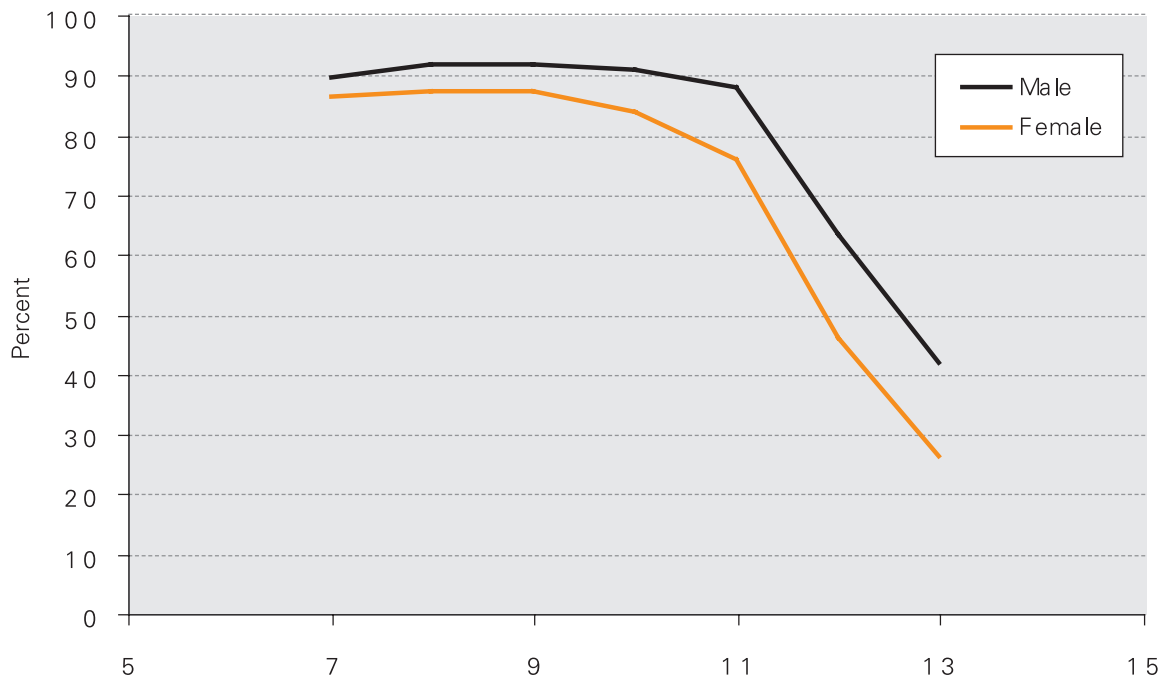
Among rural girls not enrolled and living more than 30 minutes away from school, the most important reason for not attending school is family preference—the family does not want the girl to go to school. This answer is given by 26 percent of the respondents. The second most important reason for not attending school (24 percent) is that the school is not available nearby. Although it is difficult to influence parents' priorities for girls, these findings indicate that providing public transportation in rural areas would increase the incentives for girls to attend school.

When asked why boys of primary school-age are not enrolled in school, 36 percent say that they are not interested in school, 16 percent attribute family poverty, and 14 percent say the school is not available nearby.

Table 51: Net enrolment in primary school by gender and place of residence, in percent

	Male		Female		Total
	Rural	Urban	Rural	Urban	
Enrolled	79	85	60	81	79
All	100	100	100	100	100

Figure 57: Net enrolment in primary school by gender and age, in percent[10]



10. Figure 2 does not show the net enrolment for children at the age of six. The interviews were carried out in April/May, i.e. at the end of the school year. All children in first grade should have turned seven at this point.

Table 52: Net enrolment in primary school by place of residence and access to school, in percent

	Rural				Urban				Total
	less than 15 minutes	15 - 29 minutes	30 - 59 minutes	60 minutes or more	less than 15 minutes	15 - 29 minutes	30 - 59 minutes	60 minutes or more	
Not enrolled	34	43	53	57	19	19	33	7	25
Enrolled	66	57	47	43	81	81	67	93	75
All	100	100	100	100	100	100	100	100	100

Data from Unicef's Multiple Indicator Cluster Survey (MICS) in 2000 differ slightly from the ILCS data. While ILCS estimates a net primary school enrolment in Iraq of 79 percent, Unicef estimated a net primary school enrolment of 76.3 percent (Republic of Iraq & Unicef 2001:19). The net primary school enrolment estimated by ILCS for the 15 governorates of southern Iraq is 78 percent, which is closer to the MICS estimate. The reason for this variation could be that the MICS covers the 15 governorates of southern Iraq only, while ILCS covers all 18 governorates, including the northern governorates of Dahouk, Erbil, and Sulaimanyia. Moreover, the MICS survey was carried out four years ago.

UNESCO reports that the net primary enrolment ratio in Iraq was 93 percent for the school year 1999/2000 but these data also only cover the centre and south of the country (UNESCO 2003). According to both ILCS and MICS, such a high rate seems unlikely.

What decides whether or not a child is enrolled in school? It can be assumed that variables such as gender, access to school, and household income affect enrolment ratios. Using regression analysis on primary enrolment in Iraq, the effect of these and other variables on the probability of being enrolled can be explored. Logistic regression is useful for situations in which you want to predict the presence or absence of a characteristic based on the values of a set of independent variables.

Access to school, gender, and place of residence all have strong effects on the probability of being enrolled. A girl living in a rural area in central Iraq with more than 30 minutes to travel to primary school, in a home in which the household head is not employed and has little education and low income, has a predicted probability for being enrolled of only 42 percent (Table 53). If the value on the gender variable is changed, and the other variables are kept unchanged, the predicted probability for being enrolled increases from 42 to 55 percent. Changing the value on the residence variable from rural to urban and keeping the other variables unchanged increases the predicted probability of enrolment from 42 to 54 percent. The strongest effect comes from access to school. If access to school is changed from more than 30 minutes to less than 30 minutes, and the other variables are kept unchanged, the predicted probability for being enrolled increases from 42 to 58 percent.

There is also a strong regional effect from living in the north compared to Baghdad. This is probably due to a large influx of international aid to northern Iraq after 1997. The effect of living in the south or centre compared to Baghdad is not significant.

Out of the statistically significant variables, the household income has the weakest effect on enrolment. A girl living in a rural area with more than 30 minutes to primary school, a household head that is not employed and has little education, living in the Central region in Iraq or Baghdad, in a household with low income, has a predicted probability for being enrolled of 42 percent. If the value on the income variable is changed from low to high income, the predicted probability for being enrolled increases to 45 percent.

Table 53: Logistic regression of enrolment in primary school

	B	Sig.	Exp(B)
Male (compared to female)	,544	,000	1,722
Rural residence (compared to urban residence)	-,509	,000	,601
Less than 30 min to school (compared to more than 30 min to school)	,654	,000	1,924
Little education of household head (compared to high education of household head)	-,507	,000	,602
Low income (compared to high income)	-,141	,000	,869
Household head employed (compared to household head not employed)	,193	,000	1,213
Region (reference: Baghdad)			
North	,618	,000	1,855
Centre	-,003	,961	,997
South	,032	,510	1,032
Constant	,830	,000	2,293

-2 Log likelihood: 20495,972, Nagelkerke R Square: ,083

Low net enrolment in intermediate school

The net enrolment ratio in intermediate school is 41 percent—47 percent for boys and 36 percent for girls. There are marked differences between urban and rural areas. In urban areas, 50 percent of boys are enrolled in intermediate school, compared to 37 percent in rural areas (Table 54). For girls, 44 percent are enrolled in urban areas, versus only 13 percent in rural areas.

Table 54: Net enrolment in intermediate school by gender and place of residence, in percent

	Male		Female		Total
	Rural	Urban	Rural	Urban	
Enrolled	37	50	13	44	41
All	100	100	100	100	100

For both boys and girls, "not interested in school" is the prime reason given for not being enrolled in intermediate school; this answer is given by 42 percent of boys' families and 33 percent of girls' families. Among boys, other main reasons are family poverty (14 percent) and the need to work in order to help the family (12 percent). Among girls, other main reasons are family preference (the family does not want the girl to go to school, 24 percent) and family poverty (13 percent).

Gross enrolment in education

The gross enrolment ratio is the number of children enrolled in a level, regardless of age, divided by the population of the age group that officially corresponds to the same level (Box 5). It is widely used to show the general level of participation in a given level of education, and indicates the capacity of the education system to enrol students of a particular age group. A high gross enrolment ratio generally indicates a high degree of participation, regardless of whether the pupils belong to the official age group (UNECSO Institute for Statistics 2004); this is in contrast to the net school enrolment, which indicates how many children in the right age group are enrolled in the age-appropriate school level. It can be over 100% due to the inclusion of over-aged and under-aged pupils, because of early or late entrants, or repetition.

The gross enrolment ratio in primary school in Iraq is 102. This means that there are more children enrolled in primary school than the number of children in the age group. As seen previously, the net enrolment in primary school is 79 percent, significantly lower than the gross enrolment. The difference can be mostly explained by varying school start dates (children starting primary school earlier or later than prescribed) or children repeating grades.

The gross enrolment ratio in primary school is 109 for boys and 94 for girls. There are marked differences between urban and rural areas. In urban areas, the gross enrolment ratio in primary school is 107; in rural areas, it is 89 (Table 55).

The gross enrolment ratio in intermediate school in Iraq is 64, signifying that there are fewer children enrolled in intermediate school than the number of children in the age group. The net enrolment ratio in intermediate school is even lower—41 percent—meaning that the number of age-appropriate children in intermediate school is low. The gross enrolment ratio in intermediate school is lower for girls than for boys, and lower in rural than urban areas.

For secondary school, the gross enrolment ratio in Iraq is 0.36: 0.40 for boys and 0.32 for girls. Differences between urban and rural areas persist, with 0.42 for urban areas versus 0.18 for rural areas. ILCS has not estimated net enrolment for secondary school because it is common that students start secondary school earlier or later than prescribed.

UNESCO has estimated the gross primary enrolment ratio for Iraq to be 101.6 for the school year 1999/2000 (centre/south only) (UNESCO 2003). This is approximately the same as the ILCS ratio.

Table 55: Gross enrolment ratio

Gross enrolment ratio	Total	Male	Female	Rural	Urban
Primary school	102	109	94	89	107
Intermediate school	64	73	55	38	74
Secondary school	36	40	32	18	42

Education in the general population

An analysis of the educational system and the various aspects of enrolment indicates how well the system is functioning. This section will look at the results of the Iraqi education system by examining the educational level of the population as a whole, or the stock of human resources. Education levels in the population can be measured by the literacy rate and the rates of highest completed education. Special attention will be given to the adult population, defined as 15 years and above, and to people of working age, defined as people between the ages of 15 to 64.

The quality and efficiency of the educational system can be measured by looking at survival rates and repetition rates. The rate of children reaching grade five is the third indicator attached to the Millennium

Development Goal of achieving universal primary education.

Lower literacy rates in younger age groups

As mentioned above, youth literacy, together with net enrolment in primary education and children reaching grade five, is a main indicator for the Millennium Development Goal of achieving universal primary education.

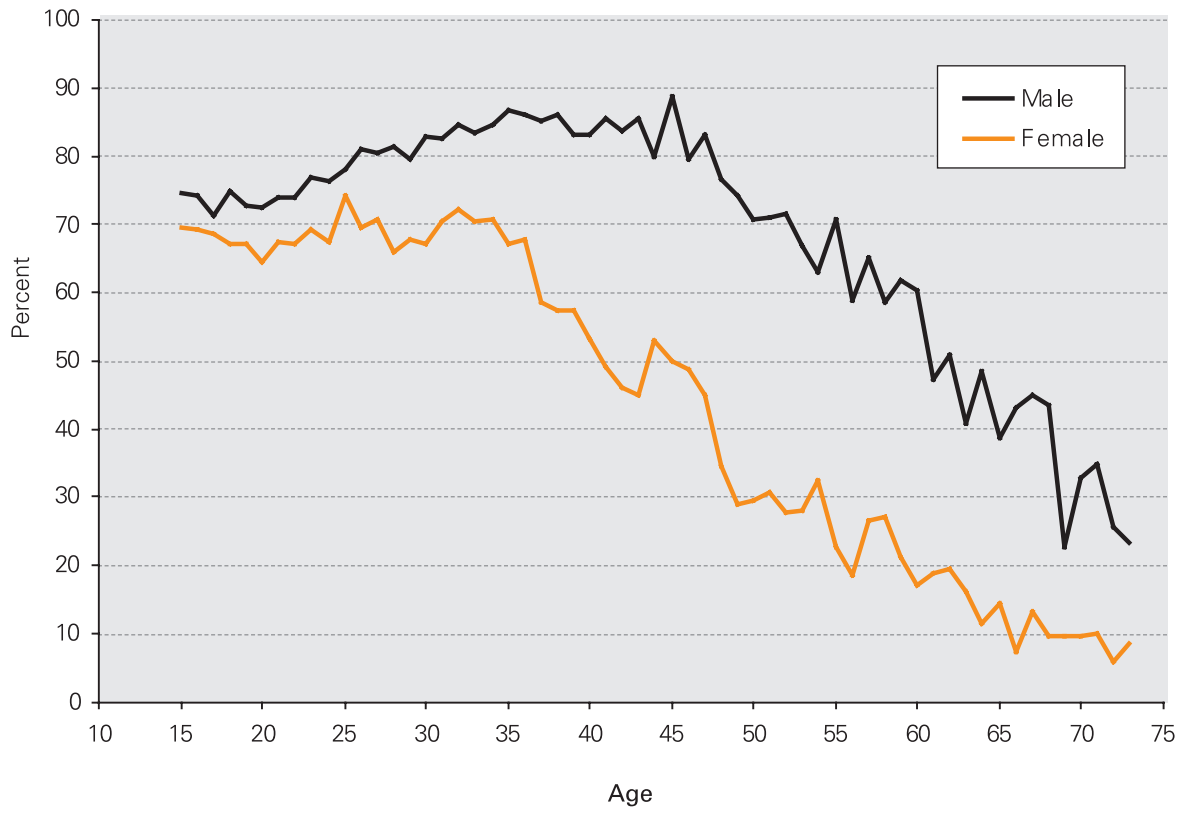
The youth (aged 15-24) literacy rate in Iraq is 74 percent, and the adult literacy rate is 65 percent. The developments in literacy rates over time can be seen by looking at the adult literacy rate by age, as illustrated in Figure 58. The figure reveals a disturbing trend: despite a substantial expansion of basic education in Iraq over the past 30 years, the literacy rate for the population between 15 and 24 is lower than the literacy rate for the population between 25 and 34. This is a result of the deterioration of the educational system in Iraq over the past 10 to 15 years. The gender gap has diminished over time, but this is mainly due to a decreasing literacy rate among men. At the same time, there is a stagnation of the literacy rate among women.

The population above 65 years has a very low literacy rate—39 percent for men and 14 percent for women (Figure 58). Apart from the diminishing literacy rate for the population below 24 years of age, literacy rates increase as age decreases. This reflects the successful literacy campaign launched in 1978 and continued throughout the 1980s. The literacy campaign entailed programmes for the adult population, and the effects can be seen in the high literacy rate for the population between 40 and 50 years, especially for men. The literacy campaign was not compulsory for people over 45 in 1980, which explains the low literacy rate for the oldest age groups today.

Large regional differences in literacy

According to a functional definition of literacy, 65 percent of the adult population in Iraq is literate, 10 percent are partly literate, and 25 percent are illiterate. Although some definitions of literacy are based on the proportion of adults who attended primary school, ILCS uses a functional definition based on a person's actual reading and writing abilities. A functional definition is useful because some people might go through primary school without learning to read and write properly, whereas others might learn to read and write without attending school. The functional definition is based on the ability to engage in everyday activities, such as reading a newspaper or writing a letter. "Literate" is defined as those who can read and write easily, or those who can write easily and read with difficulty. "Partly literate" is defined as those

Figure 58: Literacy among people aged 15 years and above by age and gender, in percent



who can read and write with difficulty, or those who can read easily and write with difficulty. "Illiterate" is defined as those who can neither read nor write. This categorization is based on the assumption that it is more difficult to write than to read.

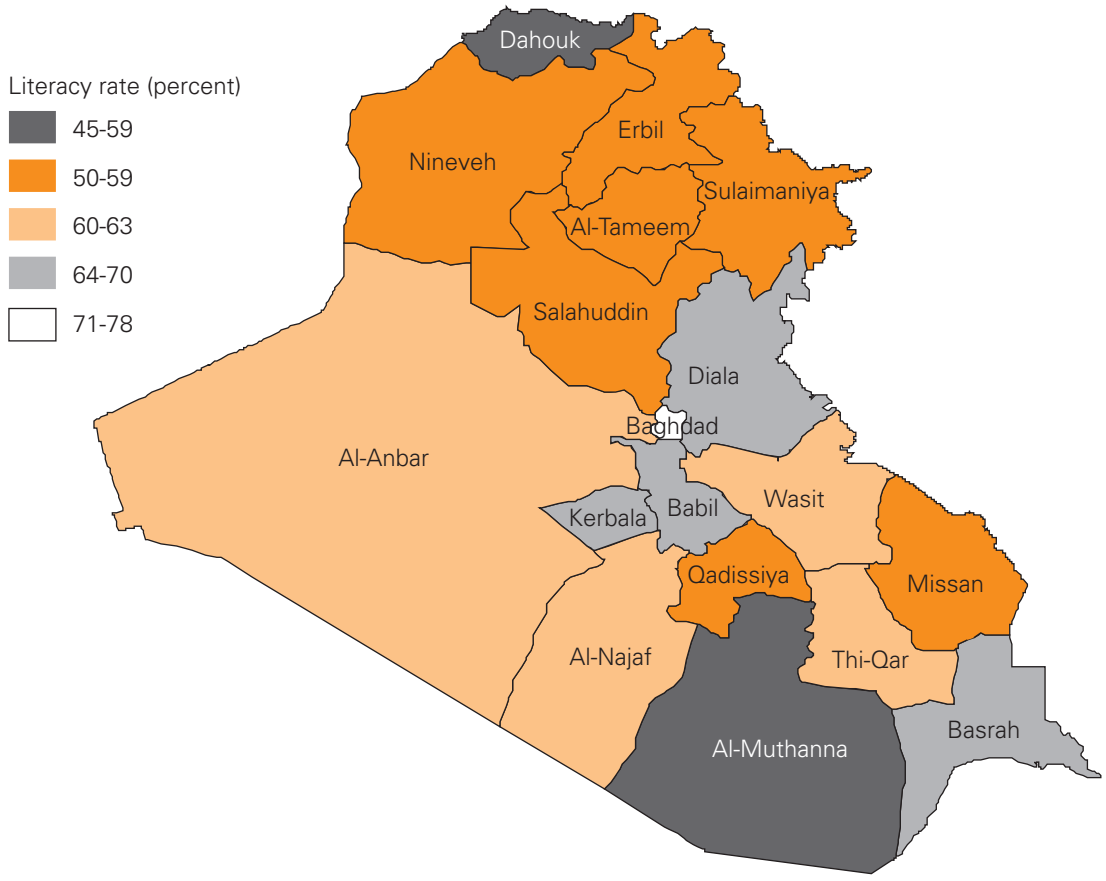
The levels of literacy in a society provide a good indication of the general educational level in places where universal literacy is not yet achieved. There are large disparities between the urban and rural populations. In rural areas, illiteracy is widespread: 39 percent of the rural population is illiterate, compared to 21 percent of their urban counterparts. The lowest literacy rates are found in Al-Muthanna and Dahouk, the highest in Baghdad and in Babil (Figure 59).

The gender gap in literacy is also large, with only 56 percent of women being literate compared to 74 percent of men. Women fare worse in some governorates than others. In Al-Muthanna and Dahouk over half of the women are illiterate; there are also high illiteracy rates for women in Salahuddin and Sulaimaniya. However, the gender difference is larger in the older age groups than younger ones, indicating that the gender gap has diminished over time.

Compared to some other countries in the region, Iraq has a low literacy rate. In Jordan, the adult literacy rate is 86 percent (Fafo 2004 forthcoming); in Syria, 75 percent (UNDP 2003). Conversely, Yemen's educational performance is particularly poor, with an adult literacy rate of 53 percent (UNDP 2003).

The ILCS data on adult literacy differ somewhat from UNESCO's *Situation Analysis of Education in Iraq*, which reports the adult literacy rate to be 71 percent for men and 45 percent for women (UNESCO 2003). UNESCO's data is only from the centre and south of Iraq. Because the literacy rate for women in these two regions is lower than the overall average for women in Iraq, UNESCO's literacy rate for women is substantially lower than ILCS's figure.

Figure 59: Literacy, persons aged 15 years and above



Highest completed education

Overall, 22 percent of the adult population in Iraq never attended school; 15 percent did not complete primary school; and 29 percent completed primary school. Nine percent have secondary school as their highest completed education, and 11 percent of the population has completed higher education (Table 56).

There are variations between the regions. The lowest educational levels are found in the north, where 31 percent of the adult population never attended school and only 7 percent started or completed higher education. In Baghdad, conversely, 13 percent of the population never attended school whereas 16 percent started or completed higher education. It is important to note that part of this might be an effect of migration. The capital city offers both university studies and work opportunities for people with higher education. In all regions educational levels are lower in the older age groups than in the younger age groups (Table 56).

At the governorate level, Baghdad has the highest rates of completed education, while Dahouk and Al-Muthanna have the lowest.

Higher education is more common in urban than rural areas, and educational levels are generally higher in the younger age groups than in older age groups. By looking at the highest completed education by five-year age groups, trends in educational levels are revealed. (Table 57).

The percentage that has never attended school is higher in the older age groups than in the younger age groups. For people below 35, the percentage that never attended school is around 10 percent. If the percentage of people that completed secondary school and the people that started or completed higher education is aggregated, the percentage falls with lower age (the youngest age group, from 15 to 19 years of age, is disregarded because this group is too young to have started university studies; in Iraq, people rarely enter university until the age of 20). In the age group 35-39, 32 percent have completed secondary school or started or completed higher education. In the age group 30-34, the corresponding percentage is 29. It continues to fall with lower age, hitting 22 percent in the age group 20-24. This indicates that the educational levels in Iraq are declining. At the same time, among the highest age

Table 56: Completed education in the population above 15 years by region, in percent

	South	Baghdad	Centre	North	Total
Never attended school	24	13	22	31	22
Incomplete primary	15	12	16	20	15
Primary	30	27	31	26	29
Intermediate	12	18	13	11	14
Secondary	8	13	8	6	9
Higher	10	16	9	7	11
All	100	100	100	100	100

Table 57: Completed education in the population above 15 years by 5-year age groups, in percent

	Never attended school	Incomplete elem.	Elem.	Intermed.	Sec.	Higher	All
15-19	10	22	40	23	4	0	100
20-24	10	21	32	15	16	6	100
25-29	10	16	35	13	9	17	100
30-34	9	15	32	14	13	16	100
35-39	17	9	29	13	13	19	100
40-44	27	10	21	11	12	20	100
45-49	33	12	22	9	8	16	100
50-54	42	11	20	9	6	12	100
55-59	56	7	15	7	5	10	100
60-64	61	7	13	5	4	9	100
Total	19	16	30	14	10	11	100

Table 58: Completed education in the population above 15 years by gender, in percent

	Male	Female	Total
Never attended school	13	31	22
Incomplete primary	15	16	15
Primary	31	27	29
Intermediate	16	11	14
Secondary	11	7	9
Higher	14	8	11
All	100	100	100

Table 59: Completed education in the population above 15 years by income. 2004 per capita household income quintiles, in percent

	Lowest income	Low income	Medium income	High income	Highest income	Total
Never attended school	27	24	21	19	17	22
Incomplete primary	19	19	15	13	10	15
Primary	31	32	31	29	23	29
Intermediate	11	13	15	15	15	14
Secondary	6	7	9	11	14	9
Higher	5	5	9	12	22	11
All	100	100	100	100	100	100

Table 60: Completed education in the population aged 15-20 by education of father, in percent

	Fathers education						
Education of child	Never attended school	Incomplete primary	Primary	Intermediate	Secondary	Higher	Total
Never attended school	22	11	6	3	3	1	9
Incomplete primary	26	33	25	18	10	4	21
Primary	38	39	48	46	41	29	41
Intermediate	12	16	19	27	41	53	25
Secondary	2	1	2	5	6	12	4
Higher	0	0	0	0		0	0
All	100	100	100	100	100	100	100

Note: Only children with father present in household included.

Table 61: Completed education in the population aged 15-20 by education of mother, in percent

	Mothers education						
Education of child	Never attended school	Incomplete primary	Primary	Intermediate	Secondary	Higher	**Total**
Never attended school	16	4	3	1	0	2	**9**
Incomplete primary	27	29	14	8	3	1	**21**
Primary	40	43	49	40	26	19	**41**
Intermediate	15	21	30	44	55	61	**25**
Secondary	2	2	4	8	14	17	**4**
Higher	0	0	0	0	0	1	**0**
All	100	100	100	100	100	100	**100**

Note: Only children with mother present in household included.

groups, the education level is generally low, with a higher percentage that never attended school than found in younger groups.

There are marked gender differences in educational levels. Overall, 31 percent of women and 13 percent of men in Iraq have never attended school. Gender disparities are also evident in higher education, with 14 percent of men versus 8 percent of women having started or completed higher education (Table 58). The gender disparities persist through regions and age groups.

Educational achievement is greater among high-income than low-income groups. In the highest income quintile, 22 percent have started or completed higher education, versus only 5 percent in the lowest income quintile. Similarly, 17 percent of the population in the highest income quintile never attended school, compared to 27 percent in the lowest income quintile (Table 59).

The education of parents has an impact on the educational levels of the children. Between the ages of 15 to 20, it is expected that children will have completed intermediate school, if not completed secondary or started higher education. Of those whose father has higher education, 53 percent have completed intermediate school, as opposed to 12 percent with fathers that never attended school (Table 60). The effect is more striking when the mother has higher education: 61 percent of 15 to 20 year-olds with highly educated mothers have completed intermediate school, as opposed to 15 percent with mothers that never attended school (Table 61).

Children reaching grade five

The presence or absence of children in school, as described by enrolment rates, does not reveal what children actually learn. This is difficult to quantify in a survey, but some indication is given by measures of "internal efficiency," which measure how children perform once they are enrolled. The "survival rate" and "repetition rate" are the chief measures of internal efficiency. The rate of children reaching grade five—the survival rate—is the third indicator attached to the Millennium Development Goal of achieving universal primary education.

In Iraq, 89 percent of children enrolled in school reach grade five. According to official policies, children born in 1992 (i.e. 11 and 12-year-olds at the time of the survey) should have completed grade four in 2004. However, due to the delayed enrolment for some population groups, some children born in 1991 and 1990 were still in grades three and four in 2004. Most of these children are expected to reach grade five within the next couple of years. Therefore, it was decided to report the share of children reaching grade five for children that were born in 1988 and 1989 (i.e. children aged 14, 15, and 16 at the time of the survey) and that, at one time, have been enrolled in school. Reaching grade five is also reported for all age groups from 1986 to 1992 (Table 62).

The ILCS indicator on children reaching grade five is based on the number of children that have completed grade four. This indicator does not reflect whether or not the children have continued to grade five.

Table 62: Children reaching grade five by year of birth, in percent of children born 1986-1992[11]

	Has completed grade 4	All
1986	92	100
1987	93	100
1988	93	100
1989	93	100
1990	90	100
1991	87	100
1992	78	100
Total	89	100

There are marked differences between urban and rural areas. In urban areas, 91 percent of the children enrolled in school reach grade five, as opposed to 84 percent in rural areas (Table 63). Children are most likely to reach grade five in Baghdad (93 percent) and least likely in Al-Muthanna (78 percent).

Table 63: Children reaching grade five by place of residence, in percent of children born 1986-1992

	Rural	Urban	Total
Has completed grade 4	84	91	89
All	100	100	100

There are small differences between boys and girls in reaching grade five. However, if gender between urban and rural areas is isolated, results show that rural girls have significantly lower rates of reaching grade five than urban girls (Table 64). Place of residence thus seems to strengthen the effect of gender, and rural girls are particularly vulnerable to dropping out of school at an early age.

Table 64: Children reaching grade five by gender and place of residence, in percent

	Male		Female		Total
	Rural	Urban	Rural	Urban	
Has completed grade 4	85	90	82	92	89
All	100	100	100	100	100

11. As can be observed, the precise figure for children reaching grade five depends somewhat on the time reference.

The rate of children reaching grade five estimated by The UNICEF Multiple Indicator Cluster Survey for the year 2000 (MICS) is similar to ILCS's rate. Unicef estimates that 88.3 percent of children in Iraq who enter first grade reach grade five—92.2 percent of boys and 83.6 percent of girls (Unicef 2001).

Repetition

Children have to repeat one year if they do not perform at the level of the grade they are in. Together with survival rates, repetition rates tell us something about the quality and efficiency of the educational system. In Iraq, 20 percent of children currently enrolled in primary school have repeated at least one year: 23 percent of boys and 16 percent of girls (Table 65).

Repetition rates for primary school are about the same in rural areas (22 percent) as in urban areas (20 percent), but there are marked differences between governorates. The highest repetition rates are found in Erbil and Al-Muthanna (32 percent), the lowest in Basrah. A similar pattern is found at the intermediate level, although the repetition rate is higher.

Among children currently enrolled in intermediate school, 34 percent have repeated at least one year—37 percent of boys and 29 percent of girls. There are no important differences between urban and rural areas, but some governorates have very high repetition rates in intermediate school: in Dahouk, the repetition rate is 67 percent, while in Sulaimanyia it is 65 percent.

Table 65: Repetition rates primary school and intermediate school by gender

	Primary school			Intermediate school		
	Male	Female	Total	Male	Female	Total
Not repeater	73	79	76	60	67	63
Repeater	23	16	20	37	29	34
Used shorter time	4	4	4	3	3	3
All	100	100	100	100	100	100

Cost of education

The annual cost of education to parents increases as children climb the educational ladder (Figure 60). Primary school costs 60,000 Dinars per year, rising to 100,000 Dinars per year for intermediate school and 150,000 Dinars per year for secondary school. This includes fees and all other compulsory expenses, such as uniforms, materials, meals, private lessons, and other costs. There is no difference in cost between academic and vocational secondary education.

In the logistic regression analysis above, income had a significant effect on the predicted enrolment in primary school, although not as strong as the effect of access to school, gender, and place of residence.

Figure 60: Annual cost of education in 1,000 Iraqi Dinars

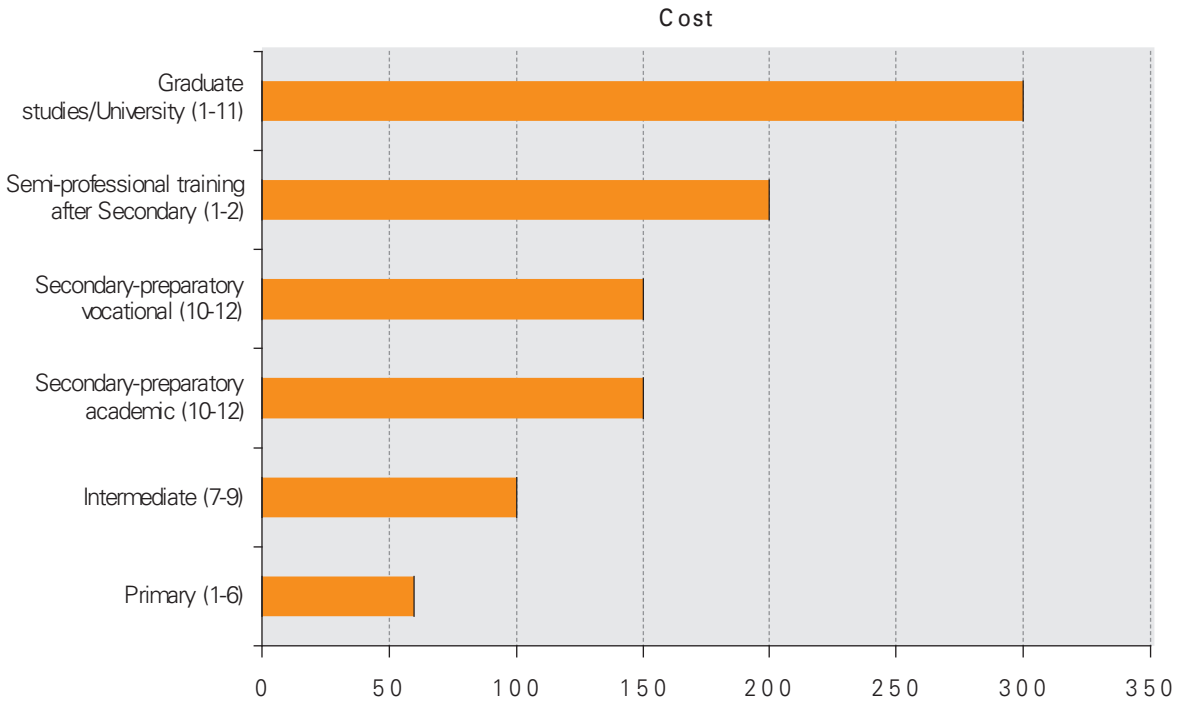


Table 66: Per capita household income by education of household head, in percent

	Lowest income	Low income	Medium income	High income	Highest income	All
Never attended school	27	23	20	17	13	100
Incomplete primary	27	25	20	16	13	100
Primary	26	25	20	17	13	100
Intermediate	22	22	21	17	17	100
Secondary	18	19	22	20	20	100
Higher	13	14	19	25	29	100
Total	**23**	**22**	**20**	**18**	**17**	**100**

Economic returns to education

As seen in chapter 8, higher education leads to higher labour force participation rates, although the effect is stronger for men than for women (Tables 73 and 74). However, unemployment among young men with secondary or higher education is very high (37 percent); subsequently, many people are discouraged and have given up looking for work.

People with higher education in Iraq enjoy better economic conditions than people with little or no education (Table 66). Among families where the household head has completed higher education, 29 percent belong to the highest income quintile, with an additional 25 percent among the second highest income quintile. Conversely, in families where the household head never attended school, 13 percent belong to the highest income quintile and 17 percent to the second highest income quintile. This shows that, although entrance to the labour market is difficult for young, educated people, economic returns on education are high in the long term.

Challenges for the Iraqi education sector

The Iraqi education sector has suffered substantially from the turbulence over the past two decades. Low enrolment rates and high repetition rates are widespread, and the stagnation in literacy levels for both men and women are concerning. The gender gap in education persists, and the poor educational performance of women in some governorates is alarming.

In order to achieve universal primary education in Iraq, a rejuvenation of the education sector is needed. The Iraqi government will need to improve the access to schools in rural areas, enhance the quality of education by increasing teacher salaries and amplifying teacher education, and initiate a renewal of the curricula at all levels. Special attention should be given to girls' education, especially in rural areas and in those governorates where female illiteracy rates are very high.

Investing in education has an immediate positive effect on a post-conflict society, because well functioning schools provide a sense of normality and encourage the population to invest in the future. Iraq has strong human capital that will be key to the task of restoring the education sector.

7. Women in Iraq

Summary

After improvement in women's position in the labour market and education in the 1970s, there have been several setbacks during the last 15 years. A more traditional approach to gender issues has weakened the push for women's rights, and during the last 15 years the level of education has dropped among Iraqi women. However, the economic difficulties after the first Gulf War seem to have decreased the level in men's education relatively more than among women.

Women in rural areas have significantly lower levels of education than urban women, and the enrolment rate for young girls is also low in rural areas. Today, low levels of education among women in the northern region is being compensated for by a significantly higher enrollment rate among girls in elementary and intermediate levels, compared to other areas. This shift demonstrates how international assistance influences the educational level.

Women's presence in the labour market today is one of the lowest levels in the region, and increased participation represents a source of potential economic growth in the Iraqi economy. Most women present in the labour force have either low education, such as those living in rural areas and working in the agricultural sector, or are highly educated. Women in the latter group are often employed in education, and typically live in urban areas.

Introduction

This gender analysis of the present living condition of Iraqi women is based on a presentation of data from different arenas where gender is a central element of understanding women's total situation. The main focus is on women's role in education and the labour force. Women's role in the family will be focused on when data is presented on female heads of households. Because the security situation is a major obstacle to individual freedom in women's everyday life, information about women and security will be presented as a separate section in this chapter. Women's reproductive role and their health situation are presented in the health chapter. A historical presentation will be given first.

Background

The first move towards paid employment of women in Iraq occurred with the opening of the Teachers Training Institute in 1923, where women worked as teachers, nurses, and office employees. The first short-lived women's movement took up the question of women's rights in the 1920s. According to Farouk-Sluglett, subsequent women's organisations in the '40s were connected to the underground opposition, very often to the Communist Party (Farouk-Sluglett 1993:64).

In the late 1960s the Ba'ath party started an ideological campaign for women's participation in the labour force and educational system. Based on the idea of modernization, the campaign insisted that women should play a crucial role in the national revolution. This "state feminism" was common for many countries in the region after decolonisation, and women's emancipation was an integral part of the national development (World Bank 2004b:19-20).

The contradiction between the values of a new role for women on the one hand, and the emphasis on the national Arab patriarchal family structures on the other, have led to debates about the Ba'ath party's effect on women's liberation in Iraq (Farouk-Sluglett 1993:69). Nevertheless, a massive education campaign of Iraqi girls was carried out in the '70s. The introduction of free education in 1974 and obligatory school in 1979-80 had significant effects on the education of girls in Iraq (al-Sharqi 1982:80).

A national literacy campaign for women was introduced in 1978; according to the former regime, the campaign reached 1.5 million women and eliminated illiteracy in most regions (al-Sharqi 1982:82). Yet data from the ILCS shows a high level of illiteracy among women today. However, a significant increase in the level of education among girls who began school in the 1970s can be measured.

The General Federation of Iraqi Women was founded after the Ba'ath party came to power in 1968. The Federation was a central implementer in the education and anti-illiteracy campaigns, and operated as an organ for the Ba'ath party responsible for women's issues. When the Communist party and the Ba'ath party merged in 1974, the General Federation was the only national women's organisation in Iraq. The women's movement focused particularly on motherhood and the importance of building strong and solid families. At the same time, the chairman criticized the women's liberation movement in Europe for not respecting motherhood and pushing women into wrong attitudes (Farouk-Sluglett 1993:66-72).

According to the World Bank, the rapid increase in real wages in the '70s made it economically possible for the husband to be the only breadwinner of the family. Due to economic decline and unemployment in the 1980's, the existing encouragement of women's participation slowed down in several countries in the region; the popular view was that men should receive preference for the limited supply of jobs (World Bank 2004b:20). Furthermore, since the public sector was the major employer for women, drops in wages in the public sector over recent years has reinforced the withdrawal of women from the labour force. Today, women's participation in the labour force and education is among the lowest in the region.

According to Brown and Romano, women's legal rights were either removed or shifted in a more conservative and traditional patriarchal direction after the Iran-Iraq war. Women's rights degenerated even more significantly after 1990, in order to give the regime stronger support among religious leaders and the neighbouring countries (Brown and Romano 2004:1-6). A recent study of the southern provinces of Iraq showed that half of the respondents agreed that there are reasons to restrict women's educational and work opportunities at the present time (Amowitz 2004:1475). Today, security problems seem to be a main obstacle for women's freedom in their everyday life, especially in the southern and the central part of the country (Brown and Romano 2004:11). However, after 30 years of total governmental control of women's political activities, independent women's groups are now being established throughout the country.

Level of education

In the 1970s, an increased focus on education had a significant effect on the level of education among all children, especially for girls. Conversely, the drop in the level of education during the last years has had a considerable effect on the education of both girls and boys, but boys have been relatively more affected. The gender gap is most significant on the lowest level of the education system. Iraq today is far behind the two United Nations Millennium Development Goals on education: to ensure that all boys and girls complete a full course of primary schooling; and to eliminate gender disparity in primary and secondary education, preferably by 2005, and at all levels by 2015. In rural areas, 38 percent of women between 15 and 24 have not completed elementary education. The number in urban areas is every fourth young woman

Although the focus on girls' education in the '70s led to a substantial increase in elementary education, the level is now falling. For women born in the 1970s—those now aged between 25 and 34 years—32 percent have never been enrolled or not completed elementary education, compared to 68 percent of those between 45 and 54 years. Today, the number of women between 15 and 24 years who have not completed elementary school has increased to 36 percent. In contrast, while 17 percent of men between 35-44 years have not completed elementary education, this figure rises to 27 percent among young men between 15 and 24 (Figure 61).

Looking at the variations in educational levels between the different areas, significant regional differences are found. While 30 percent of women above 15 years in Baghdad have never been enrolled or not completed elementary education, the numbers are twice as high among women in the north. Women in Baghdad also have a higher level of elementary education than men in the northern region (Figure 62).

Sulaimaniya, Dahouk, and Al-Muthanna have the lowest level of education among all women above 15 years: more than 60 percent of women aged 15 and over have less than elementary education in these governorates, compared to 32 and 38 percent in Baghdad and Basrah, respectively. However, the urban/rural difference seems to be the most important variable explaining the low level of education among women. 64 percent of rural women above 15 years have not completed elementary education.

Today, girls have a significantly lower enrolment rate in primary schools (school age 7-13 years) than boys. The gender gap is considerably higher in the rural areas: presently 40 percent of the girls in rural areas are not enrolled in primary education, compared to 20 percent in urban areas. Dahouk, Sulaimaniya, Erbil, Basrah and Al-Tameem have the highest female enrolment rate, above Baghdad's level at 79 percent (Figure 63).

Figure 61: Incomplete elementary education (includes never enrolled or not completed), in different age groups

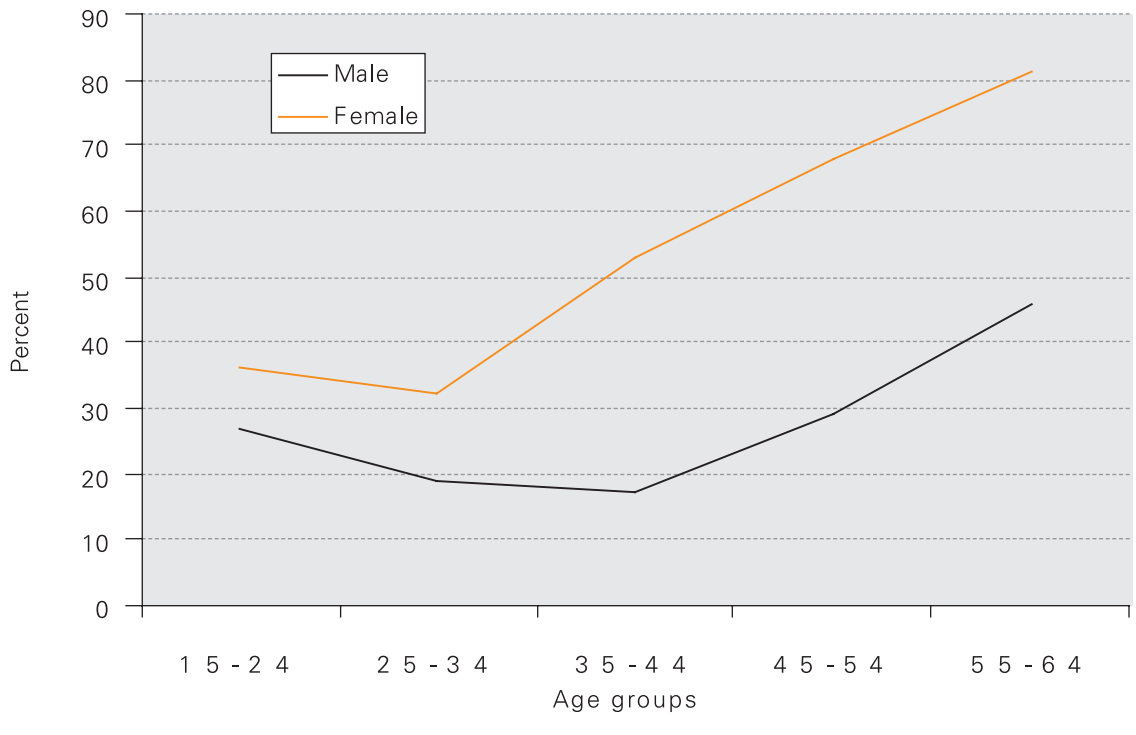


Figure 62: Incomplete elementary education (including never enrolled or not completed), by region

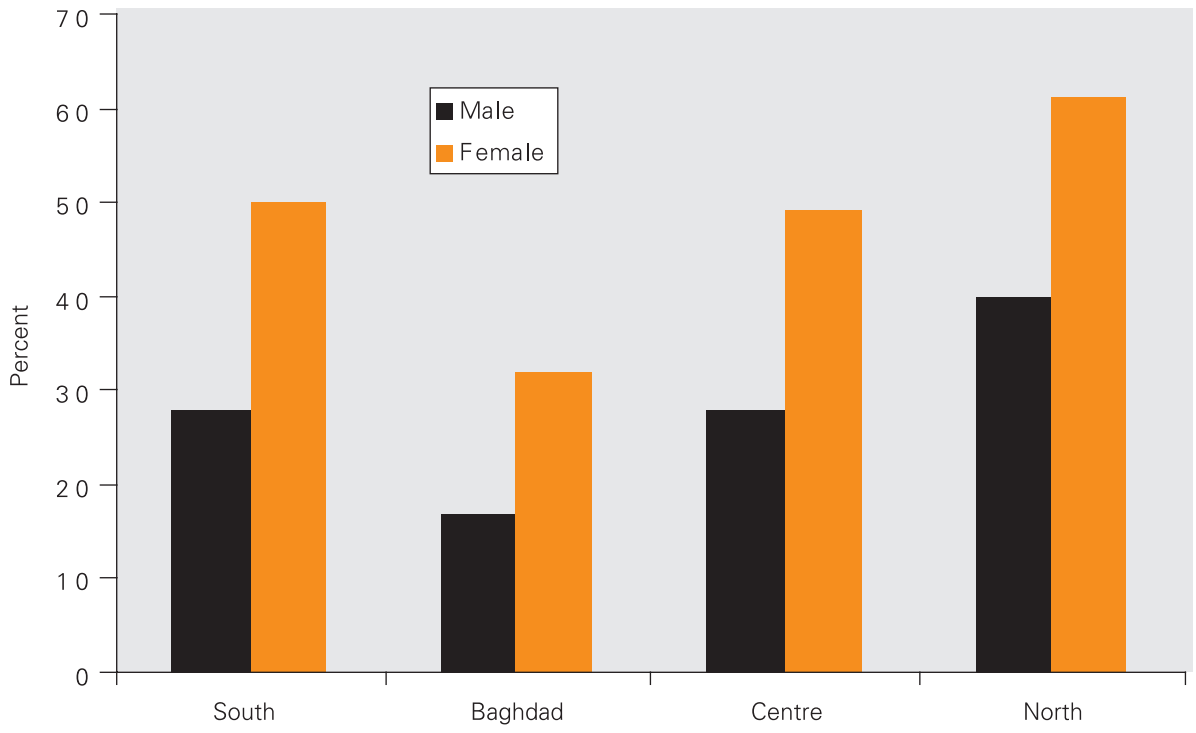
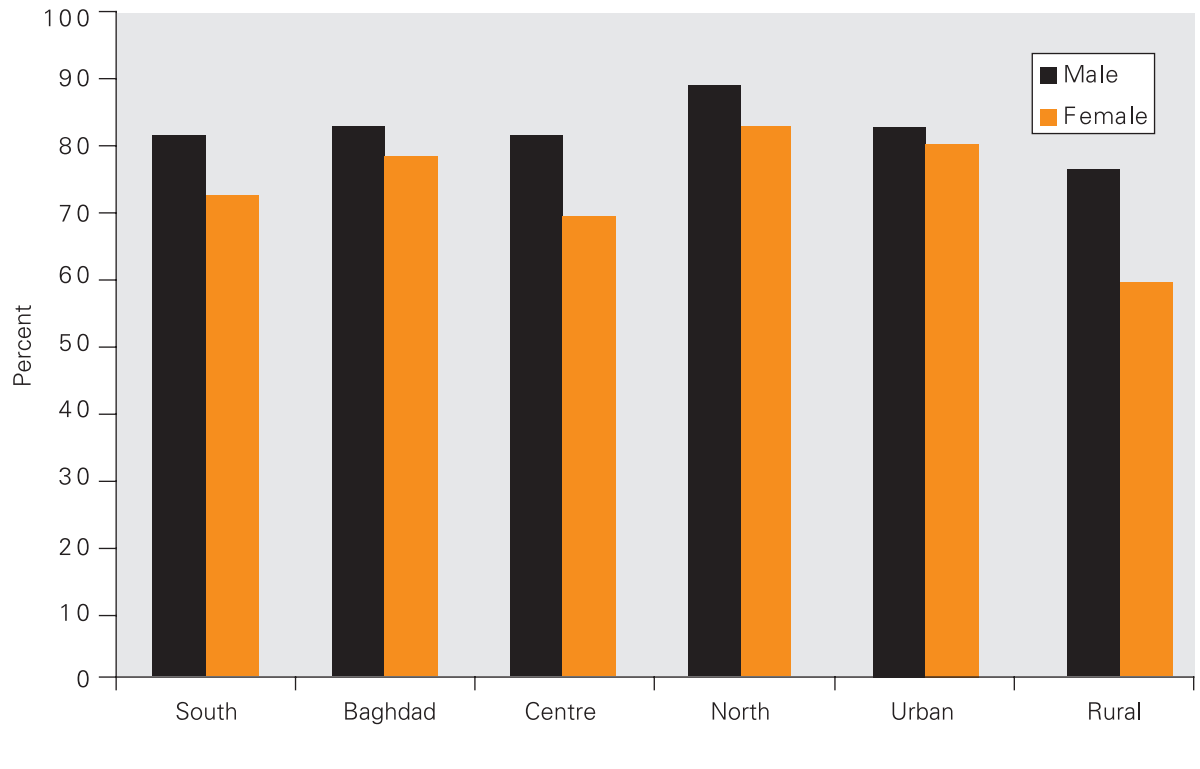


Figure 63: Net enrolment rates in primary school



In the ILCS, heads of household were asked why some children are not enrolled in school. From households in which girls between 7 and 14 years are not enrolled, answers can be divided into four major categories: family poverty; lack of interest in attending school; lack of schools nearby; and that family does not want girls to go to school. The category of "lack of interest" is on the same level for seven-year-old girls as for the older girls; this indicates that the lack of interest must be understood as a household decision rather than the girl's own decision. Lack of interest is the main explanation for why girls are not enrolled. "Family does not want girls to go to school" is the second most important explanation for why girls are not enrolled, given by approximately every fifth household where girls are not enrolled. This explanation occurred more often in the central than in other regions: in Wasit and Al-Anbar, over 30 percent of the relevant households gave this reason when asked why girls do not attend school (Figure 64).

At the intermediate level (school age 13-16 years), there are significant regional and urban/rural differences among enrolment rates for young women. The female enrolment rate at the intermediate level in urban areas is 44 percent, compared to 13 percent in rural areas. The northern governorates have 47 percent enrolment of girls—comparable to Baghdad—while only 25 percent of girls in the central region are enrolled at this level (Figure 65).

Taking into consideration the low level of education among women in the north, it is interesting to see that, in the north, the gender gap is more or less closed at the intermediate level, and the enrolment rate has almost reached Baghdad's level. Furthermore, the gender gap at the elementary level is very low, compared to the considerable gap among the higher age groups. Last year's focus on the education of women in these provinces has lead to visible improvements in the enrolment rate, and a continuation of this process would raise the general level of education in the region in a few years.

After a peak in the number of students in higher education during the oil–boom years of the 1970s, there has been a drop in enrolment, especially during the last 10 years. Figure 66 shows completed higher education in the age groups above 30 years, by gender. Although there is a drop in men's enrolment over the last 20 years, the number of women in higher education actually increased until 10 years ago. Today, the number of young people enrolled in higher education is very low. Due to a higher general level of men in higher education, the drop over the past year has been relatively more significant among young men than among women.

Figure 64: "The family does not want the girl to go to school." Household explanation when girls between 7-14 years are not enrolled

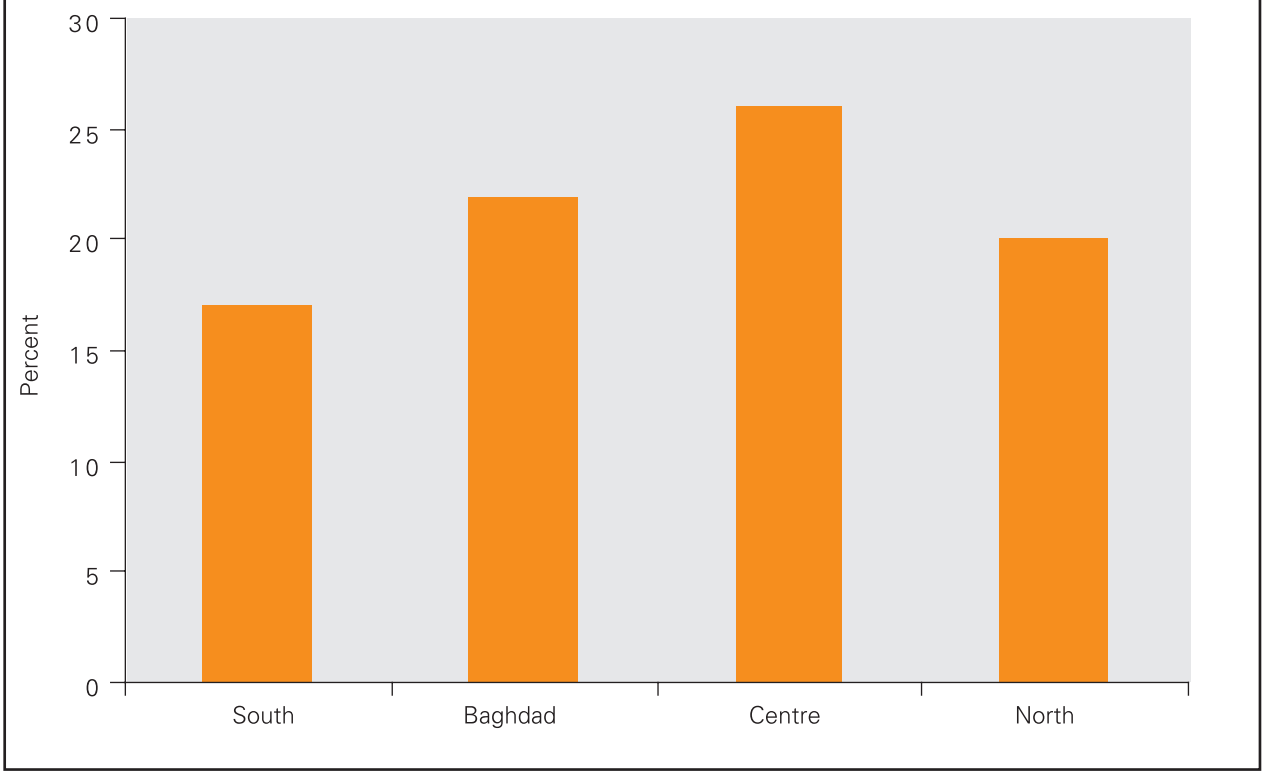


Figure 65: Net enrolment rates in intermediate schools, by gender and region

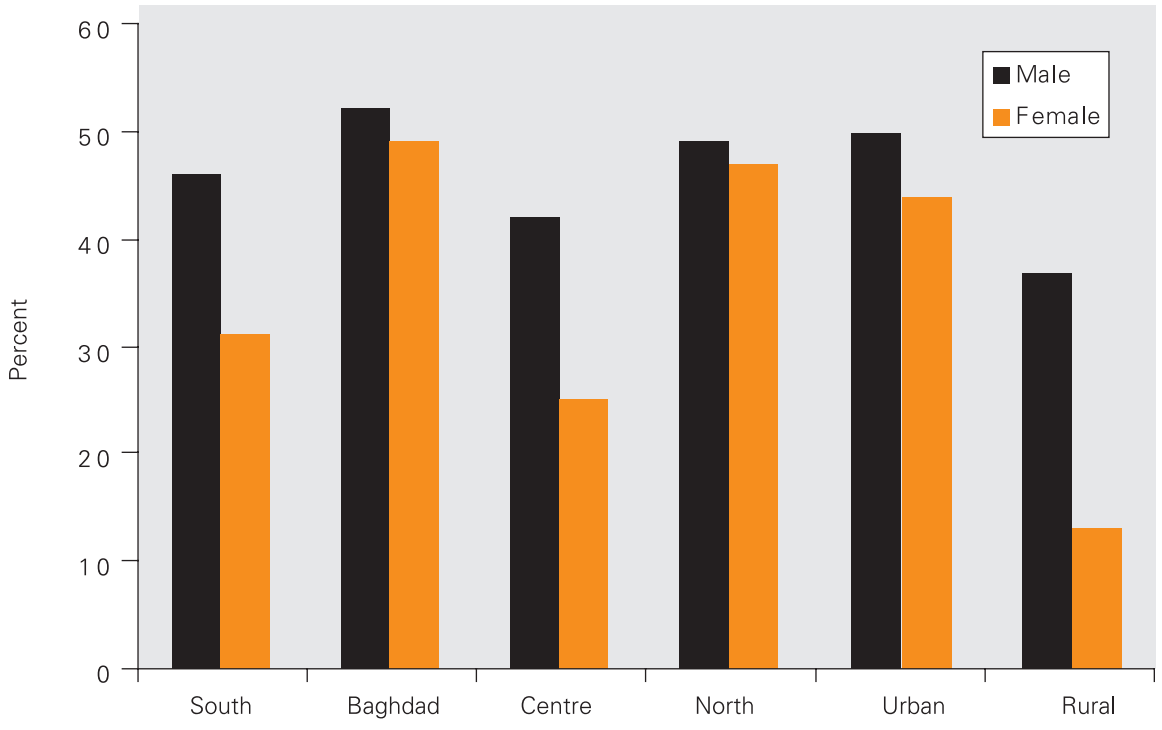
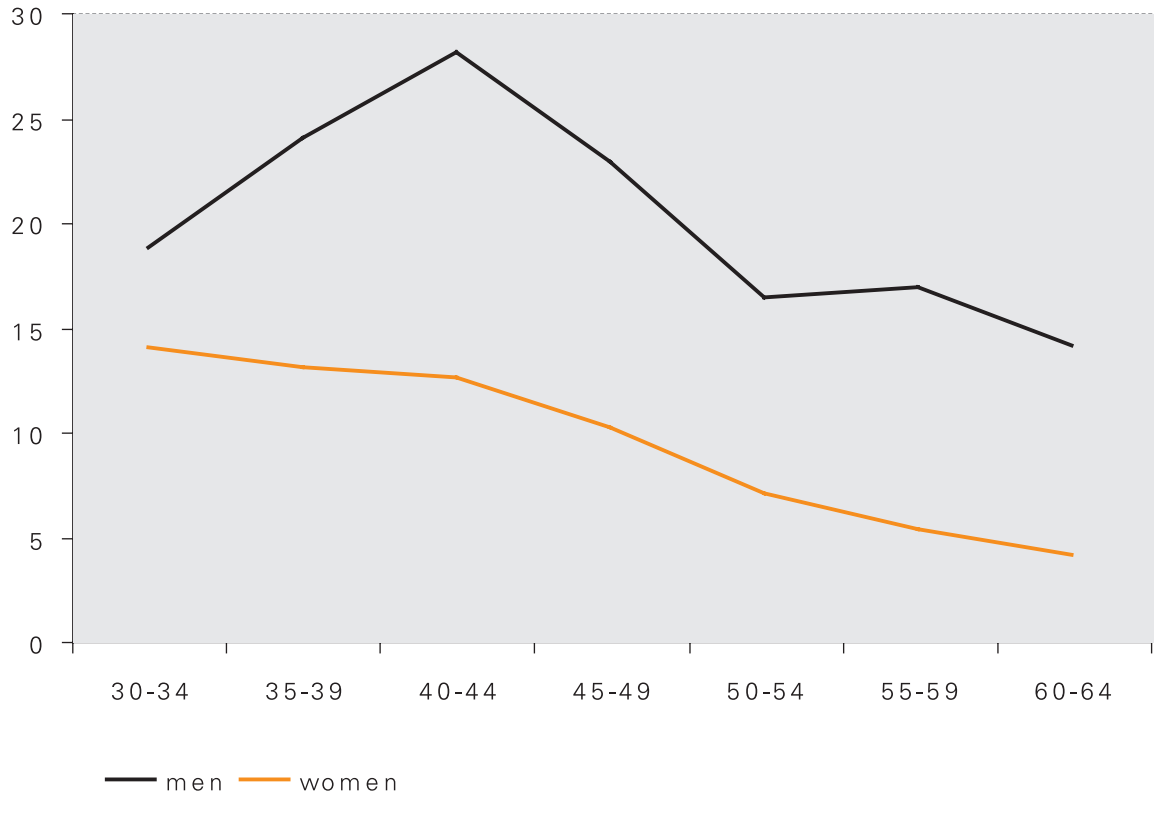


Figure 66: Completed higher education, by gender and age groups



Looking at men above 30 years, less than 20 percent of those between 30 and 34 years have completed higher education, compared to 28 percent of those between 40 and 44 years. This drop is not found among women enrolled in higher education during the 80's. Even if less women have higher education than men, the gender gap has decreased significantly due to a drop in the men's level (Figure 66). High numbers of women in higher education is a trend throughout the region. The drop among men could be explained by the fall in oil-prices after the 70's and the increased need for young men to take part in the labour force. Being enrolled in higher education periodically exempted young men from military service. This principle would probably keep the number of men in universities high. The drop in number of men enrolled in higher education throughout the war with Iran, tells us about the economic problems of the country before 1990.

Literacy

Forty-seven percent of women in Iraq are illiterate or partly illiterate. While 72 percent of women in Baghdad are fully literate, less than half of the women in the northern region are literate (46 percent). The gap between men and women is highest in the northern areas, where the literacy rate is approximately 20 percent lower for women than men.

The difference in literacy between women living in urban or rural areas is more considerable than between men living in different areas. While half of the rural female population is totally illiterate, less than 30 percent of urban women are illiterate. The gap between urban and rural women amounts to 22 percent, whereas the difference among the male counterparts is only 13 percent: 26 percent of men in rural areas are illiterate, compared to 13 percent of urban men.

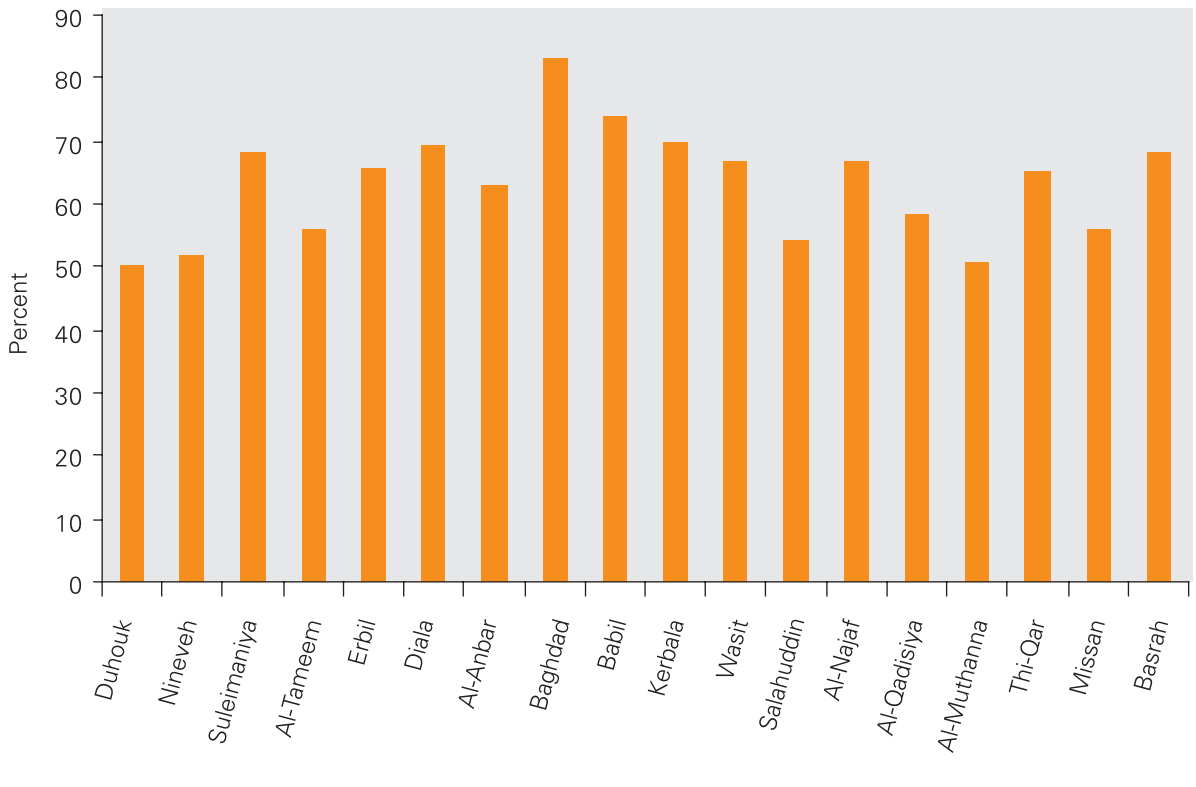
Forty percent of women in Dahouk, Erbil, Thi-Qar, Al-Muthanna, Al-Qadisiya, Wasit, Salahuddin, Al-Tameem, Sulaimaniya, and Missan are fully illiterate (these numbers do not include partly literate people).

The fact that the average level of literacy among women in all age groups is 53 percent could be explained by low the levels of education before the 1970s. More troubling is the low literacy rate for women between 15 and 24 years. The fact that every fourth young woman in Dahouk, Nineveh, Al-Tameem, Erbil, Wasit, Salahuddin, Al-Qadisiya, and Al-Muthanna is recognised as totally illiterate is an important challenge for Iraqi society (Figure 67).

Female-headed households

Female-headed households comprise 11 percent of the total number of households in the ILCS. Of the households headed by women, 73 percent are led by widows; therefore the members are older and the size smaller than in other households in Iraq. The mean

Figure 67: Literacy rate for women between 15 and 24 years



age of the head is 10 years older in female-headed than male-headed households; this is approximately the same age difference (in comparison to male-headed households) as among Palestinian refugees in Jordan, Syria, and Lebanon (Jacobsen 2004:20). Some regional differences in the commonality of female-headed households are found: there are more female-headed households in the northern regions of Iraq and in Baghdad.

Female-headed households are not poorer than male-headed households according to the measure of income per capita. To get a better understanding of the level of income in female-headed households, the income level was compared to the income level in households with heads below 50 years, since older households in general are wealthier than younger households. In doing so, results showed that 28 percent of the female-headed households are in the lowest capita income quintiles, compared to 20 percent of the male-headed households in the same age groups.

Other indicators demonstrate an income gap between male- and female-headed households. Forty percent of all female-headed households find it impossible to raise 100,000 Iraqi Dinars within a week by using their own savings or with help from others, compared to 26 percent of male-headed households. Only 15 percent of the female-headed households think it would be possible to raise that amount of money within a week from their own savings, compared to 22 percent of the male-headed households.

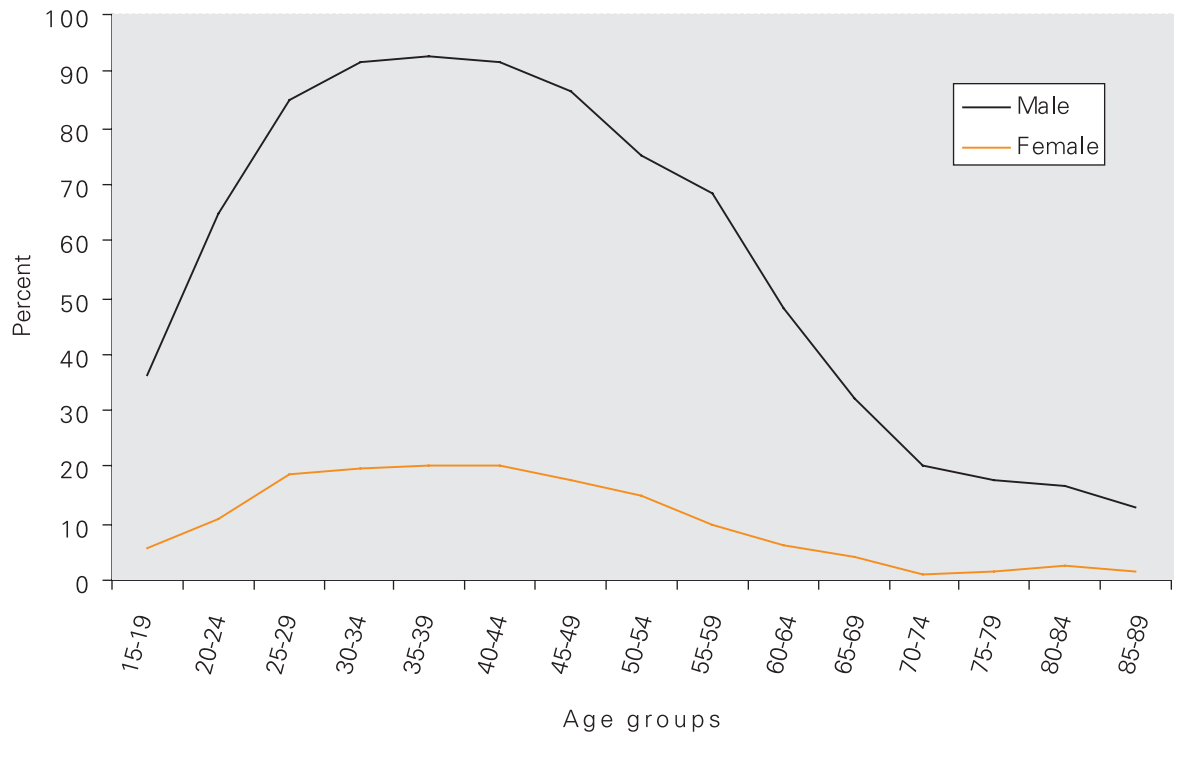
Female-headed households did not get more vulnerable under the UN sanctions than male-headed households. Fifty-four percent of the female-headed households responded either that they have always had economic difficulties, or that their problems started before the UN sanctions, compared to 48 percent of the male-headed households.

Twenty percent of female-headed households with heads below 60 years have women taking part in the labour force, compared to 12 percent among women living in male-headed households with heads younger than 60 years. Women's participation in the labour force can be viewed as an effect of income need for the household. The female-headed households are able to exploit the economic potential of female participation in the labour force.

Women in the labour force

Women in the Middle East and Northern Africa have among the lowest level of participation in the labour force in the world: only 30 percent participate in the labour force. Labour-abundant and resource-rich countries such as Algeria, Iran, Iraq, Syria, and Yemen tend to have lower female labour force participation rates than resource-poor countries like Egypt, Jordan, Lebanon, Morocco, and Tunisia. While the resource-poor countries are more dependent on women's economic participation because of labour-intensive production, the resource-rich countries have not likewise exploited the economic potential of women

Figure 68: Labour force participation, by gender and age groups



(World Bank 2004b: 63-64). Estimates from the World Bank demonstrate that increased female labour force participation could boost average household earnings by 25 percent. Thus, low female labour participation has high costs for the economy and the individual family. (World Bank 2004b:7)

Most non-working women are not searching for a job, and are not counted as part of the labour force. Unemployed women in this curve are registered as a part of the labour force. (Figure 68) The unemployment level among women is generally low because it measures women searching for a job, and does not account for women who are unemployed and not seeking employment. Unemployment mainly occurs among highly educated women and female heads of households.

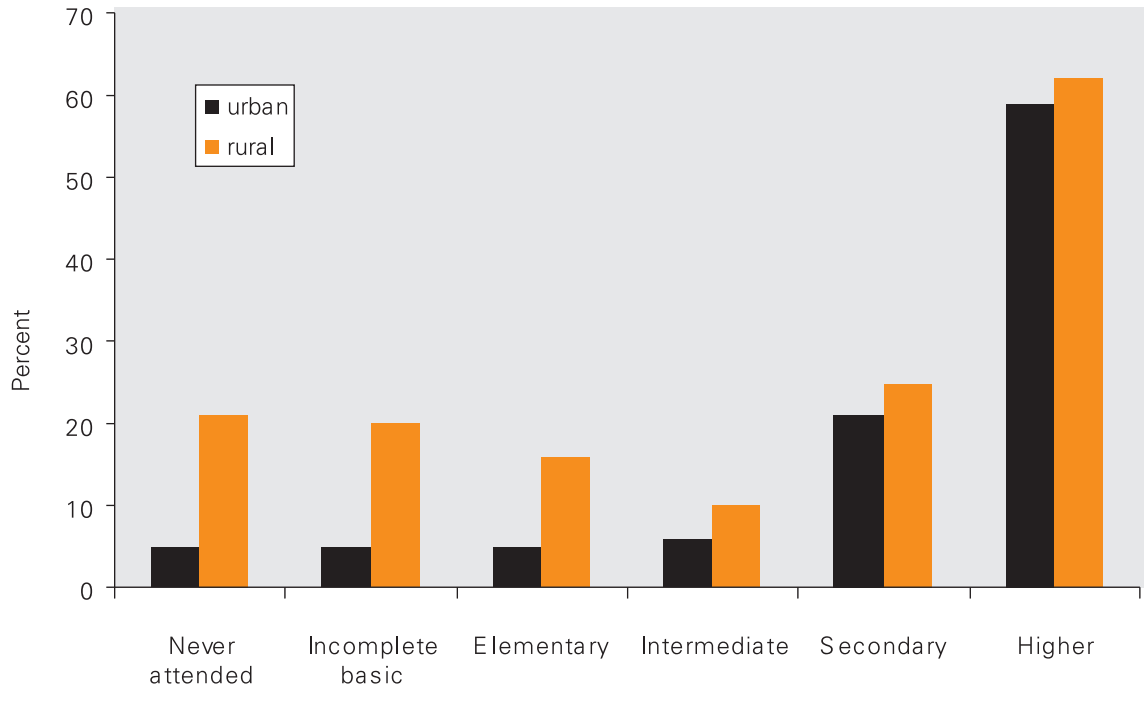
The employment rate for women above 15 in the ILCS is 13 percent. This is roughly the same level as the ILO's Labour Statistics from 1987, which showed a labour force participation rate of 11 percent for women above 15 years, compared to 75 percent for men (ILO, Labousta, Iraq 1987). Approximately 20 percent of women between 25 and 45 years are taking part in the labour force; this decreases to 10 percent of the 55-59 year-olds, and to 5 percent of the 65 year-olds. (Figure 68) According to World Bank statistics, the average for the corresponding age groups in the Middle East/Northern Africa region is 35-40 percent (World Bank 2004b:9), the lowest level of women participation in the labour force among all the regions of the world.

Female participation in the labour force in Iraq has two main components: highly educated women taking skilled positions in the labour force, and low-educated women working in the agricultural sector in rural areas.

From other Middle East studies, it is also evident that women with high education and middle class backgrounds often take part in the labour force. On the other hand, women's participation can be understood as a function of the need for income to the household. Women are also likely to be employed in family businesses, including agriculture (Jacobsen 2004:28-30). This dual picture of women's participation in the labour force is also found in Iraq. More than 30 percent of working women are employed in the agricultural sector, while among 40 percent work in public administration and education.

Furthermore, this dual picture is also found when looking at other indicators. There is a correlation between women's participation in the labour force and the general income of the family in Iraq: the higher the income, the higher the participation of women in the labour force. Women between 15 and 55 years with more than secondary education have a participation employment rate of 42 percent. This results in a much higher median wage for women than for men, but when controlling for industry, women appear to have a slightly lower median wage than men. The current employment rate (not including unemployed) for women is almost twice as high in rural areas compared to urban ones, but the general

Figure 69: Female labour force participation, by education and place of residence



income is lower in rural areas. The highest proportion of employed women (not including unemployed) is in Salahuddin, where 25 percent of women between 15 and 55 years are employed.

The dual picture persists in looking at the employment figures and education levels in rural and urban areas. In both rural and urban areas, women above 15 years with higher education have a labour force participation rate of about 60 percent. Those with secondary school have a labour force participation rate of 21 percent in urban and 24 percent in rural areas. In urban areas, the employment rate rises by level of education, but in rural areas the lowest employment rate is found among those with intermediate school. The labour force participation curve decreases for those with elementary school, and goes up to 20 percent for those with incomplete elementary school in rural areas (Figure 69).

When looking at the sectors in which women are employed, the same dual picture is found. Women are clustering primarily in four labour sectors: education, manufacturing, public administration, and agriculture. Additionally, urban women with less than elementary school education are involved in wholesale and retail work. Thirty-one percent of women are employed in the agricultural sector, and 24 percent are employed in education.

Over 90 percent of women above 15 years who have elementary school education or less, and who are in the labour force in rural areas, are employed in the agricultural sector. Conversely, the education sector is the most important employer for working rural women with secondary school or higher education.

While the agricultural sector is the most important employer of rural women with low education, manufacturing, wholesale, and retail are the most important sectors for urban women with elementary school or less. Education is the dominant sector for employment of more highly educated women, comprising 55 percent of urban and 63 percent of rural workplaces for women.

Public administration is a major employer for all urban working women, especially for those with intermediate and secondary education (Table 67).

Women and security

Over the last year, the security situation has been defined as the most considerable problem for Iraqi women. Human Rights Watch reports that the failure to provide a secure environment has seriously affected Iraq's vulnerable populations: women, children, and minority groups. There have been reports of increased sexual violence and abuse and increased prevalence for keeping women and girls at home and preventing them from taking part in public life (Abrahams and Stork 2004). Fafo has not specifically focused on the sexual abuse aspect but taken a more general approach asking women respondents only about their own experiences with threats in their neighbourhood, the development of their security situation over the last year, and if they have a weapon to protect the family.

Forty six percent of women do not list any direct threats to their safety in the neighbourhood; criminals are defined as a threat by 40 percent of women, while 12 percent think the coalition forces represent the main threat. Between the different governorates, there are significant differences in how women look upon the security situation and who they define as a threat. While over 85 percent of women in Sulaimaniya, Erbil, Dahouk, and Al-Muthanna report no direct threats, criminals are defined as a threat by 91 percent of women in Missan, 73 percent of women in Thi-Qar, and 65 percent of women in Baghdad. Over 40 percent of women report that criminals represent threats in Wasit and Kerbala. The coalition forces are defined as the most important threat by more than half of the women in Al-Anbar and Salahuddin.

Forty nine percent of women think the security in their area has worsened compared to one year ago, while 20 percent think the security has improved. Comparing the present security situation in the

Table 67: Selected sectors of employment by education and place of residence

		Agriculture	Manufacturing	Public administration	Education	Un-weighted n
Rural	Never attended school	90	2	1		1399
	Incomplete elementary	91	3	1		580
	Elementary	89	2	2		606
	Intermediate/Secondary	38	12	13	15	114
	Higher	4		16	63	157
Urban	Never attended school	12	16	10	7	358
	Incomplete elementary	8	19	9	5	206
	Elementary	5	22	15	5	357
	Intermediate	2	10	30	10	229
	Secondary		5	28	35	518
	Higher		1	19	55	1694
Total		31	6	14	25	6220

area they live in with the situation one year ago, 92 percent of women in Al-Anbar think it has worsened, as do over 70 percent of women in Thi-Qar and Missan (Figure 70). Conversely, 70 percent of women in Sulaimaniya think it has improved, and more than 90 percent of women in Erbil and Dahouk think it has improved or is the same compared to one year ago. Above 60 percent think it has improved or is the same in Basrah, Al-Muthanna and Wasit.

Women in Iraq have a strong belief in weapons and the security a gun can provide. Fifty three percent think a gun helps to protect the family, and 26 percent think a gun helps to protect—but is also dangerous to—the family (Figure 71). The belief in the personal security benefits of weapons is significantly lower in Sulaimaniya than in other governorates: 46 percent think a gun is dangerous in Sulaimaniya, compared to 14 percent on a national level. This can be seen as a result of the significantly lower level of perceived threats in this governorate—98 percent do not see any direct threats, compared to 46 percent on a national level. There is some correlation between the feeling of threats and the belief in weapons, but it is not uniform across all governorates. In Nineveh, for example, 67 percent think a gun can provide security—much above national level—yet the feeling of threats is 20 percent lower than the national level.

Figure 70: Security worsened compared to one year ago

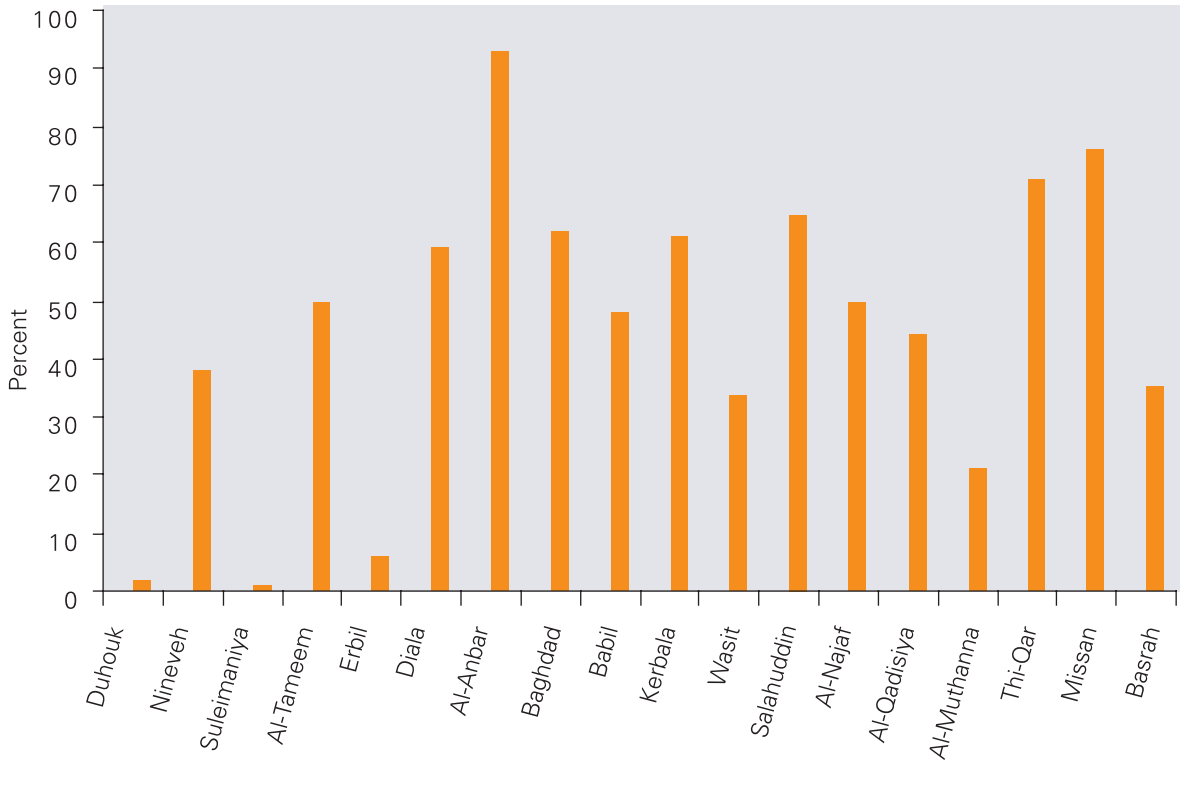
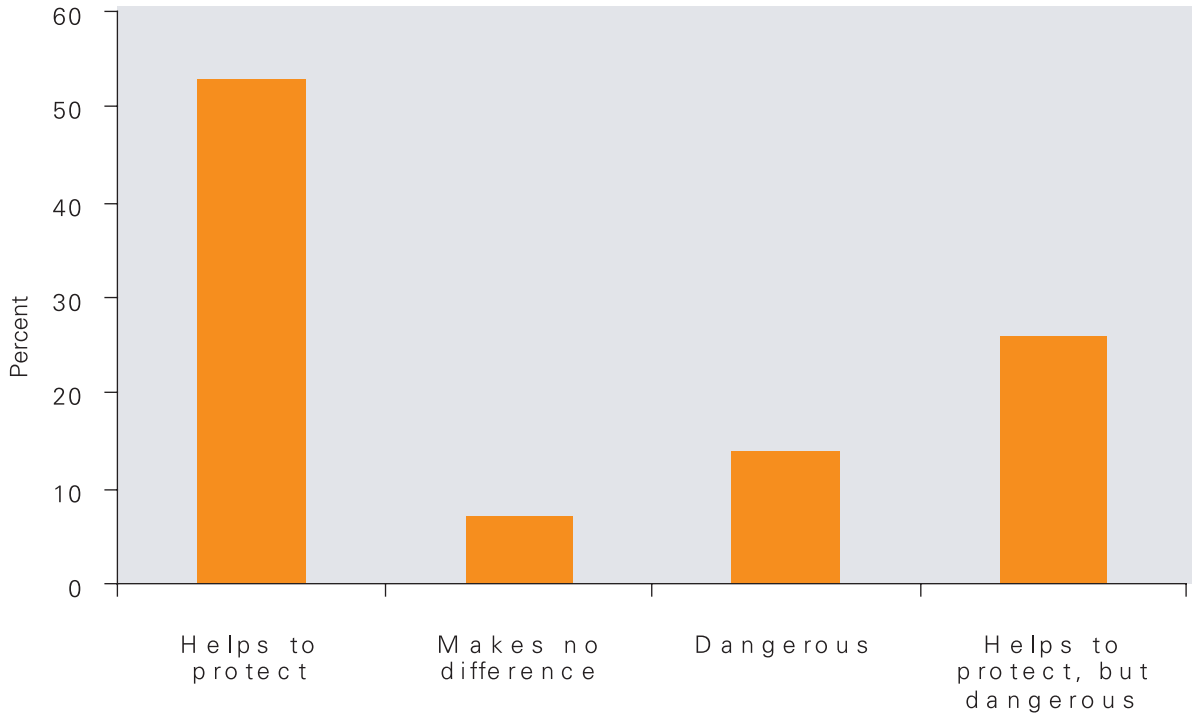


Figure 71: If weapons help to protect or are dangerous



Conclusion

Gender is an important indicator for understanding disparities in the current Iraqi society. It is not uniform, however, as evidenced by the fact that urban women have better education than men in many rural areas. The differences between women in different governorates and regions in Iraq are relevant, but the urban/rural variable seems to be more important in understanding the different prospects for women in education and work in the current Iraqi society.

After years of focus on education, the last 15 years have witnessed a significant drop in the levels of education and literacy among women in Iraq. This drop has, percentage-wise, been more significant among men, but women remain on a generally lower educational level, especially in the rural areas. Paradoxically, the level of education between young girls and boys is more equal today than it was when the general level of education was significantly higher, in the 1970s and 1980s.

Looking at governorates and regions in Iraq where women score poorly on several indicators, the northern areas stand out, particularly on education. However, this region has made significant steps forward during recent years, and has a high current enrolment rate for girls. For example, in Dahouk low scores on literacy among young women, employment of women, and number of women without education are found. However, the current enrolment in elementary education is seven percent above the national average.

Conversely, Salahuddin and Al-Qadisiya have high female employment levels, but literacy among young women and the current enrolment rate are significantly lower than the national level. Al-Muthanna has significantly lower scores on employment, enrolment, and literacy than in other governorates in Iraq. Today, the central region has the lowest enrolment rate in the primary and intermediate levels of education, and also has the highest score for those who are not in favour of education for women.

Focusing on the education of women will be a first step towards renewed economic development in Iraq. In many neighbouring countries there has been a focus on the education of women during recent years, but this has not been sufficiently exploited to improve the national economy, because even highly educated women are taken out of the labour force when they marry or give birth. Just as important as education, raising the level of employment among women, which today is at approximately half the Middle East/ Norther Africa level, will improve the Iraqi economy.

8. The Labour Market

Summary

The labour market is a central arena for determining each household's welfare. The Iraqi labour market has similar characteristics to the other labour markets in the region, with relatively high labour force participation rates among adult men and relatively low participation among women and young men. The labour force participation rate of women with higher education is higher than for other women, and overall there appears to be two main determinants of women's labour force participation: the level of human capital (skills, education, etc); and economic need, i.e. participation in the labour market because household income from other sources is limited. For young men, participation in the labour market appears closely linked with their position in the household: those that are heads of household are twice as likely to be economically active as those that are not.

The aggregate outcome is a labour force of 6.7 million persons, consisting of 5.6 million men and 1.1 million women. While the labour force participation rate appears to be declining over time, there is no evidence of a dramatic rupture in terms of participation caused by the 2003 invasion.

The Iraqi government plays a central role in the labour market: central and local government together with government enterprises employ 29 percent of the workforce, and wages are higher in the public sector than in the private, particularly in the education sector. Working in the public sector is therefore attractive, and 58 percent of active workers with secondary or higher education are in the public sector.

The private sector, which is dominated by trade, agriculture, and construction, has lower wages and employs most of the unskilled workers. The private sector includes a large number of self-employed workers or unpaid workers on family farms or in family businesses—men tend to classify themselves as self-employed, while women classify themselves as unpaid workers.

Women tend to work either in agriculture (particularly those that have only elementary education) or in education (particularly those that have secondary or higher education), which results in a much higher median wage for women than for men. When controlling for industry, women appear to have a slightly lower median wage than men.

There is widespread unemployment in Iraq, in particular among young men. A large number of workers are discouraged and have given up looking for work, believing there is none to be found—a phenomenon that must be factored in when considering the unemployment level. In total, 1,359,000 Iraqis are either unemployed or discouraged workers; this yields an unemployment rate of 18.4 percent when the discouraged workers are included, and a core unemployment rate of 10.5 percent (excluding discouraged workers). The unemployment rate (including discouraged workers) among young people is 33.4 percent, and reaches an astonishing 37.2 percent among young men with secondary or higher education.

The majority of the unemployed are new entrants to the labour market, and there are indications that the majority of people employed before the war have been able to keep their jobs—with the significant exception, of course, of those in the army before and during the war. Of these people, close to one-third are either unemployed or inactive, and a third of those working are self-employed.

The ILO framework

ILCS uses the standard framework of the International Labour Organization (ILO) for analyzing the Iraqi labour market (Hussmanns 1990). The population is divided into four mutually exclusive categories: employed, unemployed, economically inactive, and below working-age.

Below working-age are all persons younger than 15 years at the time of the survey. The ILO does not give strict guidelines on age limits, but notes that the main considerations are "(a) the extent and intensity of participation in economic activities by young people; and (b) the feasibility and cost of measuring such participation with acceptable accuracy (Hussmanns 1990)." While ILCS has collected data on the economic activities of children down to the age of 6, 15 has been selected due to the very low proportion of people under 15 who are economically active. It should be noted that the Iraqi censuses have used 10 years as the age limit, which means that ILCS data are not directly comparable to census data, and when presenting comparisons with census data, a ten year limit will be applied.

The working-age population is classified as employed, unemployed, or outside the labour force based on the respondent's activities during the last seven days before the interview (the so-called "reference period"). A person who either worked for at least one hour during the reference period, or was temporary absent from work (due to illness, holidays, or maternity leave), is classified as employed. A person who did not work at least one hour during the reference period, was not temporary absent from work, and was actively seeking work, is classified as unemployed. The sum of the employed and unemployed individuals makes up the economically active population, or the labour force.

The individuals that cannot be classified as either employed or unemployed (i.e. those individuals that did not work and did not actively seek work) are classified as economically inactive, or outside the labour force. Being classified as economically inactive does not mean that a person is idle, but that this person's activities do not involve the sale of labour, or the production of goods and services for sale. For example, a large part of those classified as "economically active" are women, many of whom take care of activities such as child rearing and domestic work.

Based on the classification above, two important indicators are calculated. The most well known is the unemployment rate, which is defined as the number of unemployed persons divided by the number of economically active persons. The second indicator is the labour force participation rate, which is defined as the economically active population divided by the working-age population. The labour force participation rate represents the proportion of the population that wants to work, while the unemployment rate represents the proportion of those wanting to work that cannot find work.

An important caveat is in order here. The unemployment rate does not necessarily increase proportionally to the number of jobs disappearing or being created, due to two mechanisms. First, when many individuals are looking for jobs at the same time, some of these will decide that they are unlikely to find a job, and stop looking. In the ILO framework, these individuals are no longer unemployed, but economically inactive—often referred to as "discouraged workers." The second mechanism is the acceptance of work that would normally be refused or not regarded as proper work. In other words, people in dire need can almost always find work if they accept low enough wages—for instance, by engaging in very low-productive self-employment such as subsistence farming or street vending. In the ILO framework, these individuals are then classified as employed, even if they themselves do not perceive their own situation as such. Due to these two mechanisms, the unemployment rate is rarely above 20 percent anywhere in the world. Unemployment rates above 15 percent are often interpreted by economists as indicative of an inefficient labour market where "a large number of individuals who would be willing to work (or to work more) at the prevailing wage rate are unable to do so" (Rama 1998).

The size of the labour force

In Iraq, a total population of 27.1 million, 16.4 million (60.6 percent) are of working-age, while 10.7 million (39.4 percent) are below working-age. Of the working-age population, 6.7 million are in the labour force (economically active) and 9.7 million are inactive, yielding a labour force participation rate of 40.9 percent. Of the economically active population, 6.0 million are employed, while 710,000 are unemployed.

The first observation to be made is that the labour force participation rate is comparable to that in neighbouring countries.

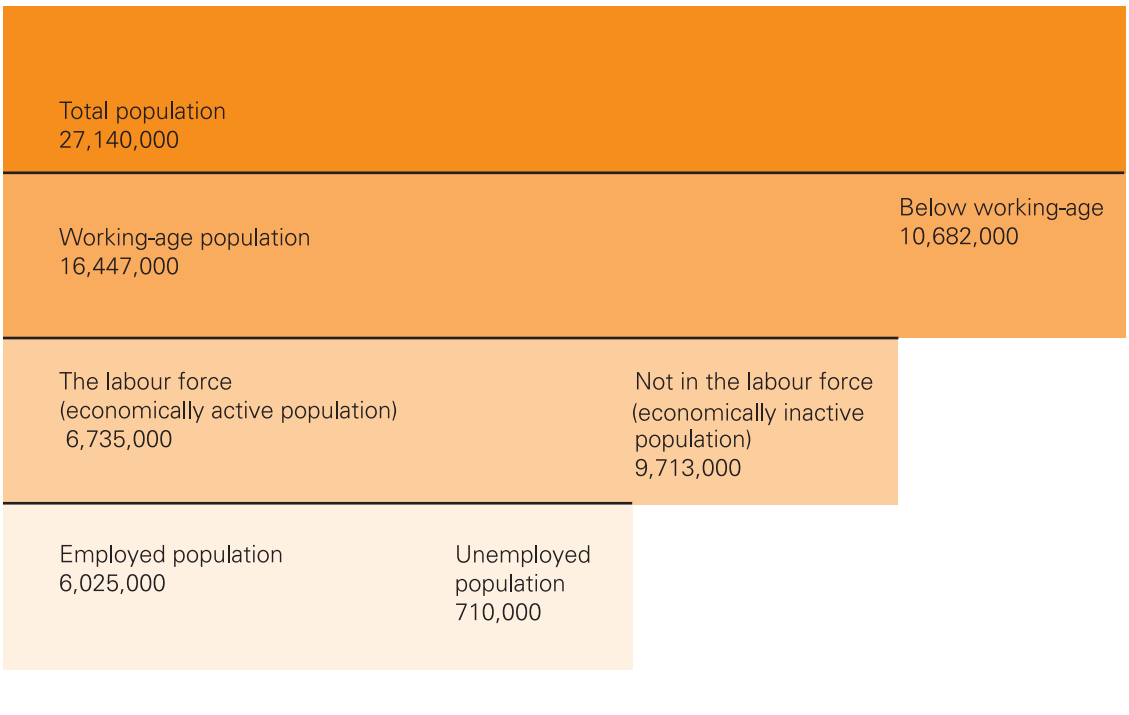
Table 68 gives the size of the working-age population, the economically active population, and the activity rate for the countries bordering on Iraq; it illustrates that Iraq, Iran, and Jordan have comparable participation rates (between 37 and 43 percent), while Syria and Kuwait have somewhat higher activity levels (53 and 68 percent). Most of the large Arab states are in the range from 40 to 50 percent (UNDP 2002), while the OECD average is 70 percent (OECD 2004). Labour force participation rates are lower in Arab countries primarily because most women are not economically active[12]; in this respect, Iraq is typical of the labour markets in the Middle East.

There is very little data available on the evolution of the Iraqi labour market, and the most recent before the war is from the 1997 census (Foote et al. 2004, see also Sletten and Louay (2004) for a survey of Iraqi labour market statistics). Census takers asked Iraqis about their "labour market activity" as of the census day (October 16, 1997), and generated the categories of employed and unemployed from this information. Due to the short reference period, the census will find more individuals unemployed than ILCS (as individuals that worked yesterday but not today are counted as employed by ILCS and unemployed by the census). However, the labour force participation rate should not be much different between the two instruments.

In order to compare labour force participation over time, ILCS labour force statistics were recalculated using an age limit of 10 years to define the working-age population. This results in a higher working-age population and a lower participation rate, as the participation rate is low for persons aged 10-14.

The second observation is that the labour force participation found by ILCS is comparable to historical data from Iraq. It has declined from 41 percent in 1977 to 37 percent in 1997 and 35 percent in 2004 (Table 69). However, there has simultaneously been an increase in the working-age population, both in relative terms (from 67 percent of the population in 1977 to 73 percent in 2004), and in absolute terms (from 7.64 million in 1977 to 19.80 million in 1997).

Figure 72: The Iraqi labour fource within the ILO framework



12.It is important not to ascribe this difference only to women's participation rates, however, as evidenced by the finding that the labour force participation rate for Iraqi men aged 15-64 is 72 per cent, while the OECD average for the same group is 80 per cent.

In short, the labour force participation rate has been relatively stable over time and is comparable to what is observed in neighbouring countries. It has decreased over the past two decades, but during the same period, the working-age population has increased dramatically—cumulatively leading to a doubling of the working-age population and also employment since 1977.

Geographical differences

There are only minor regional variations in the labour force participation rate across Iraq, from a low 40.0 percent in the Baghdad region to a high 41.5 percent in the north (Table 70). At the governorate level, variations are higher, from 34 percent in Thi-Qar to 47 percent in Salahuddin. (ILCS dataset.) Although variations between the regions are minor, the labour force participation rate varies more significantly between urban (39.8 percent) and rural areas (44.7 percent).

The observed variation could result both from differences in population characteristics between the regions—such as age composition and education levels—or from variations in labour productivity (the incentive to work is higher if income generated from work will be higher) due to differences in infrastructure, access to markets, climate, etc. While the urban participation rate is relatively uniform across the country, the rural participation rate varies from 41.6 in the North region to 49.9 in the Baghdad region (ILCS dataset).

Gender and age pattern of labour force participation

Labour force participation rates are much lower for women than for men in Iraq. While there are 5.6 million men in the labour force, there are only 1.1 million women, giving labour force participation rates of 69 and 13 percent, respectively (Table 71). This is quite similar to what one finds in neighbouring countries,

Table 68: Labour force participation in Iraq and neighbouring countries[13]

COUNTRY	YEAR	AGE GROUP	WORKING-AGE POPULATION	ACTIVE POPULATION	ACTIVITY RATE
Iran	1996	Total (15+)	36,298,000	15,651,000	43.1 %
Jordan	2003	Total (15+)	3,409,000	1,275,000	37.4 %
Kuwait	1995	Total (15+)	1,100,000	748,000	68.0 %
Syria	2002	Total (15+)	10,249,000	5 459,000	53.3 %
Iraq	2004	Total (15+)	9,586,000	3 970,000	41.4 %

Table 69: Evolution since 1977

	Census 1977		Census 1987		Census 1997		ILCS (2004)	
	(Millions)	(Percent)	(Millions)	(Percent)	(Millions)	(Percent)	(Millions)	(Percent)
Population	12.00	100	16.34	100	19.18	100	27.14	100
Working-age population (Aged 10 and above)	7.64	63.6	10.90	66.7	13.11	68.4	19.80	73.0
Economically active population	3.13	26.0	3.92	24.0	4.81	25.1	6.91	25.4
Participation rate		40.9		36.0		36.7		34.9

Table 70: Labour force participation rate, by region

		Labour force participation rate	Uwn	Economically active population
Total		**40.9**	**85,343**	**16,447,473**
Main regions	South	40.8	39,131	5,713,215
	Baghdad	40.0	11,968	4,207,986
	Centre	41.8	22,535	4,240,413
	North	41.5	11,709	2,285,860
Urban - rural	Rural	44.7	27,589	3,949,367
	Urban	39.8	57,754	12,498,106

13.Sources: Iran, Kuwait and Syria data from the ILO LABOURSTA database, http://labboursta.ilo.org/; Jordan data from Jordan's Department of Statistics (DOS), http://www.dos.gov.jo; Iraq data from ILCS

Table 71: Urban and rural participation rates, by gender

	Labour force participation rate			Economically active population		
	Rural	Urban	All	Rural	Urban	All
Male	72	68	69	1,396,192	4,216,977	5,613,169
Female	18	12	13	368,055	753,671	1,121,726
All	45	40	41	1,764,247	4,970,648	6,734,894

and demonstrates the overriding impact of gender on decisions of labour market activity in Iraq. The World Values Survey finds that public opinion in the Arab region ranks last of nine world regions in terms of public support for gender equality in employment (UNDP 2003c). Iraq is generally seen as one of the more progressive Middle Eastern countries regarding the status of women, but the data do not support this point of view.

Interestingly, female labour force participation rates are higher in rural areas (Table 71), which one would expect to be more conservative with respect to women's role. Two factors could explain this: first, lower incomes in rural areas may push more women to work, as households need to make ends meet; and second, it may be easier for women in rural areas to work at home doing various types of agricultural production, and this may be more socially acceptable.

For both men and women, labour force participation is highest in the age groups between 25 and 49 years, where it averages above 50 percent. It declines rapidly after 50 years, and is down to 29 percent in the age group 60-64 years (Table 72). This average masks enormous differences between men and women: the labour force participation rate for men is above 90 percent for the age groups between 30 and 44 years, versus around 20 percent for women of same age.

The majority of Iraqi men do not enter the labour force until the age of 20; the participation rate in the age group 15-19 is only 38 percent. The participation rate is also lower among young women: only 6 percent of those aged 15-19 are economically active (Table 72).

The participation rate for young men is much higher among those with low educational attainment—for men aged 15-19, 61 percent of those with only incomplete elementary education are economically active, compared to only 12 percent of those with intermediate levels of education or more (Table 73). Some of these men are outside of the labour force because they are students, but this is not the case for all. On the other hand, those with higher educational attainments are active longer: in the age group 60-64, 55 percent of those with secondary education or higher are active, against 45 percent of those with less than elementary education. It seems reasonable that the wages obtained by those with low education decline more rapidly with age, as they are more likely to be engaged in manual labour. This would in turn explain why these men exit the labour force more rapidly after 50.

For women, education increases the participation rate; among women with secondary or higher education, 42 percent are active, compared to less than 10 percent for all other groups (Table 74). Interestingly, women without any education have higher participation rates than those with elementary education—10 against 7 percent. This may again be caused by lower household incomes in this group, pushing more women to work in order to make ends meet.

Table 72: Labour force participation, by age and gender

	Labour force participation rate			Economically active population		
	Male	Female	All	Male	Female	All
15-19	36	6	21	545,284	87,679	632,963
20-24	65	11	38	914,709	150,136	1,064,844
25-29	85	18	53	996,295	203,140	1,199,435
30-34	92	20	55	878,302	193,143	1,071,445
35-39	93	20	56	681,721	154,671	836,393
40-44	92	20	53	461,247	119,027	580,274
45-49	86	18	51	409,156	90,268	499,424
50-54	75	15	46	307,331	55,774	363,104
55-59	68	10	34	203,010	42,229	245,239
60-64	48	6	29	123,693	14,920	138,613
65+	23	2	12	92,421	10,740	103,161
All	69	13	41	5,613,169	1,121,726	6,734,894

As with men, women with secondary or higher education are also economically active longer: the decline in participation rates begins at age 40 for women with less education, while it begins at 55 for those with secondary or higher education. As stated earlier, the decline in participation rates for men with little education could be because of lower expected wages and/or problems with performing manual tasks when older. For women the decline starts earlier, which could indicate that they are being provided for, either by children or by extended families.

Table 73: Labour force participation by education, men

	Never attended school	Less than elementary	Elementary	Intermediate	Secondary or higher	All
15-19	59	61	36	13	12	36
20-24	69	83	83	50	38	65
25-29	75	90	89	85	79	85
30-34	79	92	93	91	93	92
35-39	88	92	92	94	94	93
40-44	88	92	90	94	93	92
45-49	81	88	86	79	91	86
50-54	71	77	73	79	80	75
55-59	67	72	67	71	67	68
60-64	45	42	49	54	55	48
65+	21	25	29	26	29	23
All	56	77	72	57	75	69

Figure 73: Education and labour force participation for men and women

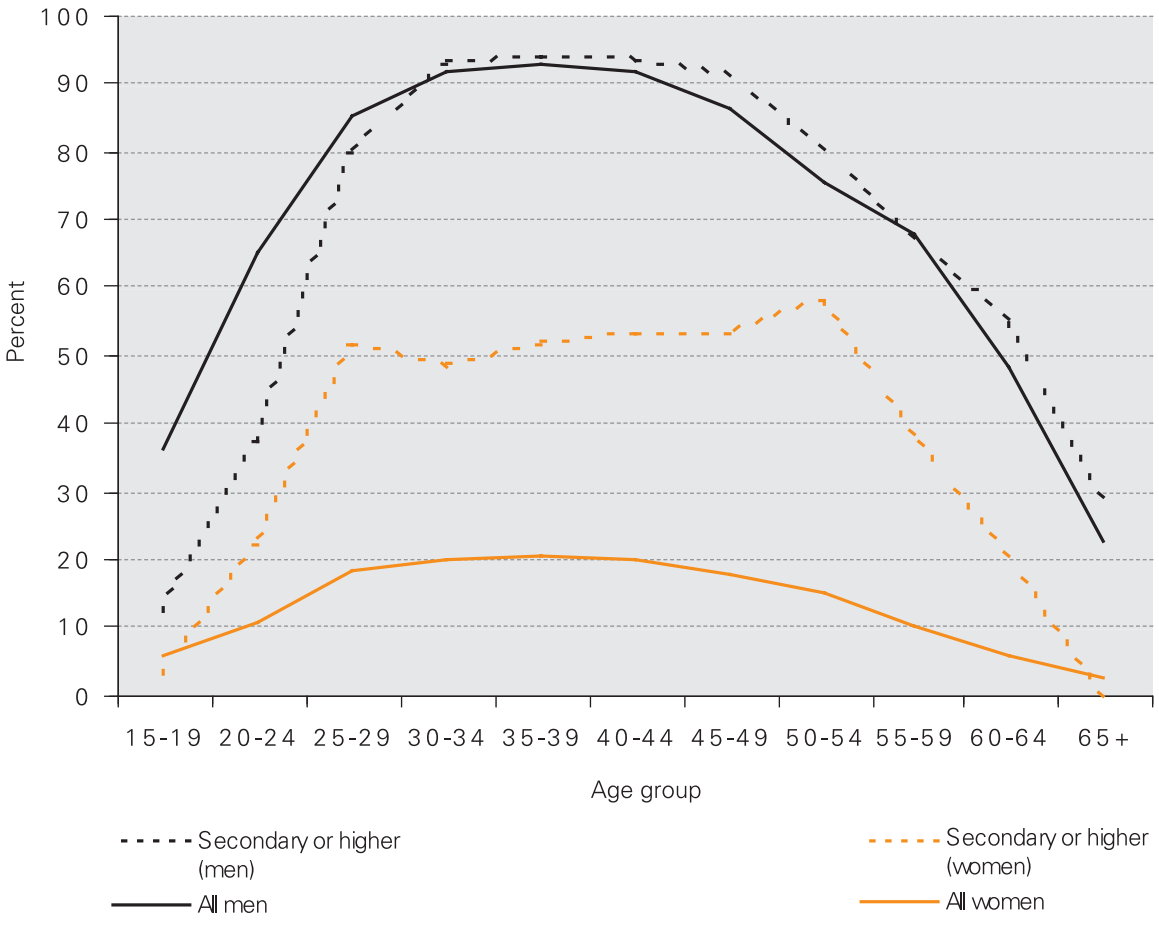


Figure 73 sums up the situation: Labour force participation rates are much higher for men than for women; both men and women enter the labour market after they have turned 20, but men exit later than women; and higher education leads to higher labour force participation rates, but the effect is much stronger for women than for men.

Household and employment

An individual's decision on labour market participation depends not only on personal preferences, but also on the resources and preferences of the rest of the household. As Table 75 shows, the share of household members economically active varies from none to two-thirds. While some of the inactive are unable to work (because of age, illness, or other reasons), others are inactive because of considerations made at the household level. As noted above, the working-age population that is not in the labour force consists of three groups: young persons (below 25), women of all ages, and persons older than 60. This section will analyze how their labour participation is influenced by household factors.

Household income

An increase (decrease) in income can have two contradictory effects on the labour supplied by a household. First, the income effect: the higher the income, the lower the labour supply, as there is less need to work. Secondly, the substitution effect: the higher the income, the higher the labour supply, as not working becomes more expensive in terms of income foregone. These two effects are likely to be of different importance at different levels of income (El-Hamidi 2003).

Figure 74 shows the labour force participation rate of women living in households in the different income deciles (based on income the two weeks prior to the interview). In both urban and rural areas, the participation rate of women living in the poorest households (decile one and two) is higher than for those in higher deciles. In other words, for the poorest households, the income effect seems to dominate, while the substitution effect dominates from the second or third decile in urban areas and from the seventh decile in rural areas.

However, the poorest households are also different in other respects: the lowest decile has the highest proportion of female-headed households (14 percent against 11 percent in the whole population), and also has a high proportion of old heads of household (older than 55 years), although the proportion of old heads of household is also high in the upper deciles. It would therefore be wrong to conclude that when households are poor enough, women are forced to participate in the labour market; it may indeed be that the poorest households consist of old widows, who have to work and are poor because the income they can generate is very low.

Table 74: Labour force participation by education, women

	Never attended school	Less than elementary	Elementary	Intermediate	Secondary or higher	All
15-19	14	8	5	1	3	6
20-24	10	10	7	6	22	11
25-29	12	10	9	11	51	18
30-34	13	11	10	10	48	20
35-39	13	10	9	12	52	20
40-44	13	5	11	13	53	20
45-49	13	5	8	16	53	18
50-54	11	6	7	10	58	15
55-59	8	4	3	13	38	10
60-64	5	6	4	0	21	6
65+	2	0	5	0	0	2
All	10	9	7	7	42	13

Table 75: Share of household members in the labour force

Members in labour force	Percentage of households	Number of households
Less than one third	76,4	3,247,301
Between one third and two thirds	21,1	896,062
More than two thirds	2,6	109,176
Total	100,0	4,252,540

The second interesting question is why women in households in the upper deciles (8-10) have higher participation rates. One possible explanation is of course that it is the increased labour supply that generates the high income, and not the other way around. Another explanation would be that members of these households have more education and therefore a less traditionalist view of gender roles.

Household position

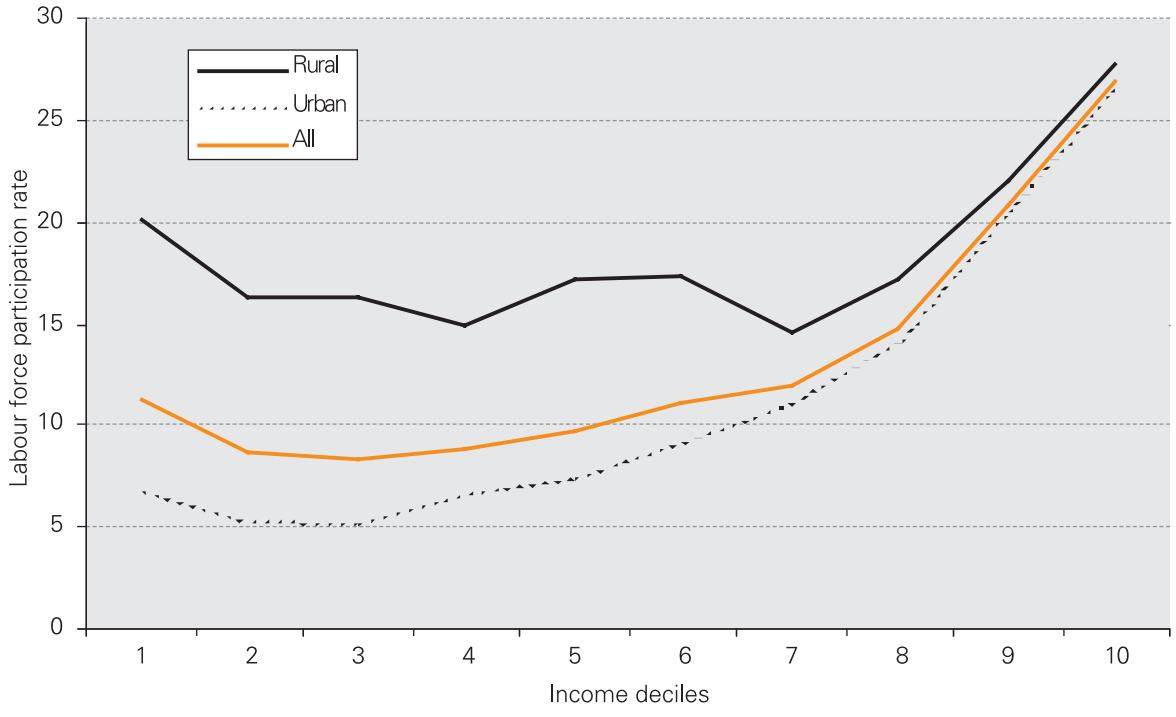
As indicated above, the composition of the household, and one's relative position in it, also influence labour force participation decisions. The first and most obvious observation is that being head of household increases the likelihood of being economically active. The labour force participation rate of male heads of household is 80 percent, compared to 69 percent among all men. For female heads, it is 18 percent, against 13 percent for all women.

In the group of young men, where the labour force participation rate is relatively low, heads of household are much more economically active than those that live with their parents, with older siblings (Table 76). The effect here probably runs both ways: when a young man is head of household, he needs to work in order to provide for his family, and social norms push in this direction. But at the same time, social norms in the Middle East require that a man has an income before he marries—in other words, it is much more difficult for young men to become heads of households when they are not employed. Note that not only is the participation rate higher for the household heads, the unemployment rate is also lower than for other men in the same age group. This may partly be because the household heads had to have a job in order to get married (and have not lost it since then), but it may also indicate that unemployment is not an option for this group—both need and social norms require these men to be breadwinners.

Table 76: Household position and labour market activity for young men (15-24)

	Household head	Child, grandchild, son in law	Sibling/ Sibling of spouse	Other	All
Employed	86	38	45	38	41
Unemployed	4	10	11	11	9
Not in the labour force	9	52	44	51	50
Below 15 years of age	0	0	0	0	0
All	100	100	100	100	100

Figure 74: Female labour force participation by income deciles



For women, the opposite effect is in play: marriage means exiting the labour market. Labour force participation rate for married women in the age group 15-24 is close to half of what it is for those living with siblings. It seems reasonable to assume that while the young married men are breadwinners, the young married women are mothers.

Reasons for not participating

The part of the working-age population that is outside of the labour force is so for different reasons, varying with age and gender. The largest group not in the labour force is women (74 percent of the inactive population), and their reason is predominantly domestic work: 79 percent of inactive women cite this as the main reason. There are clear life-cycle effects: domestic work is the main reason for 91 percent of women aged 25-54, 63 percent of young women (aged 15-24) and 76 percent of old women (above 55 years old). For young women, studies is the other important reason (25 percent of the inactive young women), while for the old women, it is health reasons (14 percent of the inactive old women) (Table 78).

The second large group not in the labour force is young men, constituting 15 percent of the inactive population. Their main reason is studies (68 percent), but a sizeable group (20 percent of inactive young men) claims that there are no jobs available, and is thus classified as discouraged workers. (See more on this topic in the section Unemployment and underemployment below.) Not many men between 25 and 54 are outside the labour force; of those that are, the majority are either discouraged (33 percent) or have health problems (23 percent), and the rest are retired (18 percent) or are still studying (11 percent). After the age of 55, more men leave the labour force, either to retire (45 percent) or for health reasons (39 percent) (Table 78).

ILCS also collected data on whether respondents have been unable to reach their place of work due to unexploded ordinance or have been out of work because the workplace has been closed due to work damages. Virtually no respondents experienced these particular problems.

The implication is that only a minor fraction (around five percent) of the inactive population consists of discouraged workers. This is of course important for later analyses of hidden unemployment, but it also means that there is not a large reserve of workers that would be willing to enter the labour market if more jobs became available. In order to increase the labour force participation rate, it is necessary for Iraqi women to take up work outside of the home—but if this were to happen, overall labour supply would increase quite substantially.

Table 77: Household position and labour market activity for young women (15-24)

	Spouse	Child, grandchild, daughter in law	Sibling/ Sibling of spouse	Other	All
Employed	6	6	10	9	7
Unemployed	1	2	1	0	2
Not in the labour force	93	92	89	91	92
Below 15 years of age	0	0	0	0	0
All	100	100	100	100	100

Table 78: Main reason for not being in the labour force

	Male				Female			
	15-24	25-54	55+	All	15-24	25-54	55+	All
Contracted, not started work yet	1	2	2	1	0	0	0	0
No jobs available	20	35	4	19	3	2	1	2
Student	68	11	0	42	26	1	0	10
Housewife/Domestic work	3	6	1	3	63	91	77	79
Had independent means	1	2	0	1	0	0	0	0
Disabled or sick	4	22	37	15	1	2	13	3
Retired/pensioner	0	18	47	14	0	1	5	1
Family/social relations	1	1	0	1	5	1	0	3
Other reasons	2	4	9	4	1	1	4	1
All	100	100	100	100	100	100	100	100
Share of inactive population	15%	5%	6%	26%	28%	36%	11%	74%

Industry and occupational structure

Industry structure

Table 79 presents the industry composition of employment, using the top-level industries of the International Standard Industrial Classification[14]. The three most important industries by employment are, in order of importance, trade and repairs, agriculture, and public administration; 55 percent of all employed Iraqis work in one of these industries. Construction is also an important employer, accounting for 10 percent of total employment. Only seven percent work is in manufacturing, and less than one percent work in mining and quarrying, which includes the petroleum industry.

As 83 percent of the labour force consists of men, the overall distribution by industry is similar to the distribution by industry of men. For women, conversely, the three most important industries are agriculture, education, and public administration, accounting for 79 percent of all female employment. In other words, working women are employed either in the public sector (administration, education, health and social services) or work in agriculture. Even in absolute numbers, there are more women than men working in the education industry—292,000 to 197,000. In the agricultural sector, women make up around one-third of the labour force.

Compared to employment the distribution in December 2002, the industry structure of employment has changed little. Manufacturing and mining had limited importance in December 2002, as they had at the time of the survey. The only change is the relative decline in importance of public administration and defense, which is, of course, caused by the disbandment of the Iraqi army.

There is a clear relationship between education and industry (Table 80). The public sector employs 58 percent of all active persons with secondary education or higher, while it only employs 16 percent of those that never attended school. On the other hand, 46 percent of those that never attended school work in agriculture, compared to 19 percent of those that have completed elementary school. The relationship is much stronger among economically active women: 66 percent of those that never attended school work in agriculture, while 78 percent of those with secondary or higher education work in the public sector (ILCS dataset).

Furthermore, different industries employ persons of different ages. Agriculture is important for young persons, accounting for 27 percent of employment

Table 79: Employment by industry (main job)

	May 2004			Dec 2002	May 2004		
	Male	Female	All	All	Male	Female	All
Agriculture, hunting and forestry	13	33	17	16	678,052	318,589	996,641
Fishing	1	0	0	0	25,302	230	25,532
Mining and quarrying	0	0	0	0	15,525	2,587	18,112
Manufacturing	7	7	7	7	354,652	63,701	418,353
Electricity, gas and water supply	0	0	0	0	13,845	588	14,433
Construction	12	1	10	10	614,861	5,032	619,893
Wholesale and retail trade; repairs	23	5	20	20	1,179,703	49,736	1,229,439
Hotels and restaurants	1	0	1	1	74,581	2,967	77,547
Transport, storage and communications	12	1	10	9	592,240	10,796	603,036
Financial intermediation	0	1	0	0	15,572	9,037	24,609
Real estate, renting and business activities	1	1	1	1	56,807	5,545	62,352
Public administration and defense	18	16	18	20	912,269	159,528	1,071,797
Education	4	30	8	8	196,747	291,944	488,692
Health and social work	2	4	2	2	89,314	44,009	133,323
Community, social and personal services	4	1	3	3	188,676	9,341	198,017
Private households with employees	0	0	0	0	23,924	3,959	27,883
Extra-territorial organizations and bodies	0	0	0	0	4,850	717	5,567
All	100	100	100	100	5,036,919	978,306	6,015,225

14. International Standard Industrial Classification of All Economic Activities, Third Revision, (ISIC, Rev.3)

Table 80: Education by industry of employment

	Never attended school	Less than elementary	Elementary	Intermediate	Secondary or higher	All
Agriculture	46	22	19	9	3	17
Manufacturing and construction	14	25	23	21	10	18
Trade and services	24	35	37	42	29	33
Public administration, education, and health	16	18	20	28	58	32
All	100	100	100	100	100	100
Uwn	4920	4848	9260	3534	8564	31126

Table 81: Age by industry of employment

	15-24	25-54	55-64	65+	All
Agriculture	27	13	19	32	17
Manufacturing and construction	25	16	10	10	18
Trade and services	30	34	30	39	33
Public administration, education, and health	18	36	41	19	32
All	100	100	100	100	100
Uwn	7524	21393	1823	512	31252

Table 82: Employment by occupation, main job

	May 2004			Dec 2002	May 2004		
	Male	Female	All	All	Male	Female	All
Armed forces	2	1	1	5	82,427	5,578	88,005
Legislators, senior officials and managers	1	1	1	1	43,004	7,248	50,252
Professionals	9	39	14	13	441,852	378,383	820,235
Technicians and associate professionals	3	3	3	3	151,948	31,331	183,279
Clerks	3	8	4	4	153,398	77,333	230,731
Service workers and shop and market sales workers	24	6	21	19	1,225,393	54,546	1,279,939
Skilled agricultural and fishery workers	14	32	17	16	693,854	313,018	1,006,872
Craft and related trades workers	18	7	16	16	916,139	64,899	981,038
Plant and machine operators and assemblers	14	1	12	11	698,194	7,955	706,149
Elementary occupations	13	4	11	11	652,902	40,103	693,005
All	100	100	100	100	5,059,111	980,393	6,039,504

in the age group 15-24 (Table 81). This is probably a reflection of the choice between education and work: those that do not enter higher education enter the less skill-intensive industries, namely agriculture and construction. Again, the tendency is even more marked among economically active women, where 63 percent of those aged 15-24 work in agriculture (ILCS dataset). Meanwhile, the high share of agriculture in employment among old persons probably reflects that retirement is more difficult in this sector than in others. (Table 81). Nevertheless, the overall activity rate among old persons (aged 65 and above) is low, and this group only makes up three percent of the workforce in agriculture (ILCS dataset).

Occupational structure

The breakdown of the labour force by occupation[15] shows a pattern that mirrors the industry structure—the largest category is service workers and sales workers (21 percent of the work force), followed by agricultural workers[16] and craft workers (16 percent each). The expected differences between men and women are quite visible. The two dominant female occupations are professionals (39 percent) and agricultural workers (32 percent); conversely, the male workforce is more evenly spread out over five lower-skill occupational categories: sales workers, agricultural workers, craft workers, machine operators, and elementary occupations (82 percent).

There are only minor changes in the occupational structure since December 2002, with the exception of the armed forces: in December 2002, five percent of the workforce were in the armed forces, a proportion that is much reduced today.

To better interpret the occupations, it is useful to cross them with the grouped industries of employment. Unsurprisingly, the agricultural sector employs 98 percent of agricultural workers. Manufacturing and construction industries employ only 6 percent of the plant and machine operators while trade and services employ 80 percent of them. Similarly, only 4 percent of technicians and clerks work in manufacturing and construction. This probably indicates that the manufacturing and construction industries use relatively little machinery, and are dominated by small-scale traditional production and construction. A further indication of the weakness of the private sector is that 89 percent of managers and professionals work in public administration, education, and health services (Table 83).

The level of education has the expected effects on occupation: 45 percent of those that never attended school are agricultural workers, while 41 percent of those with secondary or higher education are managers and professionals (Table 84). It is striking that only 22 percent of those with less than elementary education (i.e. incomplete elementary education) are agricultural workers, compared to the 45 percent among those that never attended school. However,

Table 83: Occupation by industry

	Agriculture	Manufacturing and construction	Trade and services	Public administration, education, and health	All
Armed forces	5	1	15	78	100
Managers and professionals	0	6	6	89	100
Technicians and clerks	0	4	17	78	100
Service workers and sales workers	0	2	71	26	100
Skilled agricultural workers	98	0	1	1	100
Craft workers	0	66	25	9	100
Plant and machine operators	0	6	80	14	100
Elementary occupations	3	43	21	33	100

Table 84: Education by occupation

	Never attended school	Less than elementary	Elementary	Intermediate	Secondary or higher	All
Armed forces	2	1	2	2	1	1
Managers and professionals	1	1	3	5	41	14
Technicians and clerks	2	1	4	9	14	7
Service workers and sales workers	17	21	24	27	18	21
Skilled agricultural workers	45	22	19	9	3	17
Craft workers	11	22	20	20	11	16
Plant and machine operators	8	12	15	16	8	12
Elementary occupations	15	20	14	12	4	11
All	100	100	100	100	100	100
Uwn	4,939	4,876	9,294	3,553	8,592	31,254

15. ILCS uses the International Standard Classification of Occupations, 1988 (ISCO-88).

16. The name of the ISCO-88 category is "Skilled agricultural and fishery workers," but in Iraq 35 percent have never attended school, and only 13 percent have completed education above elementary school.

the effect of education is likely to interact with other factors—such as age, occupation and education of parents, and place of living—so that the dominance of agricultural work among those without any education is not only attributable to the lack of education. Note that for women, the effect of elementary education is much smaller: 68 percent of those that never attended school are agricultural workers, compared to 66 percent of those with incomplete elementary education and 58 percent of those with completed elementary.

Type of employer and type of employment

Type of employer

Table 85 shows the distribution of the workforce among different employers. More than half of all economically active men work for private companies, while 25 percent work for the government, and 9 percent work in family businesses. Among the women, more than half work for the government, 27 percent work in family businesses, and only 16 percent in private companies. This may indicate that private companies are less willing to employ women, but is probably also linked to the types of work that are socially acceptable for women.

Compared to December 2002, the private sector is increasing in importance, while the Iraqi army is decreasing[17]. This observation on private sector growth should be treated with caution; it may be influenced by the differences in measuring employment from the previous instrument.

Table 86 shows that there is a clear difference in type of employer between those with secondary or higher education and the rest of the labour force: 58 percent of the former are employed by the government, compared to 25 percent of employed persons having completed the intermediate level. Among women, the effect is much more important: 93 percent of women

Table 85: Employer, main job

	May 2004			Dec 2002	May 2004		
	Male	Female	All	All	Male	Female	All
Local or central government, government companies	25	53	30	29	1,276,851	516,826	1,793,676
Private company	56	16	49	46	2,811,680	161,859	2,973,539
Cooperative or joint sector	3	1	3	3	164,973	12,117	177,090
Iraqi army	1	0	1	3	42,023	807	42,830
Family business	9	27	12	12	475,363	262,232	737,594
NGO	4	1	4	3	208,345	13,517	221,861
Private household	1	1	1	1	43,231	13,513	56,744
Other	1	0	1	2	43,271	1,417	44,688
All	100	100	100	100	5,065,736	982,288	6,048,023

Table 86: Type of employer by education, main job

	Never attended school	Less than elementary	Elementary	Intermediate	Secondary or higher	All
Local or central government, government companies	14	12	18	25	58	30
Private company	51	58	57	57	33	49
Cooperative or joint sector	3	3	4	3	2	3
Iraqi army	0	1	1	1	0	1
Family business	27	17	14	8	4	12
NGO	3	5	4	4	2	4
Private household	1	2	1	1	0	1
Other	1	1	1	1	0	1
All	100	100	100	100	100	100
Uwn	4,946	4,878	9,307	3,558	8,601	31,290

17. It is important to note that a person may be employed by the Iraqi army without reporting his profession as armed forces, and vice versa. This holds for December 2002 as well as May 2004, and explains the differences in absolute numbers between

with secondary or higher education are employed by the government. On the other hand, employment in a family business is much more important for women than for men: over half of the employed women with elementary occupation or less work in a family business (ILCS dataset).

Type of employment

Looking at the employment status, we find that while 57 percent of Iraqis are paid employees, self-employment is important for men (30 percent) and unpaid work in a family farm or business is important for women (25 percent) (Table 87). Summing up the two categories, similar proportions of men and women are not part of what could be called the formal labour market: 35 percent of men and 39 percent of women are either self-employed or unpaid workers in a family farm or business (ILCS dataset).

Furthermore, 78 percent of those that are self-employed report that their employer is a private business, while 77 percent of the unpaid family workers say that it is a family business (ILCS dataset).

Table 87: Type of employment, main job

	Male	Female	All	Male	Female	All
A paid employee	56	60	57	2,844,161	586,082	3,430,244
An employer	8	2	7	407,100	14,796	421,896
Self-employed	30	13	27	1,503,332	132,025	1,635,356
Unpaid worker in a family farm or business	6	25	9	288,289	246,460	534,749
Trainee/work without pay	0	0	0	21,793	2,469	24,262
All	100	100	100	5,064,675	981,832	6,046,506

Table 88: Weekly working hours, main job

	25 percentile	Median	75 percentile	Uwn
All	35	42	56	31,643
Male	36	48	56	26,138
Female	24	35	40	5,505
15-24	30	42	56	8,384
25-54	35	42	56	20,958
55-64	34	40	50	1,799
65+	30	40	55	502
Never attended school	30	40	50	5,174
Less than elementary	35	48	56	5,247
Elementary	36	48	56	9,227
Intermediate	36	48	60	3,469
Secondary or higher	35	36	49	8,404

Table 89: Weekly working hours by industry, main job

	25 percentile	Median	75 percentile	Uwn
All	35	42	56	28,035
Agriculture; hunting and forestry; fishing	28	36	50	4,644
Construction; manufacturing; mining; electricity, gas and water supply	36	48	56	5,007
Wholesale and retail trade; repairs; hotels and restaurants	40	49	60	5,877
Transport, storage and communications	36	48	60	2,922
Financial services; real estate, renting, business services	36	48	56	382
Public administration and defense; extra-territorial organization	36	36	48	5,035
Education	24	30	36	2,338
Health and social work	36	36	42	620
Community, social and personal services; households	36	48	60	1,021

This is probably indicative of the roles of men and women outside of the formal labour market, and their experience of control of their work situation.

Working hours

The median hours worked during the week before the interview was 42. There were clear gender differences, with the median for women being 35 hours, versus 48 hours for men. There were also differences by education, with the median for persons with secondary or higher education at 36 hours. Working hours are not much lower among old persons still working, indicating that reducing the working hours is not an alternative to leaving the labour force altogether.

Overall, there are important differences between industries in terms of working hours. Median working hours is shortest in public sector industries (notably in education, but also in health and social work and in public administration) (Table 89). Private-sector industries, such as trade, construction, and manufacturing, have longer hours than the national median.

The gender differences are to a certain extent caused by the differences between industries: median working hours is shortest in education (30 hours), where a large part of the female workforce is employed (Table 89). However, this is not the whole explanation: both in agriculture and education, median working hours among women is shorter than among men (30 versus 35 hours in education, 30 versus 40 hours in agriculture) (ILCS dataset). The shorter working hours among women are probably related to household considerations on labour supply, where women probably do more of the domestic work.

Wages

ILCS collects data on the income from the main job the week before the interview; by dividing by the number of hours worked, an estimate of the hourly wage rate is obtained. Only hourly wages for those that are paid employees are estimated, excluding those that are self-employed, unpaid family workers, and employers. It is a reasonable assumption that on average, the excluded groups earn less per hour worked, as they generally fall outside what could be called the formal sector. Furthermore, 52 percent of paid employees work in the public sector, compared to only 30 percent of the total labour force (ILCS dataset). The wage rates reported here should therefore be seen as the wages obtained in the formal sector, half of which consists of the public sector.

For this part of the labour force, the median hourly wage is 833 dinars, but there are important differences: the hourly wage at the 25th percentile is only 463 dinars, versus 1,600 dinars at the 75th percentile. The median hourly wage of women is almost twice that of men, with similar differences at the 25th and 75th percentile. Wages of persons with secondary or higher education are also much higher than those of persons with less education (Table 90).

There are also important wage differences between the industries. The hourly wages are highest in the public sector (notably education, but also in health and social work and in public administration) (Table 91). Private sector industries, such as trade, construction, and manufacturing, have lower hourly wages than the national median. This is partly a result of the shorter working hours in the public sector, although this does not explain all—for example, the median hourly wage in education is more than twice the national median, while the median working hours is three-quarters of the national median.

The important gender differences are explained by the differences by industry. Median hourly wages are highest in education (2,021 dinars), where an important part of the female workforce is employed. There are only minor differences between men and women within the same industry, and the differences go in the opposite direction of what is found at the aggregate level: in education, the median hourly wage is 1,944 dinars for the women and 2,083 for the men (ILCS dataset).

Table 90: Hourly wages, main job

	25 percentile	Median	75 percentile	Uwn
All	**463**	**833**	**1,600**	**16,134**
Male	417	720	1,389	13,551
Female	893	1,429	2,188	2,583
15-24	313	521	857	3,697
25-54	521	1,021	1,750	11,452
55-64	682	1,389	2,500	870
65+	300	595	1,389	115
Never attended school	375	667	1,190	1,493
Less than elementary	313	521	875	2,277
Elementary	357	618	1,092	4,444
Intermediate	446	714	1,389	1,878
Secondary or higher	813	1,389	2,160	5,972

Table 91: Hourly wages by industry, main job

	25 percentile	Median	75 percentile	Uwn
All	**463**	**833**	**1,600**	**16,134**
Agriculture; hunting and forestry; fishing	250	375	595	861
Construction; manufacturing; mining; electricity, gas and water supply	375	571	857	3,552
Wholesale and retail trade; repairs; hotels and restaurants	250	429	760	1,732
Transport, storage and communications	414	595	1,000	1,164
Financial services; real estate, renting, business services	514	903	1,614	228
Public administration and defense; extra-territorial org.	767	1,318	1,931	4,915
Education	1,333	2,021	2,833	2,302
Health and social work	882	1,389	2,083	588
Community, social and personal services; households	298	500	833	670

Unemployment and underemployment

There is widespread unemployment in Iraq, particularly among young men. A large number of workers are discouraged and have given up looking for work, believing there is none to be found. In total, 1,359,000 Iraqis are either unemployed or discouraged workers, yielding an unemployment rate of 18.4 percent when including the discouraged workers, and a core unemployment rate of 10.5 percent. The unemployment rate (including discouraged workers) among young persons is 33.4 percent, and reaches an astonishing 37.2 percent among young men with secondary or higher education.

The majority of the unemployed are new entrants to the labour market, and there are indications that the majority of people employed before the war have been able to keep their jobs—with the significant exception, of course, of those in the army before and during the war. Of these people, close to one-third are either unemployed or inactive, and a third of those working are self-employed.

The ILO framework for unemployment and underemployment

The ILO framework (Hussmanns 1990) identifies different types of unemployment and underemployment, based on each individual's attachment to the labour market. As mentioned above, the definition of *unemployment* is "based on three criteria to be satisfied simultaneously: 'without work,' 'currently available for work' and 'seeking work' (Hussmanns p. 87)."

ILCS uses a one-week reference period for determining whether these criteria are satisfied, and there are of course some people who satisfy the first two criteria, but not the third—that is, they are not actively seeking work during the reference period. These persons are classified as d*iscouraged workers*. The ILO manual states that, "While the concept is not very precise and its definition varies from country to country, the term 'discouraged workers' generally refers to persons who want a job and are currently available for work but who have given up any active search for work because they believe that they cannot find it (Hussmanns p. 107)." Those persons that satisfy the two first criteria for unemployment, but are not seeking work because they believe there is none to be found, are accordingly classified as discouraged workers in the ILCS dataset.

Unemployed and discouraged workers are looking for work but cannot find any. *Underemployed workers* have work, but want more work or a different type of work. The ILO framework distinguishes *visible underemployment*, consisting of those "working less than normal duration; doing so on an involuntary basis; and seeking or being available for additional work during the reference period" from *invisible underemployment*, which is characterised by "low income, underutilisation of skill, low productivity (Hussmanns p. 122)." While it is relatively easy to identify visible underemployment, invisible underemployment is quite difficult to measure, and the ILCS dataset does not attempt to estimate the size of invisible underemployment in Iraq.

Table 92 gives an overview of the different types of unemployment and underemployment in Iraq. The largest category among the three is open unemployment (standard definition), with 710,000 persons; discouraged workers make up a slightly smaller group, at 649,000 persons. The visible underemployment is much less important, at 201,000 persons (around a third of the number of unemployed), and invisible underemployment is not measured. Note that taken together, these three groups are still relatively small compared to the number of persons employed, and much smaller than the group of inactive persons of working-age.

The unemployed and discouraged workers

There is a striking similarity between the discouraged workers and the unemployed: young men who have never been employed are overrepresented in both groups. Ninety-three percent of discouraged workers, and 78 percent of the unemployed, have never been working. Furthermore, 57 percent of the discouraged

Table 92: Unemployment and underemployment in Iraq

	Male	Female	All	Male	Female	All
Inactive	25	85	55	2,024,140	7,039,628	9,063,768
Discouraged worker	6	2	4	480,719	168,091	648,810
Unemployed (Standard definition)	7	2	4	567,716	141,989	709,705
Visibly underemployed	2	0	1	192,799	8,608	201,407
Employed	60	12	35	4,852,654	971,128	5,823,782
All	100	100	100	8,118,029	8,329,444	16,447,473

Table 93: Unemployed and discouraged workers

		Discouraged worker	Unemployed	Working-age population
Ever been employed		7	22	39
Never been employed		93	78	61
All		100	100	100
Male		74	80	49
Female		26	20	51
All		100	100	100
15-24		57	45	35
25-54		38	51	52
55+		5	4	12
All		100	100	100
Male	15-24	60	48	36
	25-54	35	47	52
	55+	5	4	12
	All	**100**	**100**	**100**
Female	15-24	48	33	35
	25-54	46	64	52
	55+	6	2	13
	All	100	100	100

workers, and 45 percent of the unemployed, are between 15 and 24 years of age, while only 35 percent of the total working-age population falls into this age group (Table 93). In other words, entrants to the labour market make up a large proportion of both the unemployed and the discouraged workers.

As the two groups are relatively similar, it is reasonable to consider both standard and relaxed unemployment in Iraq, where the relaxed unemployment includes both standard unemployment as well as the discouraged workers[18]. The effect of this is to increase the number of unemployed, and therefore also the size of the economically active population. Using the standard definition yields a labour force participation rate of 40.9 percent, and an unemployment rate of 10.5 percent. Conversely, using the relaxed definition of unemployment yields a labour force participation rate of 44.9 percent, and an unemployment rate of 18.4 percent (Table 94).

The rest of this section will report on both the standard and relaxed unemployment rates for different subgroups of the population. Note that the expression "relaxed unemployment rate" is a convention used by the ILO, and does not imply that the situation of the discouraged workers are in any way better than that of the "standard unemployed."

Unemployment varies by region, and is highest in the Baghdad region (standard unemployment at 13.5 percent, relaxed definition unemployment at 22.0 percent). Unemployment is lower in the north and central regions, while the south region is close to the national average (Table 95). The governorate of Al-Muthanna has the highest unemployment rates among the governorates, at 22.0 percent (standard definition) and 32.7 percent (relaxed definition), while

18. The "relaxed definition of unemployment"—unemployment where the "seeking work" criterion is relaxed—was introduced in 1982, to address situations where "the conventional means of seeking work are of limited relevance, where the labour market is largely unorganised or of limited scope, where labour absorption is at the time inadequate, or where the labour force is largely self-employed (Hussmanns 1990: 105 ff)." The current situation in Iraq arguably falls into this category.

Erbil has the lowest (4.7 and 12.4 percent, respectively) (ILCS dataset).

Unemployment rates are highest for young persons, approaching twice the national unemployment rates for both standard and relaxed definition of unemployment. Unemployment rates for women are slightly higher than for men, but as the labour force is made up primarily of men (83 percent using the standard definition), the majority of the unemployed are men: approximately 1,000,000 out of 1,359,000 unemployed are men (relaxed definition) (Table 96).

A further breakdown of the group of unemployed men shows that unemployment rates are much higher among young men, and highest among young men with secondary or higher education, reaching 37.2 percent among men aged 15-24 with higher education (relaxed definition) (Table 97). To some extent, this probably reflects that the men in this group have sufficient resources to stay unemployed, i.e. they are not forced into low-productivity activities such as street vending. But it is also reflective of a labour market in which those employed before the 2003 invasion have been able to hold on to their jobs, but to which it is very difficult for new entrants to find employment.

Table 94: Standard and relaxed definition of unemployment

	Standard definition	Relaxed definition
Labour force participation rate	40,9	44,9
Unemployment rate	10,5	18,4

Table 95: Unemployment rate by region

	Unemployment rate	Unemployment rate (Relaxed definition)
South	10,8	19,5
Baghdad	13,5	22,0
Centre	8,2	15,0
North	9,1	15,3
All	10,5	18,4

Table 96: Unemployment rates, by age and gender

	Unemployment rate			Unemployment rate (Relaxed definition)		
	Male	Female	All	Male	Female	All
15-24	18,7	20,3	18,9	32,1	40,6	33,4
25-54	7,2	11,1	7,9	11,2	18,8	12,7
55-64	5,9	5,1	5,8	9,5	12,5	10,0
65+	6,6	,3	6,0	14,7	31,9	17,1
All	10,1	12,7	10,5	17,2	24,0	18,4
Number of unemployed persons	567,716	141,989	709,705	1,048,435	310,081	1,358,516

Table 97: Male unemployment, by education

	Unemployment rate				Unemployment rate (Relaxed definition)			
	15-24	25-54	55+	All	15-24	25-54	55+	All
Never attended school	14,2	5,2	5,8	7,2	31,8	10,4	12,2	15,7
Less than elementary	17,9	7,4	4,2	12,3	31,4	11,1	9,8	21,4
Elementary	18,0	7,4	5,2	10,7	31,1	11,3	8,5	18,2
Intermediate	21,1	6,6	5,7	10,0	33,8	10,0	6,9	16,1
Secondary or higher	24,9	7,8	7,4	9,3	37,2	11,9	9,7	14,4
All	18,7	7,2	5,9	10,1	32,1	11,2	10,2	17,2

Evolution since December 2002

An important question is of course whether unemployment has increased after the invasion. This question is not easy to answer, as the data available from the period 2002-2004 are scarce (see Sletten and Louay 2004 for a review of data sources). ILCS asks respondents about their labour market situation in December 2002, but it is unreasonable to expect respondents to have a clear recollection of their activities one and a half years ago. ILCS finds a much lower number of employed persons in December 2002 than in May 2004 (5,193,000 against 6,025,000); however, this should probably be seen more as an indication of the difficulties of measurement than as an indication that employment has increased by 800,000 persons. Nevertheless, it is useful to note that the large majority of unemployed and discouraged workers have never been employed. Furthermore, of those employed today who were 15 years or older in December 2002, 82 percent have the same employer now as they had then, indicating that most people have been able to hold on to their job, including those employed in the public sector.

Table 98 shows the change of employer between December 2002 and May 2004. The table only shows the type of employer, not whether the employer is actually the same. With this caveat in mind, the table shows a rather large degree of stability over the period: 88 percent of those that were employed by the government in December 2002 are still employed by the government today, and stability is even greater within the private sector (94 percent) and family businesses (95 percent). Together these three sectors account for 91 percent of current employment.

The one area where employment has been unstable is the Iraqi army: only 11 percent of those that reported that they were employed by the Iraqi army in December 2002 are employed by it today. Close to one-third of the rest are not working: 12 percent are unemployed and 17 percent are inactive. There are 38 percent working in private companies, and 10 percent working for the government. However, among those working, 31 percent are self-employed, and report that they work for private companies. ILCS finds that there were 172,000 persons in the Iraqi army in December 2002; of these, 50,000 are either unemployed or inactive today, and 36,000 are self-employed. Nineteen thousand are still employed by the Iraqi army, and the remaining 67,000 are employed by the government or private companies.

Underemployment

Finally, this section considers those that have work, but would want more work or a different type of work. In accordance with the ILO definition, a person is classified as visibly underemployed if he or she is working less than 35 hours a week and wants to work more. On this basis, 3.3 percent of all employed Iraqis were underemployed, indicating that visible underemployment is not a widespread labour market problem (Table 99). Underemployment is more

Table 98: Change of employer since December 2002

	Employer December 2002								
	Local or central government, government companies	Private company	Cooperative or joint sector	Iraqi army	Family business	NGO	Private household	Other	Uwn
Employer May 2004									
Local or central government, government companies	88	2	9	10	1	7	10	15	7011
Private company	5	94	9	38	1	5	11	21	12,761
Cooperative or joint sector	0	0	68	2	0	0	1	0	629
Iraqi army	0	0	0	11	0	0	0	0	186
Family business	0	0	1	5	95	1	1	2	4,209
NGO	0	0	1	3	0	78	0	2	758
Private household	0	0	0	0	0	0	60	0	205
Other	0	0	0	1	0	0	0	30	144
Unemployed	2	2	7	12	1	4	4	17	710
Not in the labour force	4	1	4	17	1	4	13	12	811
All	100	100	100	100	100	100	100	100	27,424

widespread among men than women: 3.8 percent of employed men were underemployed, compared to 0.9 percent of employed women. Because the number of men employed is much larger than the number of women, in absolute numbers around 20 times as many men as women are underemployed.

There is a tendency towards less underemployment among persons with higher education—underemployment rates are higher than average for both men and women with only elementary or less than elementary education (Table 100). At the same time, as noted above, unemployment rates are higher in high education groups, which means that many persons are looking for jobs, and would presumably accept part-time work if it was offered. A possible explanation would be that hiring educated persons on part-time contracts is outside either unwritten norms (employers do not want to, or employees refuse), or hindered by labour market regulations.

Table 99: Underemployment rates, by gender

	Underemployment rate	Number of underemployed persons	Uwn
Male	3,8	192,799	987
Female	0,9	8,608	50
All	3,3	201,407	1,037

Table 100: Male underemployment rate, by education

	Underemployment rate	Number of underemployed persons	Uwn
Never attended school	2.6	14,203	90
Less than elementary	5.6	45,351	229
Elementary	4.4	71,064	366
Intermediate	3.7	25,436	124
Secondary or higher	2.6	36,425	177
All	3.8	192,478	986

9. Household Income and Wealth

Summary

There is little knowledge on how the economic situation of households has evolved in modern Iraq, due to a complete absence of statistics on household income and consumption. However, most observers agree that, due to a combination of wars, sanctions, and economic mismanagement, the average Iraqi household probably has lower real income today than in 1980.

The median per capita household income during the year 2003 was found to be 366,000 dinars (around 255 US$), and 17,250 dinars (approximately 12 US$) during the two weeks prior to the interview. Some 45 percent of households have wage income as the largest contribution to total household income; self-employment follows in importance at 34 percent. While it is unsurprising that close to 80 percent draw the largest part of their income from labour, it is important to note that more households depend on the formal labour market (wages) than on the informal (self-employment).

Almost all Iraqi households (96 percent) receive monthly food rations under the public food distribution system, which was funded by the oil-for-food programme. With the exception of the governorate of Al-Anbar, there is little geographical variation in the food distribution; in Al-Anbar the proportion of food distribution is lower, presumably due to security problems. There is no socio-economic targeting of food rations.

The three northern governorates have the highest incomes, while the governorates in central Iraq have the lowest. It seems that the households in Baghdad and the governorates in central Iraq have seen their incomes fall relative to those of households in the southern and northern governorates. As expected, incomes are higher for households with an attachment to the formal labour market, and increase with the education of the household head.

Income inequality is low in Iraq compared to elsewhere in the region. ILCS data yield a Gini coefficient on income inequality of 35.1 for the whole of 2003, and 41.5 in the two weeks prior to the interview. The poorest 20 percent of households receive less than 7 percent of the total income of Iraqi households, whereas the richest 20 percent receive 44 percent—more than six times as much.

Looking at subjective measures of poverty, it is evident that 16 percent of Iraqi households are unable to afford any one of six items listed (such as new clothes, heating, etc.); 35 percent are unable to raise 100,000 dinars should an emergency occur; and 28 percent describe themselves as "among the poor in Iraq." While there is some overlap, this is not absolute: only seven percent of households are poor according to all three subjective measures simultaneously.

Introduction

There is little knowledge on how the economic situation of households has changed in modern Iraq, due to a complete absence of statistics on household income and consumption. A general picture of the evolution since 1958 can be obtained by looking at data on overall economic growth, with due caution to the fact that economic growth has been driven primarily by oil production. In a petroleum economy, the relationship between economic growth (measured by growth in the gross domestic product (GDP) or gross national income (GNI)) and the economic situation of households (measured by household income or consumption) is not one-to-one, as oil revenues may be used by the government for imports or services rather than adding to households' incomes[19].

Based on the available GDP data and data on oil production and exports, most observers agree that economic growth took off in the 1970s (Owen and Pamuk 1998, Farouk-Sluglett and Sluglett 2001). Iraq nationalized the Iraq Petroleum Company in 1972 and, subsequent to the first oil shock in 1973, oil revenues began growing dramatically[20]. Oil production went from 1.3 million barrels per day (mbd) in 1965, to 2.3 mbd in 1975, to 3.5 mbd in 1979, and per capita national income increased correspondingly, from 104 Iraqi dinars (291 US$) in 1970 to 826 Iraqi dinars (2,313 US$) in 1979. This presumably led to a parallel increase in household income, as the government launched a series of major development initiatives. This period of rapid economic growth also saw significant rural-urban migration—the rural population decreased from 42 to 31 percent of the total between 1970 and 1980—and the growth of employment in the public sector and in state-owned enterprises, both of which indicate that households' incomes were increasing.

Macroeconomic data since 1980 have been scarce, but there is general agreement that GDP per capita has been declining since around 1980 due to a combination of wars, sanctions, and economic mismanagement (Owen and Pamuk 1998, Farouk-Sluglett and Sluglett 2001, Alnasrawi 1994). According to Al-Nasrawi, real GDP per capita fell by an astonishing 57 percent between 1980 and 1988—the end of the war with Iran—and fell even further before the UN's oil-for-food programme allowed the resumption of oil exports in the second half of the 1990s[21]. Although GDP per capita presumably recovered somewhat as a result, the average Iraqi household probably has lower income today than it had in 1980. In other words, households may have experienced a continuing decline in income over the past 25 years, a situation that is almost unheard of among middle-income countries.

19. This was for instance the case with Iraqi imports of military equipment and use of foreign contractors for infrastructure development.

20. According to Farouk-Sluglett and Sluglett (2001), Iraq has been "almost wholly dependent on oil revenues" since World War II, but levels increased enormously in the 1970s.

21. Oil exports before the U.S.-led invasion are estimated at 1.7-2.5 mbd by the Brookings Institution (2004).

Income and wealth of Iraqi households

Household income statistics are generally difficult to produce, even under fortuitous circumstances. Producing income statistics for Iraq presents additional challenges, which should be born in mind when reading this chapter. These challenges will be briefly summarised below, before presenting the findings on income levels, income sources (including the role of food distribution), and lastly savings and wealth.

Measuring income in Iraq through a household survey

Both income or consumption data are used to study the economic well-being of households, and there are merits to both methods. Unfortunately, these two types of data often diverge, even when collected by the same survey (McKay 2000: 96). The difference is not necessarily indicative of saving, but results from difficulties with measuring both income and consumption.

In its Living Standards Measurement Surveys, the World Bank identifies three problems with measuring household income: underreporting due to fear of criminals, tax authorities, or police (for instance when the source of income is an illegal activity); underreporting due to genuine ignorance about income generated by self-employment activities; and underreporting due to difficulties in identifying and including all possible sources of income in the survey instrument (McKay 2000: 95).

In Iraq, a number of additional challenges are present. First and most obviously, it is difficult to find a suitable time period for measuring household income. Normally, household surveys ask about income during the 12 months prior to the survey in order to capture seasonal variations. At the time of the ILCS, this would include the period immediately after the U.S.-led invasion, where one would expect household incomes to have fluctuated substantially, thereby making it more difficult for respondents to give accurate answers.

Compounding this is the issue of which currency to use for reporting income. When the Coalition Provisional Authority was established, three different currencies were used in Iraq: the Iraqi dinar (or "Saddam dinar," so called because the bills carried the picture of Saddam Hussein), the "Swiss dinar" used in the three northern governorates, and the U.S. dollar. The exchange rate between these currencies fluctuated enormously during 2003, with the Saddam dinar going from 4,000 to the dollar in the spring of 2003 to under 1,500 to the dollar by the end of May 2003.

Adding to the confusion, the large denominations of the Saddam dinars (the 10,000 notes) traded at a discount of 10-30 percent relative to the small denominations (the 250 notes), creating uncertainty about the value of income reported by the respondents.

The CPA carried out a currency reform in October 2003, introducing the new Iraqi dinar at 1:1 against the Saddam dinar and 150:1 against the Swiss dinar (150 new Iraqi dinars for one Swiss dinar). The new Iraqi dinar has been relatively stable against the US$, and has successfully replaced the Saddam and the Swiss dinar.

This currency reform creates additional confusion around measurement of household income in 2003: an Iraqi household could have income in four different currencies, with fluctuating exchange rates between three of these four throughout the year, and even between different denominations of one of them. Clearly, this is a situation where one of the prime functions of monetary measures—to serve as an accounting unit—is substantially weakened.

To try to address these problems, ILCS collected data on two different recall periods: income during the whole of 2003, and income during the two-week period immediately prior to the interview. The data for the two weeks prior to the interview are likely to be faulty because they do not capture seasonal variations; the data for the whole of 2003 are likely to be faulty because of the monetary instability during the period, and because respondents will have difficulty correctly remembering income during a long period (12 months) marked by war and instability.

Nevertheless, the ILCS data are the only data available for 2003 and 2004, and it is unlikely that anything better can be produced now that so much time has passed. When a household budget survey is carried out, this will give an indication of the quality of the ILCS data. Until then, the ILCS data are unique and will have to be used.

Finally, a general feature of this type of household income data is that it tends to underestimate income. The ILCS data should therefore be interpreted as a lower-bound estimate of income; income is unlikely to have been overestimated, but the degree of underestimation is not known.

Household income: An overview

The median per capita household income during the year 2003 was found to be 366,000 dinars (around 255 US$), and 17,250 dinars (approximately 12 US$) during the two weeks prior to the interview (see Box 6 on the calculation of per capita income). There is, of course, substantial variation, with the poorest 10 percent of the population having incomes below the median of the lowest quintile.

Table 101 also provides the median values by income quintiles. For 2003, income varies from 162,300 dinars (approximately 113 US$) in the lowest income quintile to 888,500 dinars (around 617 US$) in the highest. For the two weeks prior to the interview, income varies from 6,100 dinars (around 4.25 US$) in the lowest quintile to 50,000 dinars (around 34.75 US$) in the highest.

Box 6: The Use of Equivalence Scales

Income is measured at the household level, but assessments of welfare need to take into account the differences in size among households: two households with the same income, but with different size, are normally not assumed to be equally well off. For this purpose, a measure of income at the individual level is needed. We have chosen to calculate individual income by dividing income by the number of persons in each household.

There are two main problems with this approach. First, there are economies of scale at the household level: for example, housing costs tend not to increase proportionally with the number of household members. Secondly, the consumption needs of households vary with their composition—an adult needs more food than a child, while a child may need new clothes more often.

Normally, these concerns are addressed by using equivalence scales, which adjust for the demographic characteristics of household members when calculating per capita income. However, without detailed consumption data it is difficult to estimate equivalence scales for Iraq, and we did not want to apply the scales used elsewhere (such as the OECD equivalence scales), as we do not know how well they fit Iraq. This choice has a relatively strong impact on the estimated per capita income, and the effect is of course strongest for persons living in large households—their estimated income would be higher if equivalence scales had been used (see Coulter et al 1992a and 1992b for a survey of the use of equivalence scales).

As noted above, there are limitations to both the 2003 and 2004 measures of household income. A rough comparison can be made by multiplying the 2004 figures by 26, in order to provide an estimate of the annual income. This yields an annual median per capita income for 2004 of 448,000 dinars (around 311 US$)—22 percent higher than the 2003 median annual household income.

The most important implication to be drawn from this is that the two income measures yield estimates of the same order of magnitude and are consistent with each other. Whether the data should be interpreted as an increase in household income is less certain; a difference of 22 percent may easily be the result of measurement difficulties discussed earlier. Furthermore, even if there were no measurement errors, the reported income figures are nominal, and it is difficult to adjust for inflation over the period. (Inflation data for 2003 are lacking for part of the year, and are nevertheless problematic due to the lack of consumption data for defining the consumer price index.)

However, other observers point to a strong improvement in economic conditions between 2003 and 2004 (International Monetary Fund; International Crisis Group). As noted in chapter 8, labour market data point to an increase in employment between December 2002 and May 2003, although it is difficult to say by how much. Together, these developments lend support to the interpretation that household income has indeed increased.

It should be noted that ILCS finds substantially higher incomes for the poorest Iraqis than what was found by the World Food Programme in its Iraq Baseline Food Security Analysis (WFP 2004). The WFP reports that 11 percent of households had total expenditures of less than 35 US$ (50,400 Iraqi dinars) in December 2003. Conversely, ILCS data finds median income (for the whole household, not per capita) of the poorest ten percent of households to be 1,146,000 Iraqi dinars in 2003 and 43,750 Iraqi dinars in the two weeks prior to the interview (Table 101); expressed in dollars on a monthly basis, this is 66 US$ and 61 US$, respectively, close to twice the expenditure level found by the WFP. This difference is probably explained by ILCS asking more detailed questions than was done in the WFP survey, and we believe that the WFP estimates are too low.

Recent GDP estimates for Iraq are of course tenuous, but a comparison is nevertheless interesting, as the results appear to be consistent with the household income data. The World Bank puts 2003 nominal GDP per person in the range of 480-630 US$, increasing to 620-810 US$ in 2004. Looking at mean rather than median household income, we find it to be 322 US$ in 2003 and 422 US$ in 2004. This corresponds to 58.0 and 59.1 percent of the middle point in the GDP ranges (555 and 715 US$, respectively). By way of comparison, the 2003 Jordan Multi-Topic Household Survey, carried out by Jordan's Department of Statistics, found per capita household income at 76 percent of the GDP per capita, indicating that although

Table 101: Median total and per capita household income, by income quintiles (Iraqi dinars)

	Lowest income	Low income	Medium income	High income	Highest income	All Iraq
2003, whole year (per capita)	162,286	261,667	366,000	528,750	888,500	366,000
2003, whole year (entire household)	1,146,000	1,711,846	2,311,557	3,027,159	4,229,660	2,230,000
2004, two weeks prior to the interview (per capita)	6,100	11,333	17,250	26,643	50,000	17,231
2004, two weeks prior to the interview (entire household)	43,750	74,287	111,927	151,221	233,292	105,500

Table 102: GDP per capita and per capita household income, in Iraq and Jordan

	Iraq 2003 (ILCS)	Iraq 2004 (ILCS)	Jordan 2003 (MTHS)
GDP per capita	555	715	1,812
Mean per capita household income	322	422	1,372
Ratio of per capita household income to GDP per capita	58%	59%	76%

All figures in current US$,

Table 103: Households by income sources

	2003	The two weeks prior to the interview
Only one source of income	7	18
Two sources of income	69	66
Three or more sources of income	24	16
Total	100	100

the ILCS data may be too low, they are within the range of what is consistent with the GDP estimates (data from the MTHS made available by the Jordanian Department of Statistics).

Wage income is the most important income source

During 2003, about 70 percent of households in Iraq relied on two sources of income, and another 24 percent had three or more income sources (Table 103). The main reason for this apparent diversification is the food rations that almost all Iraqi households receive; in actual fact, taking aside the food handouts, the 70 percent named above relied on only one source of income in 2003.

The diversification of income sources is lower in the two-week period prior to the interview, with the percentage of households reporting three or more sources (including food rations) down from 24 to 16. This is likely to be caused by seasonal differences: income over the whole year may well be as diversified in 2004 as in 2003, but not during the two weeks prior to the interview. One particular fluctuation is caused by the distribution of the food rations, which occurs monthly and is reported as in-kind assistance from Iraqi institutions. Fourteen percent of households reported not having this type of income in the two weeks prior to the interview, compared to only four percent in 2003, but this is probably because they received the last food ration more than two weeks before.

Some 45 percent of households have wage income as the largest contribution to total household income; self-employment follows in importance at 34 percent. While it is unsurprising that close to 80 percent draw the largest part of their income from labour, it is important to note that more households depend on the formal labour market (wages) than on the informal (self-employment). This observation tallies well with the analysis of the labour market in chapter 8, and indicates that economic activity is still relatively organised, in spite of the ongoing insurrection.

The remaining 19 percent of households depend on transfer income. Most of these transfers (84 percent of average transfer income) are in-kind assistance from Iraqi institutions in the form of food rations. Pension payments make up a small part of the transfers (8 percent of average transfer income), with the rest made up by transfers from individuals in Iraq. This indicates that remittances from Iraqis living abroad play virtually no role in assuring the well-being of Iraqi households, which is somewhat surprising given the large number of Iraqis that are assumed to be living abroad as either refugees or migrant workers in neighbouring countries: ten percent of households report having close relatives living abroad.

All households receive food rations

A particular source of income in Iraq is the food rations distributed to almost all Iraqi households under the Public Distribution System (PDS)[22]. The PDS was put in place by the Iraqi government in 1990, in order to provide monthly food rations to the entire population at subsidised prices after the U.N. Security Council imposed economic sanctions. In 1996, with the advent of the oil-for-food programme, food imports destined for the PDS were funded by the proceeds of Iraqi oil sales. Immediately after the most recent war, the PDS was re-established, the World Food Programme took over responsibility for procuring, shipping, and transporting into Iraq the food commodities destined for the PDS. The Iraqi Ministry of Trade (MoT) has remained in charge of the implementation of the PDS, including the distribution of the food basket to households through a network of 44,000 food agents.

Under the PDS, households receive a food basket providing a total of 2,200 calories per day per adult (the exact figure varies somewhat). The households are in principle required to pay 250 dinars (0.17 US$) for the food basket, but this is apparently not a hard constraint; the WFP reports that 20 percent of Iraqis are unable to pay this amount, but receive the food basket nevertheless.

ILCS data show that 96 percent of all Iraqi households receive food rations. With the exception of the Al-Anbar governorate, where the proportion is lower (82 percent), there appears to be little geographical variation. This is in all likelihood due to the insecurity in Al-Anbar at the time of interviewing (April/May 2004)—both Fallujah and Ramadi are in Al-Anbar governorate. There is no socio-economic targeting of food rations. Among the poorest households—those in the lowest income quintile—96 percent receive food rations, compared to 97 percent of those in the highest income quintile (Table 104).

The WFP (2004:66) estimated the average market price of the PDS monthly ration at 23.3 US$ (33,500 dinars) in November 2003. This fits remarkably well with the ILCS data: median value of in-kind assistance from institutions in Iraq was 396,000 dinars for 2003 and 16,500 dinars for the two weeks prior to the interview, which corresponds to a monthly income of 33,000 dinars.

This value of in-kind assistance from institutions in Iraq corresponds to 18 percent of median household income in 2003, and 16 percent of median household income in the two weeks prior to the interview. It is reasonable to assume that this in-kind assistance is primarily the food basket, and hence that the food basket increases the average Iraqi household income by a fifth.

22. The following draws on World Food Programme (2004), Alnasrawi (2001), Food and Agriculture Organization of the U.N./World Food Programme (2003), and information from the website of the UN Office of the Iraq Programme (http://www.un.org/Depts/oip/background/index.html)

Table 104: Percentage of households receiving food rations

		Is receiving food rations	Is not receiving food rations
All Iraq		96	4
North	Erbil	99	1
	Sulaimaniya	99	1
	Dahouk	98	2
Baghdad		95	5
South	Al-Qadisiya	99	1
	Thi-Qar	99	1
	Babil	98	2
	Wasit	98	2
	Al-Muthanna	98	2
	Missan	98	2
	Basrah	98	2
	Al-Najaf	97	3
	Kerbala	95	5
Centre	Salahuddin	98	2
	Al-Tameem	97	3
	Diala	97	3
	Nineveh	97	3
	Al-Anbar	82	18
	Income 2003 per capita quintiles		
	Lowest income	95	5
	Low income	96	4
	Medium income	97	3
	High income	96	4
	Highest income	97	3

Savings and capital are uncommon

Some 20 percent of households report that they currently have savings of some sort. Households that have savings are more common in the northern region than elsewhere (27 percent), and least common in the southern region (16 percent).

Given the recent history of monetary instability in Iraq, it is not surprising that the most common form of saving is precious metals: close to 70 percent of households with savings report that at least part of their savings are in this form. Foote et al. (2004) quote a top Coalition budget official surmising that most Iraqis had never seen the inside of a bank when the 2003 war started. This speculation is confirmed by the ILCS data: only 31 percent of households with savings hold bank deposits, which corresponds to just over six percent of all households[23]. Almost equally common is saving in the form of jam'iyya, which is a form of rotating saving and credit association. Twenty-three percent of households with savings participate in a jam'iyya. It should be noted that saving in the form of precious metals is common in the region, and although the monetary instability in Iraq may have reinforced this tendency, it would probably be an important form of saving even if the dinar had been stable and banking services had been available.

The majority of households own their house

A particular type of household wealth is home ownership. Three out of four households—76 percent—own the house they live in, and an additional ten percent are either squatters or borrow the house without paying rent. As noted in chapter 1, houses are not necessarily of good quality, and a not negligible number of households live in dwellings that have been damaged during the war, thereby reducing the value of the real estate.

Nevertheless, home ownership has a substantial impact on the households' economic well-being. The households that did not pay rent (owners, squatters, and borrowers) were therefore asked to estimate the monthly rent they would have to pay for their dwelling at current market rates. The median estimate was 75,000 dinars (52 US$), which varies substantially with geography. This compares to the median total household income of 105,500 dinars during the two weeks prior to the survey, equal to a median monthly household income of 211,000 dinars. If the value of home ownership were added to household income in the form of imputed rent, household income would be increased by 35 percent for the median household. This is, of course, substantial, but it seems reasonable that a rent-paying household would spend one-third of its income on housing.

Household durables can be used for measuring economic status

In recent years, it has been increasingly common to try to assess the economic resources available to households through the construction of an index of assets owned (Montgomery et al. 2000, Filmer and Pritchett 2001). The arguments for doing so are primarily that income and expenditure data are unavailable, or that such data are of dubious quality. Using data on the assets owned by households, researchers have tried to generate indices that allow households to be ranked—from those with least resources, to those with most. Such an index will be constructed based on household durables owned by households, to complement the income data.

23. Correspondingly, very few households borrow money from banks. Of some 54,000 households that are repairing or planning to repair damaged houses, only 6,500 borrow from banks or other credit institutions, while 22,000 depend on help from their family.

There are different interpretations of what an asset index measures and how it relates to the income, consumption, and savings of households. Montgomery et al. (2000) argue that this type of data can be used as a proxy for current expenditures. Filmer and Pritchett (2001), on the other hand, take the view that both the asset index and the household's current consumption expenditures are proxies for what they call the unobserved "long-run economic status of the household." Discrepancies between the asset index and expenditure data are therefore not interpreted as measurement errors in the asset index, but measurement errors in either one (or both) of these two proxies.

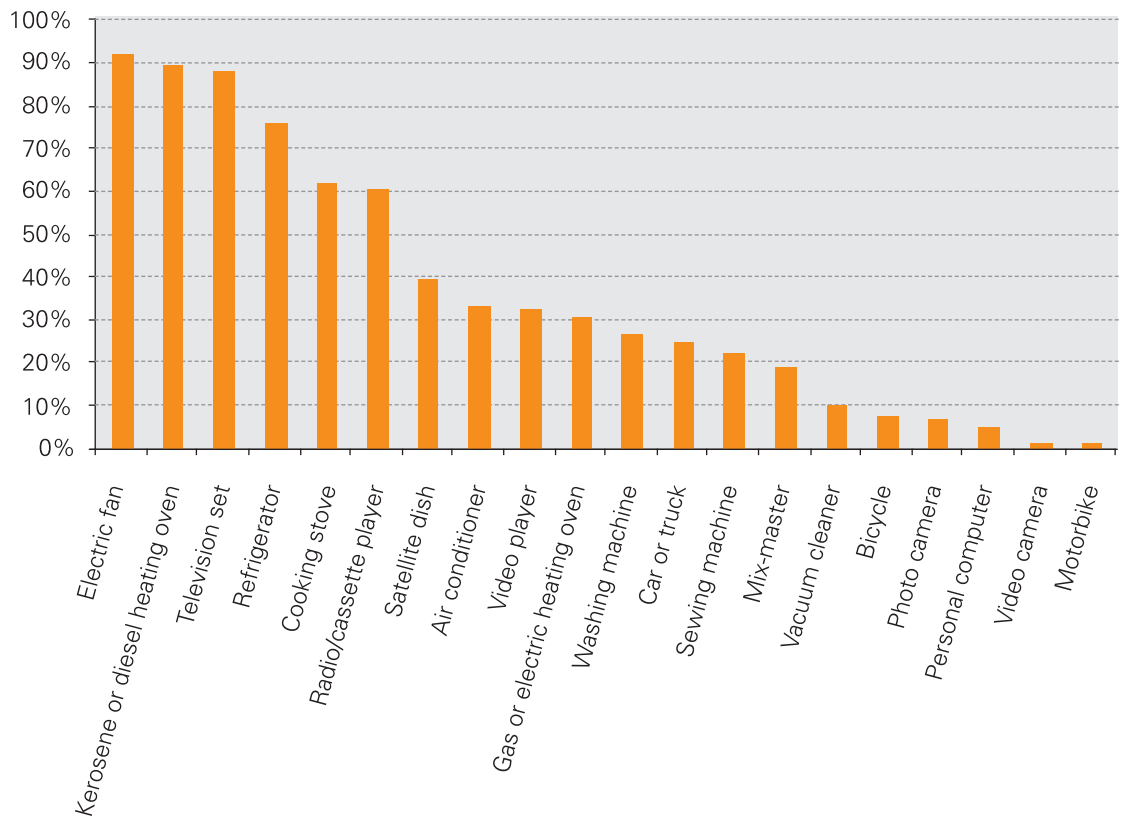
The interpretation is particularly difficult in Iraq, as household income has probably been quite volatile in recent years. In particular, there has been a shift in income level for many households after the U.S.-led invasion, and for these households, the asset index reflects previous income rather than current. This applies both to households whose income has suddenly increased, but have not yet acquired assets that reflect this increase, as well as households whose income has decreased, but have not yet disposed of assets previously acquired[24]. These households will have different places on rankings based on the asset index and on the income data. Therefore the index will be used as a tool to identify groups of households that have experienced a change in income compared with previous periods.

The ILCS asked households about ownership of 20 different household durables, ranging from cars and trucks to electric fans and mix-masters.

Figure 75 shows the proportion of households owning the different items. These items are of different value, but ownership reflects not only that a household can afford a particular object, but also the household's priorities. For example, 90 percent of households own a kerosene or diesel oven, while only 11 percent own a vacuum cleaner.

The primary interest of asking about items owned is, of course, to build an asset index, not to report ownership of individual items. There are many methods of constructing such indices, we chose a simple additive index: a count of the items owned by a particular household, from zero to 20. Figure 76 shows the distribution of households on the asset index. The average household owns 7 out of the 20

Figure 75: Distribution of household goods



24. According to the International Crisis Group, sales of household durables increased dramatically after May 2003. (ICG 2004), and information on when items were acquired would have been of great interest. Such information is unfortunately not available.

items listed. The distribution is slightly skewed, which is to be expected as wealth is unequally distributed in society.

The asset index is imperfectly correlated with the income measures, with a correlation coefficient of 0.33 with per capita income and 0.39 with household income. The asset index is therefore reasonably close to the income data, but also contains information not captured in the income data. We interpret this as an indication that for many households, the connection between income and ownership of household durables is weak, and that this is caused by recent changes in the income distribution[25].

In the next section, this asset index will be used together with the income data to analyse the distribution of economic resources within Iraq.

Income and wealth disparities

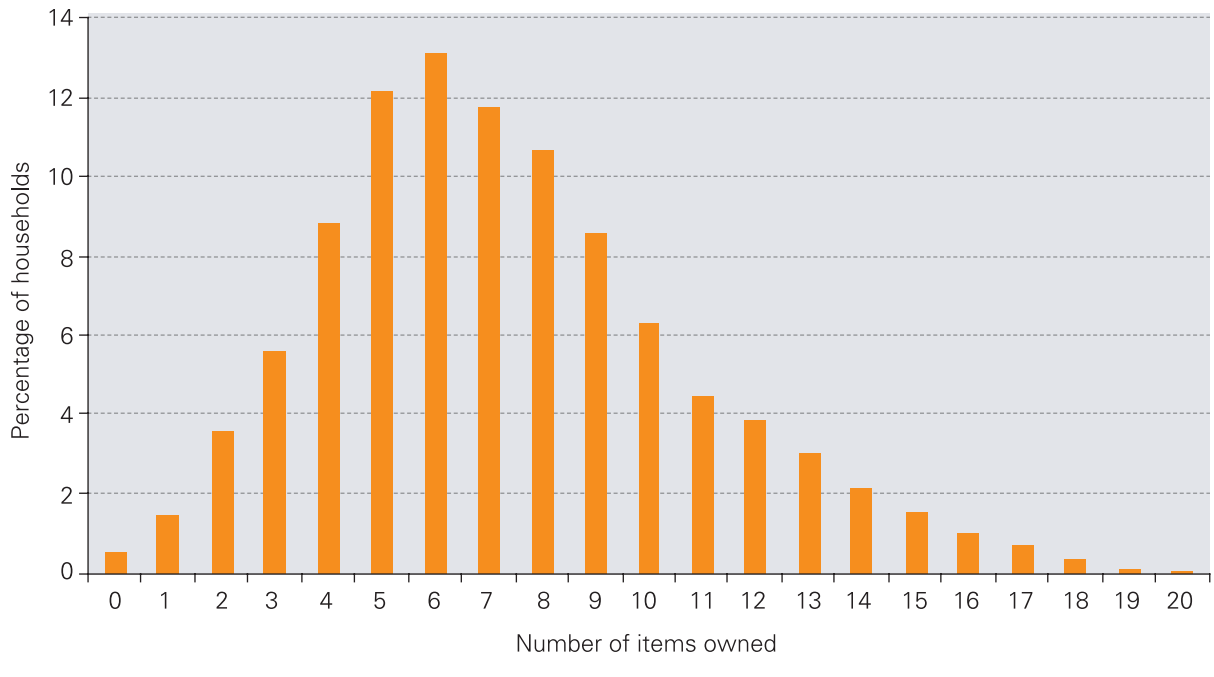
The income and wealth described in the previous section is unequally distributed in Iraq. This section will look at how these disparities depend on geography, demography, and the socio-economic characteristics of households and individuals.

Geographic differences: Northern and southern governorates are better off, while Baghdad and the centre has seen households' income fall. Very little is known about the geographic distribution of income in modern Iraq. Some of the factors that would be expected to create differences are readily identifiable, such as proximity to the Gulf or to mineral resources. Natural conditions vary quite substantially, from the northern highlands to the southern plains, and affect agricultural productivity. Furthermore, recent history can be expected to play an important role, in particular the quasi-independence of the three northern governorates after 1991.

Table 105 shows per capita income in 2003, per capita income in the two weeks prior to the survey, and the household's score on the asset index relative to the national average (which is set to 100). The first observation is that urban areas score higher than rural on all three measures. While median per capita income in urban areas was five percent above the national average in 2003, it was ten percent below in rural areas. For the asset index, the difference is even more marked, with urban areas scoring six percent above the national average, and urban areas scoring 21 percent below. This result is influenced by the fact that many of the items in the asset index are the amenities of modern life, such as video cameras and vacuum cleaners, and is not only an effect of lower incomes in rural areas.

Given the observable urban-rural divide, we have added a breakdown on urban and rural areas to the results by region (Figure 78)[26]. Looking at income

Figure 76: Distribution of households on asset index



25. If we had followed Filmer and Pritchett, these discrepancies would instead be due to income and asset ownership both being imperfectly correlated with the unobserved long-run economic status of the household.

26. Note that since the urban population is more than three times the size of the rural, averages tend to follow the pattern reported for urban areas.

Table 105: Income and household durables by place of residence and governorate

	Median per capita annual household income 2003 (Iraqi dinars)	Median per capita annual household income 2003	Median per capita household income two weeks prior to interview	Number of household durables	Difference between 2003 income score and asset index score
All Iraq	366,000	100	100	100	0
Rural areas	328,455	90	84	79	11
Urban areas	382,667	105	104	106	-2
North					
Erbil	441,000	120	132	114	7
Sulaimaniya	390,000	107	117	106	0
Dahouk	374,571	102	103	94	8
Baghdad					
Baghdad	386,000	105	103	112	-7
South					
Basrah	456,333	125	132	94	31
Wasit	416,000	114	94	92	22
Missan	399,333	109	113	88	21
Babil	354,000	97	89	88	8
Al-Najaf	354,000	97	89	88	9
Al-Qadisiya	354,000	97	98	81	16
Kerbala	351,333	96	96	94	2
Thi-Qar	337,429	92	86	86	6
Al-Muthanna	211,500	58	56	81	-23
Centre					
Al-Tameem	412,667	113	113	105	8
Diala	376,667	103	91	89	14
Salahuddin	329,158	90	66	95	-5
Al-Anbar	325,556	89	97	103	-14
Nineveh	291,000	80	79	100	-21

National average=100

first, we find that the northern governorates have the highest per capita incomes, in particular when looking at 2004 data in urban areas. The governorates in the centre of Iraq have the lowest per capita incomes (again, more marked when looking at 2004 data, in particular in rural areas). Overall, the median per capita income in 2003 was 26 percent higher in the northern governorates than in the centre governorates, at 413,000 dinars against 328,000.

Baghdad has slightly higher per capita income than the national average, both in 2003 and in the two weeks prior to the interview (only urban areas shown). However, urban areas in the southern governorates actually have higher per capita income than the capital.

Looking at the asset index, it turns out that both Baghdad and the central governorates score higher on the asset index than on per capita income, in particular in urban areas. One possible interpretation for this is that the high score on the asset index reflects past income, and that people living in these governorates have experienced a fall in income since 2003. A similar interpretation would lead us to conclude that income in the southern governorates has increased substantially since 2003, as the income scores are close to the averages in rural and urban areas while the asset index score is below.

The northern governorates constitute a special case, as these areas primarily used the Swiss dinar before the currency reform. The Swiss dinar was exchanged against the new Iraqi dinar at a rate of one Swiss dinar to 150 new Iraqi dinars, but Foote et al. note that "the PPP rate appeared much closer to the 1:100 exchange rate that had prevailed from 1998 to 2002" (Foote et al. 2004). In other words, the exchange rate used may have inflated incomes (as well as prices) in the northern governorates by up to 50 percent compared

to the rest of Iraq. If this is the case, it explains why the northern governorates have higher income than the national average, while ownership of household durables is closer to the average.

important differences within the regions

Table 105 provides data on the governorate level within each region. Basrah has the greatest positive difference between the 2003 per capita income score and the asset index score: per capita income is 25 percent above the national average, while the asset index score is six percent below. This could indicate that, relative to the rest of the country, households in Basrah have a higher income today than before the invasion. (In absolute terms, income may have decreased, but relative to other governorates, Basrah is better off today than previously.) This in turn could be explained by the relative peace and prosperity in Basrah in the period before the ILCS fieldwork.

Two governorates stand out with a higher score on the asset index than on the 2003 per capita income score: Al-Muthanna and Al-Anbar. For Al-Muthanna, this may partly be explained by the proximity to Saudi Arabia and Kuwait, meaning that household durables may be less expensive, and also giving households the opportunity to engage in smuggling (which they would be less likely to report to interviewers, thus leading to an underestimation of household income). Al-Anbar is home to the cities of Fallujah and Ramadi, and it is quite conceivable that the relatively lower score on 2003 per capita income is caused by a reduction in the income of households after the invasion, compared to the rest of the country.

It should be noted that the low scores in the governorates of Salahuddin and Wasit on income in the two weeks prior to the interview (the 2004 data) could be caused by the greater importance of agriculture in these two governorates, and hence greater seasonal fluctuations in income.

Demographic differences are difficult to identify

It would be uncontroversial to assert that there are differences in income between women and men, and between young and old persons in Iraq. However, such differences are difficult to identify through a household survey, because it measures income on the household level rather than for each individual. The income of men and women is therefore by definition equal, as it is obtained by dividing the household income by the number of persons (men, women, and children) in the household. Inequalities are often caused by intra-household allocation decisions, and such allocations are very challenging to measure and to analyse[27] (see Box 6 on calculation of per capita income and the use of equivalence scales).

The normal approach to analysing demographic differentiation is to classify households according to the demographic characteristics of the household head. However, two aspects of the household structure in Iraq make this difficult. First, households with older household heads are surprisingly large, with a mean size of 6.36 members. This is probably an indication that many households include three generations, with the oldest generation taking the headship. Secondly, the female-headed households in Iraq are also relatively large, with a mean size of 4.94 members. Both of these aspects make it more difficult to identify the effects of demography on income, as somebody other than the household head may be the main breadwinner (e.g. an adult son still living at home).

Table 106: Income and household durables, by age and gender of household head

	Median per capita annual household income (2003)	Median per capita annual household income (2003)	Median per capita household income (2004)	Additive wealth index	Household size
All Iraq	366,000	100	100	100	6,38
Male household head	366,000	100	100	101	6,57
Female household head	373,333	102	99	93	4,94
Young household head (Less than 34 years old)	368,400	101	102	82	4,91
Middle-aged household head (35-59 years old)	366,000	100	98	105	7,00
Old household head (Over 60 years old)	402,000	110	109	106	6,36

27. Furthermore, there is a conceptual problem with using income data to compare the wellbeing of households in different stages of the life cycle. If households save or borrow to smooth consumption over the life cycle, consumption may differ substantially from income and income data from one period only will not permit an analysis of their wellbeing (Modigliani 1963). For instance, such smoothing is likely to occur around the time of marriage, when households save by buying gold, to be sold later in life. Our data do not permit an analysis of this issue, as the level of savings is not measured.

The data show no difference between female-headed and male-headed households in terms of per capita income (Table 106). This result is probably caused both by the fact that many female-headed households are large (implying that somebody other than the household head may be the main income earner), and by our choice not to use equivalence scales: male-headed households are larger, and would have higher per capita income if equivalence scales had been used. Looking instead at the asset index, female-headed households score seven percent below the national average. This may indicate that the income data does not capture the entire reality, and that the economic situation of female-headed households is indeed more difficult than that of male-headed households.

There is also little difference by age: income levels are equal for households with young and middle-aged heads, while households with old heads have income around ten percent above the national average (Table 106). Here again, the results are influenced by the household size, and use of equivalence scales would probably have increased the income of households with middle-aged heads. The asset index indicates that households with young heads are less well off, though this is probably partly explained by the fact that households take time to accumulate assets.

These two observations—little difference in income by age and gender—should be treated with caution, and this is a field that merits further investigation, perhaps based on a more detailed analysis of household and family structures. In particular, it seems reasonable that age and gender are important parameters for determining which households fall into poverty. That 'differences are difficult to identify using household income data' should not be taken as proof that gender and age do not influence the monetary well-being of households.

Socio-economic differences

Higher education and formal sector employment increase the economic status of households

Income depends on a number of socio-economic characteristics, such as education and type of economic activity. This is partly through the direct effect of such characteristics on individuals' earnings, but also because these characteristics are proxies for other underlying factors, which may be summed up under the heading of "social capital." This section will look at how income relates to three measures of the social situation of a household: the share of household members that are working, the employment status of household members, and the education of the household head.

Income of course increases with the share of household members that are working (Table 107). This is primarily a mechanic effect of the manner in which per capita income is calculated: the earnings of working family members are divided between all other family members, and when the income decreases[28].

Table 107: Income and household durables by employment and education

	Median per capita annual household income (2003)	Median per capita annual household income (2003)	Median per capita house-hold income (2004)	Additive wealth index	Household size
All Iraq	366,000	100	100	100	6,38
Share of household members currently employed					
Less than one fifth	291,000	80	77	99	8,11
Between a fifth and a fourth	366,000	100	98	103	6,57
Between a fourth and half	450,000	123	127	104	6,11
Half or more	642,000	175	193	104	4,07
Employment status of household members					
No employed household members	256,000	70	55	84	4,77
Self-employed or unpaid family workers	346,056	95	89	95	6,67
At least one paid employee	402,500	110	115	105	6,56
Education of household head					
Never attended school	340,800	93	90	87	6,79
Incomplete elementary	330,000	90	88	85	6,28
Elementary	334,750	91	89	92	6,49
Intermediate	366,000	100	99	102	6,34
Secondary	406,590	111	116	114	6,14
Higher	498,000	136	145	134	5,82

28. The relationship between the share of household members currently employed and per capita income is not strictly one-to-one, as earnings differ. Hence, there are cases where per capita income is higher for households with lower share of household members employed, but the general effect is clear, as shown in Table 107.

Figure 77: Income and household durables, by region and urban/rural areas

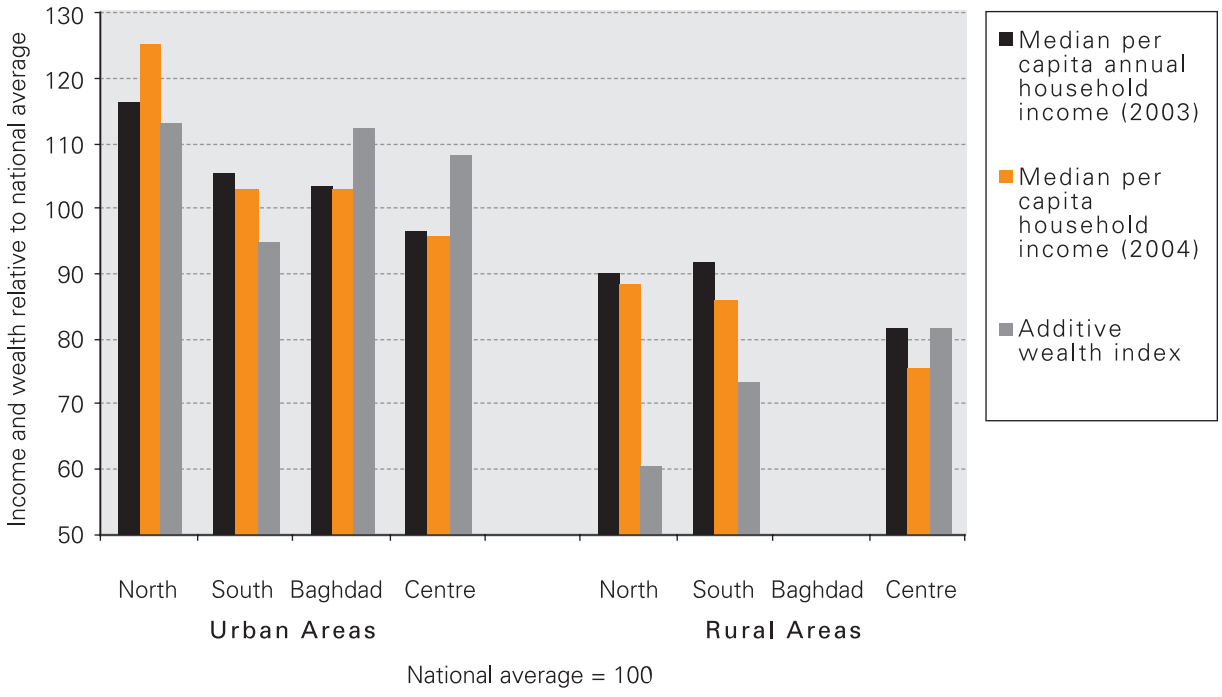
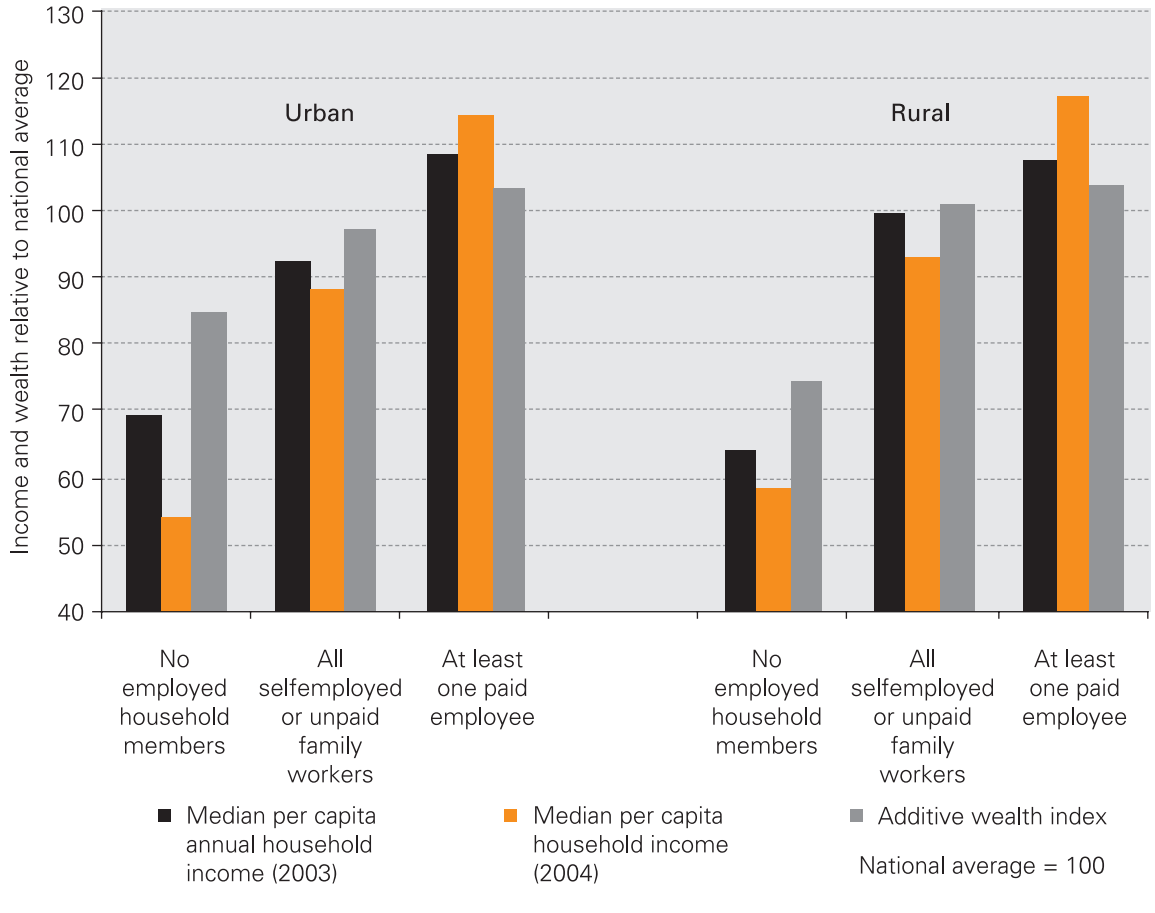


Figure 78: Distribution of income and household durables on employment status of household members and urban/rural areas



The share of household members that are working increases when the household size decreases, which is in all likelihood because large households have more children.

Households with a larger share of employed members also score better on the wealth index. This indicates that these households may be somewhat better off economically, although not to the extent indicated by the per capita income measures.

A more interesting measure of social differentiation is the employment status of household members. We divide households into three groups: those with no employed household members; those with household members employed in the informal sector (proxied by being self-employed or unpaid family workers); and those with at least one household member in the formal sector (proxied by being a paid employee).

Findings show that households with no employed household members have low income and a low score on the asset index. (Their income the two weeks before the interview is lower than the 2003 income. This is because the employment status is for the week prior to the interview; household members may have worked in 2003.) Households depending on employment income only from the informal sector have slightly lower per capita income (median of 346,000 dinars against a national median income of 366,000 in 2003), and score five percent below the national average on the asset index. Households with at least one person working in the formal sector have higher per capita income (median of 402,500 in 2003), and score five percent above the national average on the asset index. The differences between formal and informal sector do not depend on household size, and are similar in rural and urban areas (Figure 78 and Table 107).

While these results are not surprising, they demonstrate how the labour market attachment of households affects their income, and particularly how the ability to place at least one household member in a formal job lifts per capita income. It is unsurprising that earnings are lower in the informal sector, but the point merits attention, as these differences in earnings contribute to defining social strata.

As discussed in chapter 8 on the labour market, getting formal employment depends on education. The educational attainment of the household head is a useful indicator on the socio-economic status of the household (and hence on the employment levels of other household members), and the household head is also the main breadwinner in most households. It is therefore not unsurprising to find a clear relationship between the education level of the head of the household and per capita income. Median per capita income is close to 500,000 dinars (36 percent above the national average) in households where the household head has higher education. This is primarily caused by the higher wages earned by persons with higher education. As noted in chapter 8, hourly wages of persons with secondary or higher education are on average twice as high as those obtained by people with no formal education. However, the effect of the smaller household size should not be overlooked—household heads with higher education have on average one person less in their households than household heads with no education. This gives a lower dependency ratio (not shown), and higher per capita income.

Inequality and poverty

Income inequality is higher than in neighbouring countries

Income inequality is low in Iraq compared to elsewhere in the region. ILCS data yield a Gini coefficient on income inequality of 35.1 in 2003, and 41.5 in the two weeks prior to the interview[29].

Figure 79 shows the Lorenz curves for per capita income. The 2003 distribution completely dominates the distribution in the two weeks prior to the interview, indicating that the increased inequality is caused by a wider dispersal of income across the whole population. The higher inequality in the two weeks prior to the interview is likely to be caused by the shorter recall period. If income is unevenly distributed over the year, for instance because of seasonal fluctuations, inequality is likely to be higher in a short period than over the whole year.

A different measure of inequality is the share of overall income going to the richest and poorest groups in society. In Iraq, the poorest 20 percent of households receive less than 7 percent of the total income of Iraqi households, while the richest 20 percent receive 44 percent, or more than six times as much.

Inequality data for neighbouring countries are scarce, and Table 108 shows the data that are available. The data listed below are from the Human Development Report (HDR), except for Jordan where the data has been added from the recent Multi-Topic Household Survey. Gini coefficients from the HDR range from 34.4 for Egypt to 43.0 for Iran. These coefficients are all based on household expenditure data, and income inequality is normally higher than expenditure inequality. The Jordan data illustrate this point, with an income-based Gini coefficient of 41.8 and an expenditure-based Gini coefficient of 35.1. Inequality in Iraq, measured by an income-based Gini coefficient of 35.1, is therefore considerably lower than what is observed in those neighbouring countries for which data are available; in particular, inequality is much lower than in Iran.

Defining poverty

As shown in Table 108, Iraq's relatively low inequality is offset by having the lowest GDP per capita of all countries in the region. The very low GDP per capita should cause a larger part of the population to fall into poverty than in neighbouring countries. Jordan, which is one of the few countries in the region to report poverty estimates, puts its poverty headcount at 7.4 percent of the population (population that subsists on less than 2 USD per day 1997) (World Bank 2004c:55),

29. The Gini coefficient is calculated for individuals, using per capita income. Inequality among households is somewhat higher.

Figure 79: Lorenz curves for per capita income in Iraq

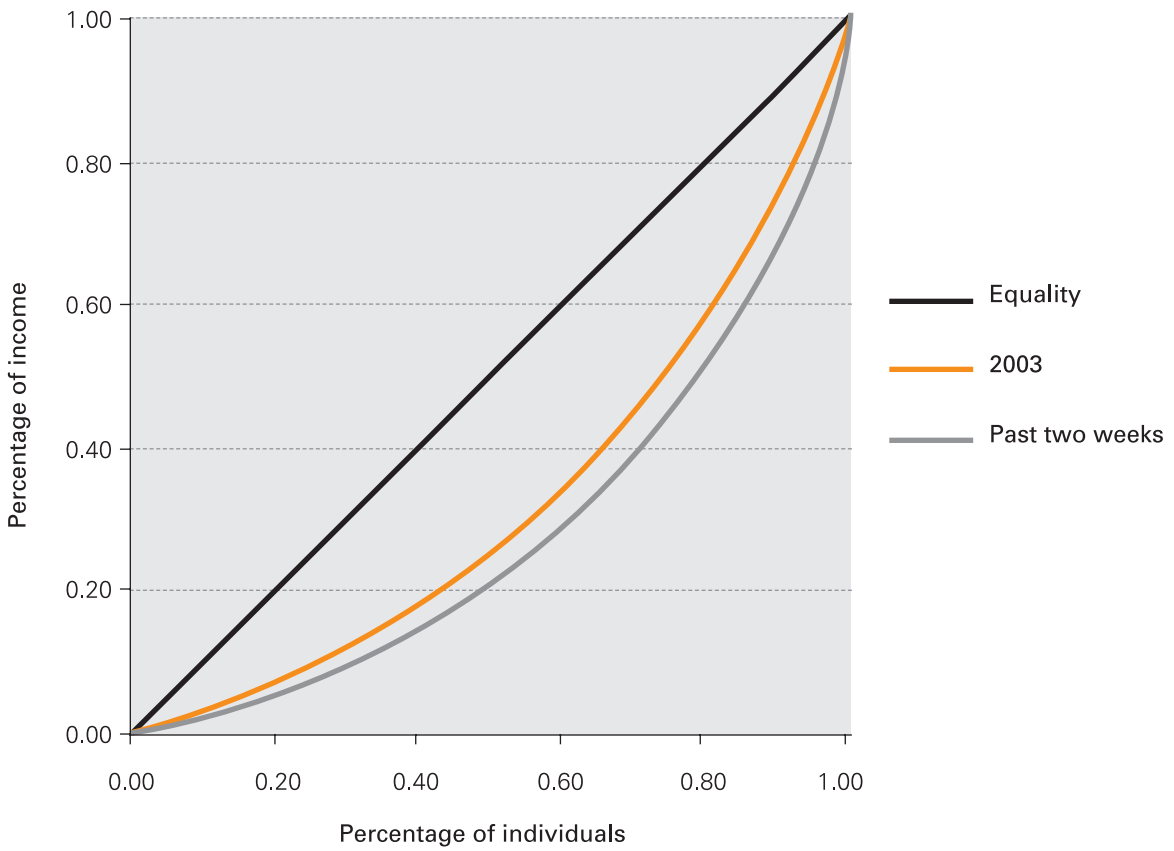


Table 108: GDP per capita and inequality measures for the Middle East

	GDP per capita (US$)	Share of income or consumption (Poorest quintile)	Share of income or consumption (Richest quintile)	Ratio of richest to poorest quintile	Gini index
Kuwait	15,193	..	..	..	..
Lebanon	3,894	..	..	..	..
Jordan	1,799	7,6	44,4	5,9	36,4
Jordan (MTHS)		6,0	48,4	8,06	41,8
Iran	1,652	5,1	49,9	9,7	43,0
Syria	1,224	..	..	..	..
Egypt	1,354	8,6	43,6	5,1	34,4
Iraq	620-810	6,8	43,5	6,4	35,1

Data from the Human Development Report 2004, except Jordan MTHS, which were made available by the Jordanian Department of Statistics

Table 109: Subjective welfare: Items the household can afford

	Number of items afforded by household						
	1	2	3	4	5	6	All
Can afford new rather than second hand clothes	72	71	86	95	98	100	71
Can keep dwelling adequately warm during winter	14	48	78	97	99	100	56
Can afford to eat meat, chicken or fish 3 times a week	8	41	48	81	92	100	46
Can keep dwelling adequately cool during summer	4	28	57	88	97	100	46
Can afford to replace worn-out furniture	2	10	26	30	90	100	30
Can afford a week's holiday away from home	1	2	5	10	23	100	18

and it would be surprising if poverty levels in Iraq were lower than this.

However, measuring poverty in Iraq is difficult due to lack of data. Without consumption and price data, it is not possible to establish a national poverty line based on the actual consumption patterns of Iraqi households. There are no PPP conversion factors available, and it is therefore problematic to use the international poverty lines of 1 or 2 US$ per day. (Converting these at market exchange rates is likely to yield very misleading results, although the use of PPP conversion factors can also be misleading—see Deaton 2001 for a discussion.) Without a poverty line, we cannot use the income data to identify poor households.

As we cannot use the income data to directly measure poverty, alternative methods should be used to identify poor households and individuals. A number of measures included in the survey data do give an indication of vulnerability and deprivation, through self-assessment of the household's financial situation and ability to purchase food and non-food items or raise money should an emergency occur.

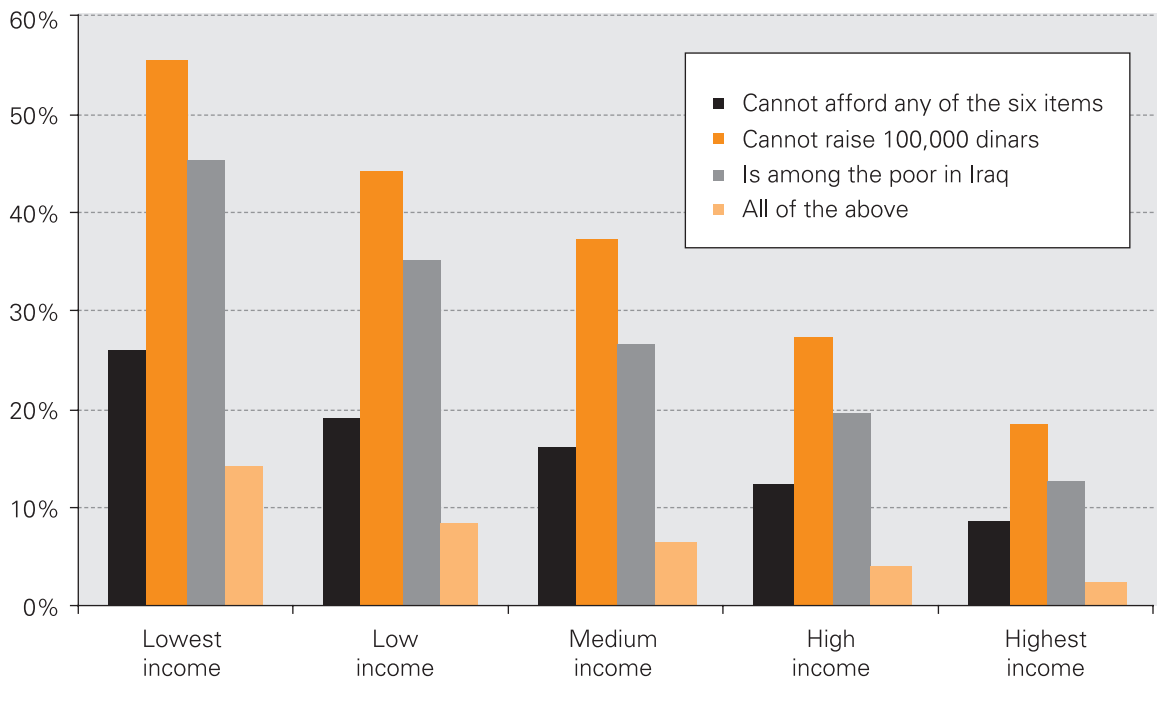
The first set of subjective welfare measures include a series of questions asking the respondent if the household is able to afford six different items, ranging from basic food and shelter to more "luxury" expenditures such as vacations. This generates a "purchasing power index," going from zero to six, which divides the population into seven groups of roughly equal size. Some of the items clearly mark thresholds of increased purchasing power; for example, almost all households except the poorest can afford to buy new rather than secondhand clothes, and only the richest households can afford a week's holiday. Other items are subject to household preferences and probably also geographical differences, such as the whether to give priority to keeping the house cool during summer or warm during winter (Table 109).

One in six households—16 percent—cannot afford any of these items: they cannot afford to keep their house cool in summer, nor warm in winter, they cannot afford new clothes or replace worn-out furniture, they eat meat, chicken or fish no more than twice a week, and they cannot go on vacation. These households would probably be considered poor by many of their neighbours, as poverty is normally understood as not being able to afford the same things as others. We will classify these 16 percent as poor according to the first subjective welfare measure.

A second self-assessment tries to measure the household's vulnerability by asking whether it would be able to raise 100,000 dinars (approximately 70 US$) in a week, should an emergency occur. A majority affirmed that this would be possible: 22 percent of the households said they could draw this sum from their savings, and a further 43 percent could raise it "with some help from others." But 35 percent—more than one in three households—believed they would be unable to raise this sum.

Being unable to raise 100,000 dinars in a crisis implies that a household is vulnerable to shocks that cause loss of income, such as illness or unemployment. Of course, these households often also have low income to begin with: more than half of the households in the

Figure 80: Subjective poverty measures in percentage of households, by income quintiles



lowest income quintile are unable to raise 100,000 dinars, versus only one in five households in the upper quintile. Furthermore, most of the vulnerable households thus identified have had economic difficulties for a long time: half (49 percent) say that their economic situation has been difficult since before the UN sanctions were imposed, 42 percent say the situation became difficult after the sanctions started, and only six percent report that the situation became difficult with the war in 2003.

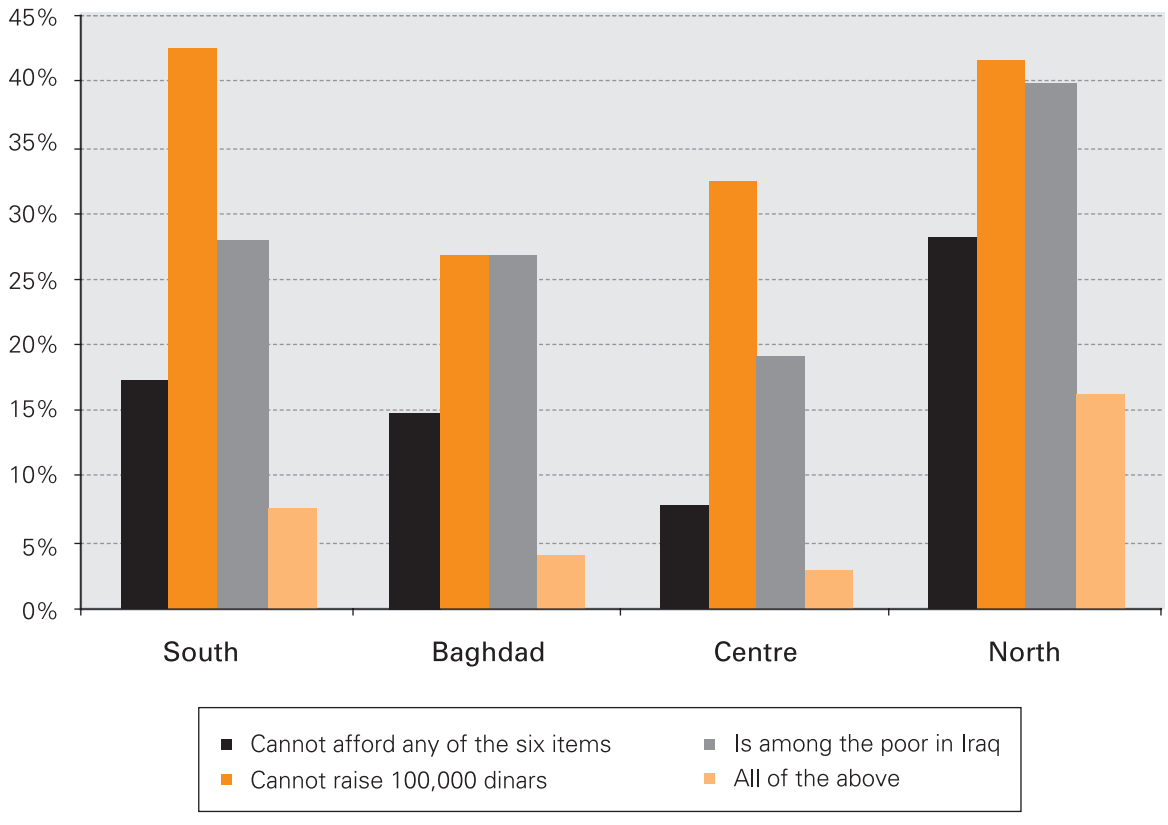
The third subjective welfare measure goes directly to the economic situation of the household. Households are asked whether they consider themselves to be "among the well-offs," "manage to live well," "are neither rich nor poor," or are "among the poor in Iraq." The categories are presented in sequence, so that being "among the poor" is a residual category. The purpose of this sequencing is to avoid asking households to directly categorise themselves as poor and non-poor, as there is often considerable social stigma attached to poverty. It turns out that 28 percent—close to one in three households—self-classify as "among the poor in Iraq." The large majority (59 percent) are neither rich nor poor, while very few (13 percent) classify themselves as living well or being well-off.

A discussion of the usefulness of subjective versus objective (i.e. income - or consumption-based) measures of poverty is beyond the scope of this text. Nevertheless, we observe that there is no perfect correlation with the income measure. Figure 80 shows the percentage of households that cannot afford any of the six items in the purchasing power index; the percentage of households unable to raise 100,000 dinars in a crisis; and the percentage of households that self-classify as "among the poor in Iraq," in each of the income quintiles generated by the 2003 per capita income data. It also adds the percentage of households defined as poor by all three subjective measures.

There is a clear relationship between the subjective welfare measures and the income data, and the proportion of households experiencing destitution according to any one of the three subjective measures is much higher in the lowest income quintile than in the highest. Nevertheless, there are still households in the upper quintiles that experience problems. For instance, 12 percent of households in the highest quintile self-classify as "among the poor in Iraq," compared to 45 percent in the lowest quintile.

Part of this can be explained by measurement problems for the income data (e.g. income may be overestimated for certain households) or problems with the subjective measures (e.g. households may understand the notion of being "among the poor" differently). However, most of the difference between subjective and objective measures is likely to be caused by the fact that the experience of poverty is

Figure 81: Subjective poverty measures in percentage of households, by region



fundamentally a subjective one, which does not always correspond to measurable objective living conditions. It is entirely conceivable that a household living in Baghdad experiences their situation as desperate poverty, even though their income is higher than that of another household in the rural areas, as this poverty has much to do with the expectations of each household and its perceptions of what constitutes sufficient living standards.

In sum: 16 percent of Iraqi households are unable to afford any one of six items listed; 35 percent are unable to raise 100,000 dinars should an emergency occur; and 28 percent describe themselves as "among the poor in Iraq." While there is some overlap, this is not absolute—only seven percent of households are poor according to all three subjective measures simultaneously.

These subjective measures have been used because we do not have a poverty line, and thus cannot define persons as "poor" or "non-poor" based on income data. One of the problems with using subjective measures is that there is no accepted definition of poverty, and it is therefore not possible to say whether 16 or 35 or 28 percent of the population is "poor"—i.e. it is not know which of our subjective measures should be used as the poverty line. Furthermore, it is an arbitrary choice to define as poor only those households that cannot afford any of the six items instead of including those that can afford at least one item, just as it is arbitrary to ask about the ability to raise 100,000 dinars instead of 50,000 or 150,000. In the following, we will look at the distribution of poverty in the same way as we analysed income disparities. In doing so, we will report on all three subjective measures without giving priority to any of them.

Who are the poor?

As observed above, the subjective measures do not give us a poverty line, as there is no generally accepted definition of subjective poverty. Using the three subjective measures above, we can nevertheless try to find out who the poor are in terms of geography, demography, and socio-economic characteristics, in the same manner as we analysed income differences.

Starting with the geographic dimension of poverty, we find somewhat surprisingly that subjective poverty is highest in the Kurdish areas, the region where

Figure 82: Subjective poverty measures in percentage of households, by sex and age of household head

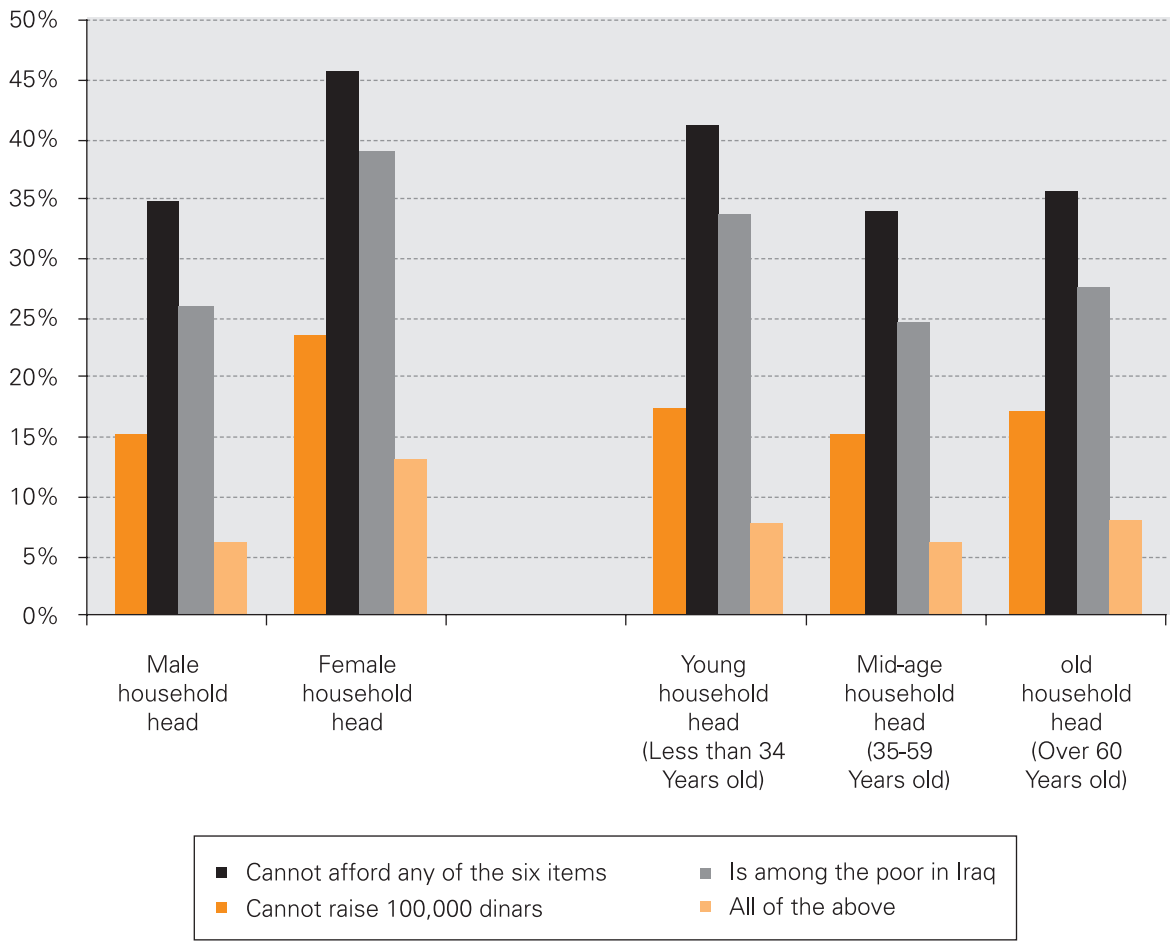


Figure 83: Subjective poverty measures in percentage of households, by employment status of household members

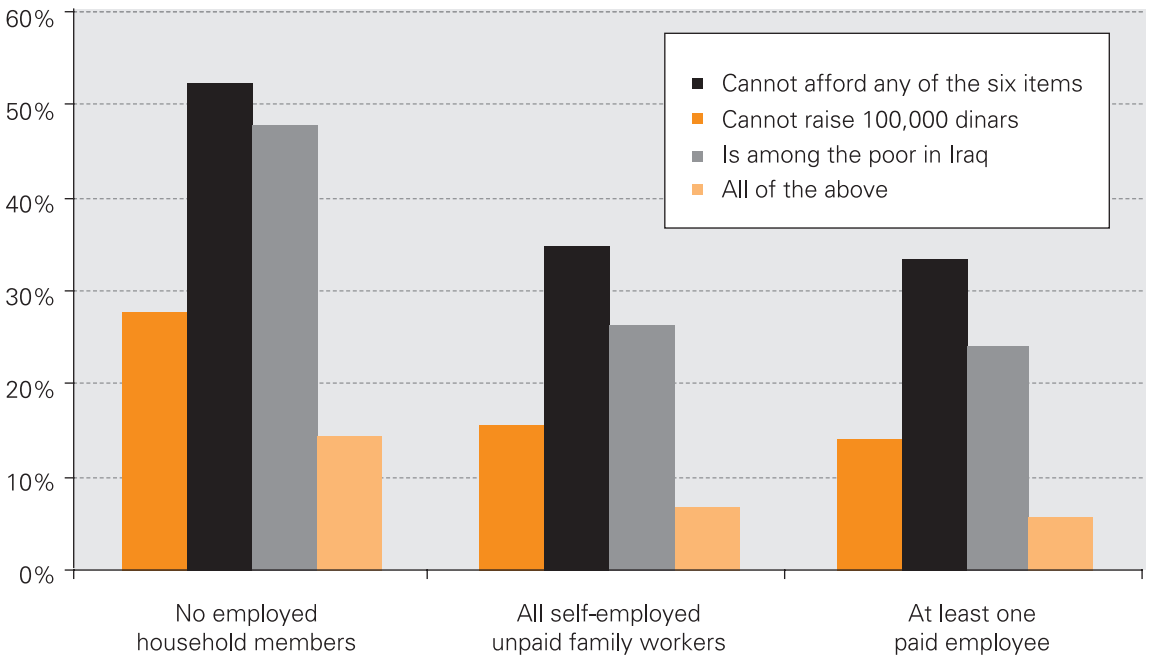
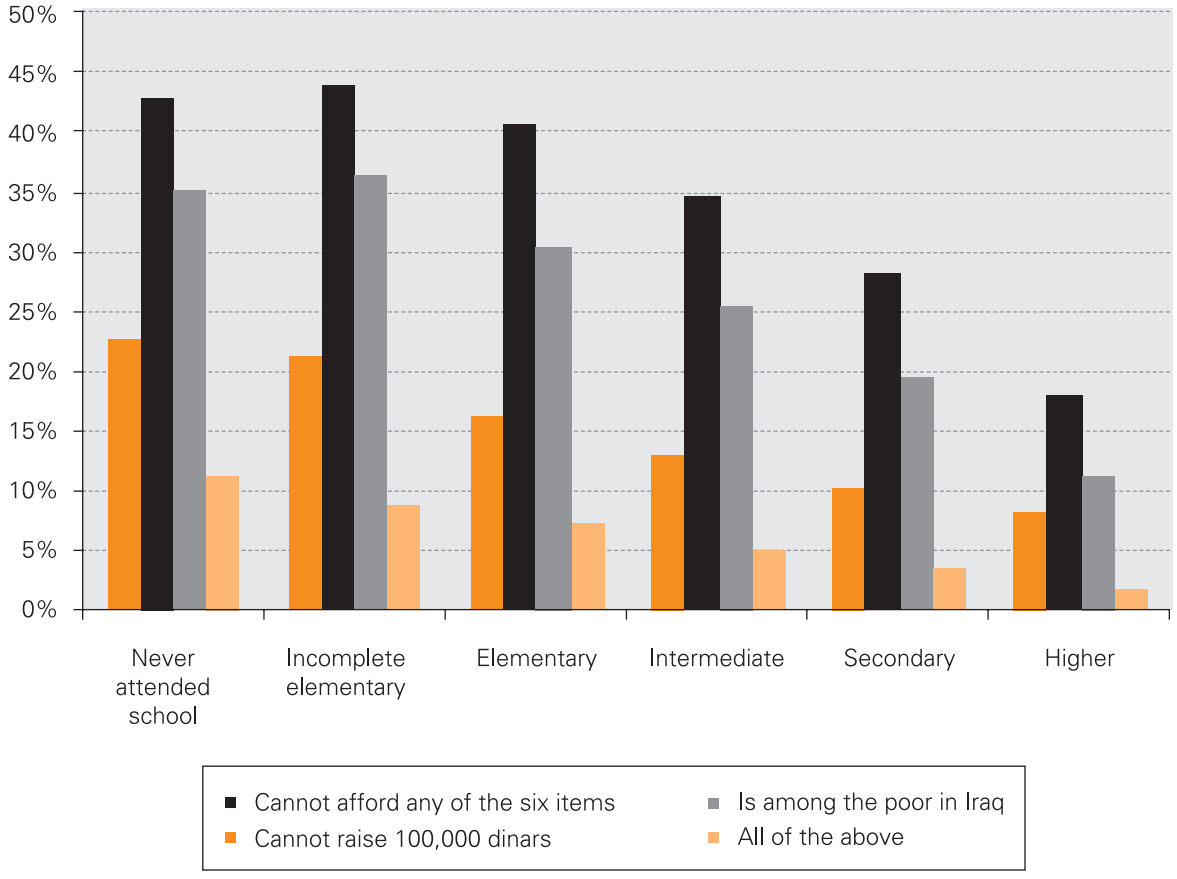


Figure 84: Subjective poverty measures in percentage of households, by education of household head



median per capita income is highest. The northern governorates have both the highest proportion of households self-classifying as poor (40 percent compared to a national average of 28 percent) and households that cannot afford any of the six items listed in the affordability index (28 percent against the national average of 16 percent). There are at least two possible causes of this discrepancy between the objective income measure of well-being and the subjective measures. First, the currency reform may have led to an inflation of both incomes and prices in the Kurdish areas, so that the higher incomes do not give any higher purchasing power. The second possibility is that there is a perception in the Kurdish areas (and possibly also in the rest of Iraq) that these areas are poorer, and that this perception overrides the objective situation of households when they are asked to self-classify.

While demographic income disparities were hard to identify, there is a clear difference between male- and female-headed households with respect to subjective poverty; however the age of the household's head does not play any role. Among female-headed households, 23 percent self-classify as "among the poor in Iraq," compared to 15 percent of male-headed households. As pointed out above, the apparent income equality may be caused by technical choices made in the survey and, if this is the case, the subjective measures may give a more correct picture of the situation of female-headed households.

When we look at the socio-economic characteristics of households, we find that the labour market status of household members plays an important role in the households' subjective experience of poverty: 14 percent of households with no employed members are poor according to all three subjective poverty measures, versus 7 percent of households with self-employed household members, and 6 percent in households with at least one wage worker in the household (Figure 83). It therefore seems that the important factor is whether or not household members are working, while the distinction between formal and informal sector is less important. This is somewhat surprising, as we have seen that there are important income differences between these two groups.

Finally, findings show that the education of the household's head has a strong effect on the experience of poverty. Thirty-five percent of households whose head has never attended school self-classify as among the poor in Iraq, against 11 percent of households whose head has higher education. The trend is the same for the other subjective measures. As we have seen, household income increases with the education of the household's head, and this presumably contributes to reducing poverty in the high-education groups. Nevertheless, not all have high incomes, and some apparently fall into poverty. Furthermore, the education level of the household's head is linked with the status of the household, and it is possible that the households in the high-education groups have other expectations, and that they may have a subjective experience of poverty even if their income is higher than that of other households.

Appendix 1: Standard Errors

The results in this report are calculated from a sample of 21,668 responding households in all the governorates of Iraq. Had the survey been repeated or another sample drawn, a different set of households would have been interviewed leading to different estimates. The sampling errors presented below are measures of how large the expected differences may be for this survey due to sampling.

Sampling errors are not the only type of errors that affects the results of a survey, and they may in many cases be less important than non-sampling errors. Non-sampling errors encompass, for example, errors created by respondents forgetting or misrepresenting information; interviewer errors (such as incorrectly paraphrasing respondent's answers); mistakes during data entry; or mistakes in the listing of households. The total error of the survey is composed of both the sampling error and the non-sampling errors, thus the sampling error can only be considered a lower bound for errors.

Sampling errors can be interpreted quite easily. In two out of three samples, the true value lies within one standard error of the estimated value, and in nineteen out of twenty it will roughly lie within two standard errors of the estimated value. Accordingly, an interval of ± 2 standard errors around the sample estimate will nearly always contain the true value for the population. This interval is called the 95% confidence interval, and is presented in the tables below.

To give an example: It was found that the 24.8 percent of the total population was in the labour force at the time of the survey, with a standard error of 0.15 percentage points. This means that the 95% confidence interval is $24.8 \pm 1.96 \cdot 0.15$, i.e. a range from 25.5 to 25.1 percent.

In the section below, the following measures are presented as appropriate for the variable concerned:

- Estimate: May either refer to (i) the average value of the measure in question; or (ii) percentage: The percentage having the characteristic in question.
- Standard error: Standard error of the measures above.
- Design Effect: Sampling errors arise from two sources; the population variability and the sampling design. The sampling design affects sampling errors through the size of the sample, over and under sampling of particular sets of respondents, weights, clustering, and stratification. The Design Effect, or DEFF, is a measure of how the actual sample design influences the sampling errors compared to a simple random sample of the same size. It is computed as the ratio of the variance actually obtained to the one that would have been obtained had a simple random sample of the same size been drawn. (The variance is the square of the standard error.) The DEFF may be interpreted as follows: A simple random sample with a size of the actual sample size divided by the DEFF would have the same precision as the one obtained. Thus, if the DEFF is 2 and the estimate is based on 4,500 respondents, it is comparable in precision to a simple random sample of 2,250 respondents. If the DEFF is 1, the estimate has similar standard error to that which would be obtained with a simple random sample, and if it is less than one it is a more efficient estimate. The design effect calculated here takes account of stratification, clustering, weights, and disproportionate sampling.
- The coefficient of variation (CV, also called the relative error) is the standard error divided by its accompanying estimate. Thus, if the percentage in the labour force is 24.8 and the standard error is 0.15, the CV is 0.15/24.8=0.006. It is common to consider CVs below 0.05 as very good, but the evaluation of the CVs and the standard errors in general depends to a large extent on the purpose to which the estimate is put.
- Confidence interval: The confidence intervals presented are 95% confidence intervals as described above.

1. Population

				95% Confidence Interval			
		Estimate	Standard Error	Lower	Upper	Coefficient of Variation	Design Effect
Household size (mean)	All of Iraq	6,4	0,03	6,3	6,4	0,005	2,0
	Dahouk	6,7	0,10	6,5	6,9	0,015	0,3
	Nineveh	7,3	0,14	7,0	7,6	0,019	2,9
	Sulaimaniya	5,7	0,10	5,5	5,9	0,017	2,3
	Al-Tameem	5,9	0,11	5,7	6,1	0,019	1,3
	Erbil	5,9	0,07	5,8	6,1	0,013	0,8
	Diala	6,9	0,13	6,6	7,1	0,019	1,8
	Al-Anbar	8,0	0,17	7,6	8,3	0,022	2,0
	Baghdad	5,7	0,06	5,6	5,8	0,011	3,5
	Babil	7,5	0,12	7,2	7,7	0,017	1,5
	Kerbala	7,0	0,13	6,8	7,3	0,018	0,9
	Wasit	7,2	0,12	6,9	7,4	0,017	1,2
	Salahuddin	7,5	0,17	7,2	7,8	0,023	1,4
	Al-Najaf	6,0	0,10	5,9	6,2	0,016	1,0
	Al-Qadisiya	6,1	0,11	5,9	6,3	0,018	1,2
	Al-Muthanna	8,2	0,15	7,9	8,5	0,018	0,6
	Thi-Qar	6,7	0,12	6,4	6,9	0,018	2,1
	Missan	7,1	0,13	6,8	7,3	0,018	1,1
	Basrah	5,4	0,09	5,2	5,6	0,017	2,3
Gender of household head	Male household head	88,6	0,27	88,1	89,1	0,003	1,5
Marital status	Single	39,9	0,26	39,4	40,4	0,006	2,4
	Married	54,6	0,27	54,1	55,1	0,005	2,5
	Widowed	4,7	0,08	4,6	4,9	0,018	1,3
	Divorced	0,6	0,03	0,5	0,6	0,054	1,5
	Separated	0,2	0,02	0,1	0,2	0,103	1,6
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-

2. Housing and Infrastructure

				95% Confidence Interval			
		Estimate	Standard Error	Lower	Upper	Coefficient of Variation	Design Effect
Crowding	Crowding	9,6	0,25	9,1	10,1	0,026	1,6
Source for electricity	A network	96,5	0,21	96,1	96,9	0,002	3,0
	Private generator	1,0	0,10	0,8	1,2	0,102	2,2
	Shared generator	1,0	0,14	0,7	1,3	0,145	4,6
	Solar	0,8	0,07	0,6	0,9	0,090	1,4
	Other source	0,4	0,05	0,3	0,5	0,132	1,3
	Don't have electricity	0,4	0,07	0,3	0,6	0,157	2,4
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Stability of electricity supply	Stable	14,7	0,47	13,8	15,7	0,032	3,7
	Rather Unstable	6,8	0,33	6,2	7,5	0,048	3,5
	Unstable	78,0	0,51	76,9	78,9	0,007	3,2
	No electricity	0,5	0,07	0,3	0,6	0,158	2,4
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Improved sanitation	Improved	63,9	0,58	62,8	65,0	0,009	3,1
Connection to sewage system	Connected	36,9	0,85	35,3	38,6	0,023	6,7
Functioning sewage system	Few problems	17,5	0,66	16,3	18,9	0,037	6,5
	Frequent problems	16,0	0,57	15,0	17,2	0,036	5,2
	Always problems	3,3	0,30	2,7	3,9	0,091	6,1
	Not connected	63,1	0,85	61,5	64,8	0,013	6,7
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Stability of drinking water	Unsafe drinking water	8,9	0,40	8,1	9,7	0,045	4,4
	Stable safe drinking water	60,7	0,82	59,1	62,3	0,014	6,2
	Unstable safe drinking water	30,4	0,77	28,9	31,9	0,025	6,2
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-

2. Housing and Infrastructure cont.

		Estimate	Standard Error	95% Confidence Interval Lower	95% Confidence Interval Upper	Coefficient of Variation	Design Effect
Source for drinking water is reliable	Yes, almost no problems	35,1	0,76	33,6	36,6	0,022	5,5
	Problems from time to time	32,2	0,64	31,0	33,5	0,020	4,1
	Weekly problems	5,4	0,26	4,9	5,9	0,049	2,9
	Daily problems	27,3	0,76	25,8	28,8	0,028	6,3
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Time to water source	In dwelling	78,2	0,58	77,0	79,3	0,007	4,3
	Less than 10 minutes	13,1	0,45	12,3	14,1	0,034	3,9
	10 to 30 minutes	6,9	0,35	6,3	7,6	0,051	4,2
	30 to 60 minutes	1,3	0,16	1,0	1,7	0,123	4,3
	More than one hour	0,5	0,08	0,3	0,7	0,172	3,1
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Water source	Safe and stable first source	60,7	0,82	59,0	62,3	0,014	6,2
	Piped to dwelling	3,1	0,22	2,7	3,6	0,071	3,5
	Other piped water	0,7	0,11	0,5	1,0	0,157	3,9
	Public tap	0,7	0,09	0,6	0,9	0,116	2,2
	Open well	2,5	0,21	2,1	2,9	0,086	4,1
	Covered Well/borehole	0,7	0,08	0,5	0,8	0,119	2,1
	Tank-truck	4,9	0,25	4,4	5,4	0,051	2,8
	Unsafe natural source	16,9	0,57	15,8	18,0	0,034	5,1
	No secondary source	6,0	0,27	5,4	6,5	0,046	2,9
	Other	3,9	0,24	3,5	4,4	0,060	3,2
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Safe second source of drinking water	Safe and stable first source	60,7	0,82	59,0	62,3	0,014	6,2
	Safe second source	10,1	0,38	9,4	10,8	0,037	3,4
	Unsafe second source	23,3	0,65	22,0	24,6	0,028	5,2
	No second source	6,0	0,27	5,4	6,5	0,046	2,9
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
The kind of road leading up to the dwelling	Paved road	42,7	0,84	41,1	44,3	0,020	6,2
	Partly paved road	14,5	0,57	13,4	15,6	0,039	5,6
	Gravel road	4,0	0,24	3,6	4,5	0,059	3,2
	Dirt road	38,3	0,74	36,8	39,7	0,019	5,1
	Other type of road	0,5	0,08	0,4	0,7	0,163	2,9
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Access for emergency vehicle	Access	80,1	0,57	78,9	81,2	0,007	4,5

2.1 Security questions in housing chapter

				95% Confidence Interval			
		Estimate	Standard Error	Lower	Upper	Coefficient of Variation	Design Effect
Damages to dwelling	Damages from military activity	4,5	0,26	4,0	5,1	0,057	3,3
	Damages from looting	0,3	0,05	0,3	0,5	0,136	1,4
	Damages for other reasons	5,7	0,25	5,2	6,2	0,044	2,6
	No damages	89,5	0,39	88,7	90,2	0,004	3,4
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Dwelling has been looted since the war in 2003	Dwelling has been looted	2,5	0,14	2,2	2,8	0,056	1,7
Frequency of shooting in neighbourhood	Every day	37,0	0,69	35,7	38,4	0,019	4,5
	Several times a week	22,8	0,56	21,8	23,9	0,024	3,8
	Less than several times a week	19,1	0,52	18,1	20,1	0,027	3,8
	Nerver	21,1	0,46	20,2	22,0	0,022	2,7
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Firearms for protection	Posesses firearms for protection	27,8	0,49	26,9	28,8	0,017	2,6
Member of household has been a victim of crime	Household member been crime victim	1,3	0,09	1,1	1,5	0,076	1,6
Prefered help when crime affects member of household	Relatives, friends and neighbours	36,8	0,63	35,6	38,1	0,017	3,7
	The police	51,4	0,64	50,2	52,7	0,012	3,5
	The American/British force	0,3	0,05	0,2	0,4	0,176	1,9
	Private security company	0,0	0,01	0,0	0,0	0,676	0,8
	Community leaders	1,0	0,10	0,8	1,2	0,098	2,1
	Religious leaders	0,7	0,08	0,6	0,9	0,111	2,0
	Local militias	0,2	0,03	0,1	0,2	0,175	1,1
	The Head of the family	7,4	0,28	6,8	7,9	0,037	2,4
	No one to turn to	2,1	0,16	1,8	2,4	0,077	2,7
	Others	0,1	0,03	0,1	0,2	0,279	1,5
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Forced change of residence	Forced change of recidence	5,4	0,23	5,0	5,9	0,042	14,7

3. Health

		Estimate
Weight for age grouped (general malnutrition)	Severe undernutrition	2,6
	Undernutrition	9,1
	Normal	86,7
	Overnutrition	0,8
	Severe overnutrition	0,7
	Total	**100,0**
Height for age grouped (stunting)	Severe undernutrition	7,7
	Undernutrition	14,9
	Normal	74,8
	More than 2 z-scores	1,5
	More than 3 z-scores	1,0
	Total	**100,0**
Weigh for height grouped (acute malnutrition)	Severe undernutrition	1,9
	Undernutrition	5,6
	Normal	88,4
	Overnutrition	2,3
	Severe overnutrition	1,8
	Total	**100,0**
Grouped Mid Upper Arm Circumference	Red	8,2
	Yellow	8,9
	Green	83,0
	Total	**100,0**
Suffering from illness	Suffering from illness	8,3
Cause of health problem	UXOs/mines	0,6
	Combat operations	1,0
	Imprisonment	1,1
	Shelling/bombing	1,7
	Other war- related events	5,6
	Trafic accidents	2,1
	None of these	88,0
	Total	**100,0**
External consultations during injury	Did seek external help	82,6
Main reason for not seeking help or advice	Was not ill enough to need help	28,6
	Can not afford treatment	17,9
	There are no appropriate medical facilities nearby	3,9
	Treated self with traditional medicines (incl. herbs)	8,4
	Treated self with modern medicines without consultation	34,4
	Had too much work, was too busy	2,9
	Could not reach hospital due to war or warlike events	0,4
	Other reason	3,5
	Total	**100,0**
Place of consultation	Public clinic	24,5
	Private clinic	50,2
	Public hospital	16,0
	Private hospital	1,4
	NGO clinic	1,7
	NGO hospital	0,2
	Coalition forces health care	0,0
	Pharmacy	4,2
	At home	1,1
	Other	0,6
	Total	**100,0**

	95% Confidence Interval			
Standard Error	Lower	Upper	Coefficient of Variation	Design Effect
0,15	2,4	3,0	0,057	1,5
0,28	8,6	9,7	0,031	1,6
0,34	86,0	87,4	0,004	1,7
0,09	0,7	1,0	0,105	1,5
0,08	0,5	0,9	0,119	1,6
0,00	**100,0**	**100,0**	**0,000**	-
0,27	7,2	8,2	0,035	1,6
0,35	14,3	15,6	0,024	1,5
0,47	73,9	75,7	0,006	1,8
0,12	1,3	1,8	0,077	1,4
0,10	0,9	1,2	0,093	1,4
0,00	**100,0**	**100,0**	**0,000**	-
0,14	1,6	2,2	0,074	1,7
0,23	5,1	6,1	0,042	1,7
0,34	87,8	89,1	0,004	1,9
0,14	2,0	2,6	0,064	1,5
0,14	1,6	2,1	0,075	1,7
0,00	**100,0**	**100,0**	**0,000**	-
0,35	7,5	8,9	0,043	2,6
0,33	8,2	9,5	0,037	2,1
0,47	82,0	83,9	0,006	2,5
0,00	**100,0**	**100,0**	**0,000**	-
0,12	8,1	8,6	0,014	2,6
0,08	0,4	0,7	0,136	1,2
0,11	0,8	1,2	0,106	1,3
0,12	0,9	1,4	0,108	1,5
0,17	1,4	2,0	0,098	1,9
0,31	5,0	6,2	0,055	2,0
0,17	1,8	2,4	0,082	1,6
0,42	87,1	88,8	0,005	1,9
0,00	**100,0**	**100,0**	**0,000**	-
0,82	80,9	84,1	0,010	3,6
2,85	23,3	34,5	0,100	5,0
1,73	14,7	21,5	0,097	2,6
0,91	2,5	6,1	0,233	2,8
1,33	6,1	11,4	0,159	2,9
2,60	29,5	39,7	0,076	3,8
0,59	1,9	4,3	0,207	1,6
0,21	0,2	1,1	0,478	1,3
0,73	2,4	5,3	0,206	2,0
0,00	**100,0**	**100,0**	**0,000**	-
0,98	22,6	26,5	0,040	3,3
1,08	48,1	52,4	0,021	3,0
0,81	14,5	17,7	0,050	3,1
0,19	1,1	1,8	0,136	1,7
0,33	1,2	2,5	0,192	4,2
0,10	0,1	0,5	0,386	2,4
0,02	0,0	0,1	0,699	0,8
0,63	3,1	5,6	0,150	6,2
0,21	0,7	1,6	0,192	2,6
0,12	0,4	0,9	0,222	1,8
0,00	**100,0**	**100,0**	**0,000**	-

4. Education

		Estimate	Standard Error	95% Confidence Interval Lower	95% Confidence Interval Upper	Coefficient of Variation	Design Effect
Literacy	Literate	59,7	0,42	58,9	60,5	0,007	8,5
	Partly literate	13,4	0,20	13,1	13,8	0,015	3,9
	Illiterate	26,9	0,35	26,2	27,6	0,013	7,4
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Completed education	Never attended school	32,3	0,27	31,7	32,8	0,008	4,8
	Incomplete elementary	26,2	0,21	25,8	26,6	0,008	3,4
	Elementary	21,1	0,18	20,7	21,4	0,008	2,7
	Intermediate	8,3	0,13	8,1	8,6	0,015	2,9
	Secondary	5,6	0,11	5,4	5,8	0,020	3,4
	Higher	6,5	0,16	6,2	6,9	0,024	6,0
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Access to elementary school in minutes	Less than 15 minutes	75,6	0,64	74,3	76,8	0,008	4,8
	15 to 30 minutes	18,2	0,54	17,2	19,3	0,030	4,3
	30 minutes or more	6,2	0,31	5,6	6,8	0,050	3,7
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Access to secondary school in minutes	Less than 30 minutes	77,4	0,60	76,1	78,5	0,008	4,5
	30 to 60 minutes	17,5	0,53	16,5	18,6	0,030	4,2
	60 minutes or more	5,2	0,27	4,6	5,7	0,053	3,3
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
enrolment in primary school	Enrolled	15,4	0,14	15,1	15,6	0,009	2,2
enrolment in intermediate school	Enrolled	4,8	0,08	4,7	5,0	0,017	2,1
Attended school during most of last 30 days	Attended school during most of last 30 days	97,8	0,16	97,5	98,1	0,002	4,0
	Was absent from school during most of last 30 days	2,2	0,16	1,9	2,5	0,071	4,0
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-

5. Labour Force

				95% Confidence Interval			
		Estimate	Standard Error	Lower	Upper	Coefficient of Variation	Design Effect
Labour force participation	Not in the labour force	35,8	0,19	35,4	36,2	0,005	2,3
	In the labour force	24,8	0,15	24,5	25,1	0,006	1,8
	Below 15 years of age	39,4	0,22	38,9	39,8	0,006	2,9
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Grouped business main job	Agriculture, hunting and forestry	15,8	0,56	14,7	16,9	0,035	8,5
	Fishing	0,4	0,10	0,2	0,6	0,253	9,1
	Mining and quarrying	0,3	0,04	0,2	0,4	0,154	2,3
	Manufacturing	6,1	0,19	5,8	6,5	0,032	2,4
	Electricity, gas and water supply	9,3	0,28	8,7	9,8	0,030	3,3
	Wholesale and retail trade; repairs	18,1	0,33	17,5	18,8	0,018	2,6
	Hotels and restaurants	1,1	0,08	1,0	1,3	0,068	1,9
	Transport, storage and communications	8,7	0,22	8,3	9,2	0,026	2,3
	Financial intermediation	0,4	0,04	0,3	0,4	0,114	1,7
	Real estate, renting and business activities	0,9	0,07	0,8	1,0	0,075	1,9
	Public administration and defence	15,5	0,33	14,8	16,1	0,022	3,1
	Education	7,1	0,21	6,7	7,5	0,030	2,4
	Health and social work	1,9	0,10	1,7	2,1	0,053	2,0
	Community, social and personal services	3,0	0,14	2,7	3,2	0,047	2,5
	Private households with employees	0,4	0,05	0,3	0,5	0,119	2,1
	Extra-territorial organizations and bodies	0,1	0,02	0,1	0,1	0,233	1,6
	Unknown	11,0	0,28	10,5	11,6	0,025	2,8
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Occupational group, main job	Armed forces	1,3	0,11	1,1	1,5	0,085	3,4
	Legislators, senior officials and managers	0,7	0,05	0,6	0,8	0,076	1,5
	Professionals	11,8	0,31	11,2	12,5	0,026	3,4
	Technicians and associate professionals	2,6	0,12	2,4	2,9	0,047	2,2
	Clerks	3,3	0,13	3,1	3,6	0,039	1,9
	Service workers and shop and market sales workers	18,7	0,32	18,1	19,3	0,017	2,5
	Skilled agricultural and fishery workers	15,9	0,56	14,8	17,0	0,035	8,4
	Craft and related trades workers	14,4	0,32	13,8	15,1	0,023	3,1
	Plant and machine operators and assemblers	10,2	0,23	9,8	10,7	0,023	2,1
	Elementary occupations	10,2	0,30	9,7	10,9	0,029	3,5
	Unknown	10,7	0,28	10,2	11,2	0,026	2,9
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-

5. Labour Force cont.

				95% Confidence Interval			
		Estimate	Standard Error	Lower	Upper	Coefficient of Variation	Design Effect
Employer	Government company	28,7	0,47	27,8	29,6	0,017	3,6
	Local governmet	0,3	0,04	0,2	0,3	0,139	1,7
	Private company	48,8	0,53	47,8	49,9	0,011	3,7
	Cooperative	0,2	0,05	0,2	0,4	0,192	3,0
	Joint sector	2,7	0,18	2,3	3,0	0,069	4,2
	Iraqi Army	0,7	0,06	0,6	0,8	0,087	1,7
	Family business	13,2	0,49	12,3	14,2	0,037	6,7
	NGO	3,7	0,22	3,3	4,1	0,061	4,6
	Private household	0,9	0,13	0,7	1,2	0,142	6,2
	Other	0,7	0,09	0,6	0,9	0,119	3,4
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Employer, main job	Local or central government, governmental companies	10,7	0,18	10,3	11,0	0,017	2,9
	Private company	18,3	0,21	17,9	18,7	0,011	2,5
	Cooperative or joint sector	1,1	0,07	1,0	1,2	0,066	4,1
	Iraqi Army	0,2	0,02	0,1	0,2	0,104	1,6
	Family business	4,9	0,20	4,6	5,3	0,040	7,2
	NGO	1,4	0,08	1,2	1,5	0,061	4,5
	Private household	0,4	0,05	0,3	0,5	0,142	6,2
	Other	0,3	0,03	0,2	0,3	0,119	3,4
	Unemployed	4,3	0,12	4,1	4,5	0,027	2,9
	Not in the labour force	58,6	0,23	58,1	59,0	0,004	1,9
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Employer, main job December 2002	Local or central government, governmental companies	28,2	0,50	27,2	29,2	0,018	3,4
	Private company	45,7	0,55	44,6	46,7	0,012	3,3
	Cooperative or joint sector	3,5	0,21	3,1	3,9	0,061	3,7
	Iraqi Army	3,2	0,16	2,9	3,6	0,050	2,3
	Family business	12,6	0,50	11,7	13,7	0,040	6,3
	NGO	3,2	0,19	2,8	3,6	0,061	3,4
	Private household	1,4	0,16	1,1	1,7	0,111	4,8
	Other	1,9	0,14	1,6	2,2	0,076	3,1
	Missing	0,3	0,04	0,2	0,4	0,161	2,0
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Labour force status	Unemployed	10,5	0,28	10,0	11,1	0,026	2,9
Labour force status (Relaxed definition)	Unemployed	18,4	0,33	17,8	19,1	0,018	2,8

6. Income

		Estimate	Standard Error	95% Confidence Interval Lower	95% Confidence Interval Upper	Coefficient of Variation	Design Effect
Is able to raise 100,000 Iraq dinars within a week	It would be raised by using own savings	21,5	0,45	20,7	22,4	0,021	2,6
	It would be raised with some help from others	42,5	0,52	41,5	43,5	0,012	2,4
	It could be raised, but it s doubtful	8,4	0,27	7,8	8,9	0,033	2,1
	It would be impossible to raise	27,6	0,51	26,6	28,6	0,018	2,8
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Period when economic stuation became difficult	Before UN sanctions	49,1	0,87	47,4	50,8	0,018	2,4
	Since UN sanctions	41,8	0,85	40,2	43,5	0,020	2,4
	Since the war in 2003	6,0	0,34	5,4	6,8	0,057	1,7
	The economic situation is not difficult	3,0	0,31	2,4	3,7	0,104	2,7
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Receiving food rations	Is receiving food rations	96,5	0,30	95,9	97,0	0,003	5,7
Number of income sources 2004	Only one source of income	18,2	0,49	17,3	19,2	0,027	3,5
	Two sources of income	65,6	0,51	64,6	66,6	0,008	2,4
	Three or more sources of income	16,2	0,34	15,5	16,8	0,021	1,8
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-
Number of income sources 2003	Only one source of income	7,3	0,27	6,8	7,9	0,037	2,3
	Two sources of income	68,5	0,44	67,7	69,4	0,006	1,9
	Three or more sources of income	24,1	0,42	23,3	25,0	0,017	2,1
	Total	**100,0**	**0,00**	**100,0**	**100,0**	**0,000**	-

Appendix 2: Technical Characteristics of the Living Conditions Survey Sample

This section describes the sample of the Living Conditions Survey. Its main aim is to document the sampling procedures and the weights used.

Overview of the sample

The main design characteristics for the Living Conditions Survey sample are as follows:

1. *Population:* The population selected for this study were all households residing in Iraq, with the exception of the population residing in nomadic areas.
2. *Sample size:* The budget allowed for a sample of 22,000 households.
3. *Allocation:* The survey should be able to provide statistics broken down by urban and rural areas, by the regions of Iraq and in each governorate. One-thousand one hundred households were selected for interview, with the exception of Baghdad, where 3,300 households were selected.
4. *Sample frame:* For the 15 Southern governorates, the sample frame was based on the 1997 census. In the governorates of Sulaimaniya, Erbil, and Dahouk, the sample frame is developed based on information provided by the statistical office in the governorate.
5. *Primary sampling units:* Primary sampling units (PSUs) were majalas and blocks, which were merged into units of between 70 and 200 households before selection.
6. *Stratification:* The PSUs were explicitly stratified by governorates, and urban and rural status within the governorate. The sample was further implicitly stratified by district (qadha) and municipality (nahyia), as the lists of PSUs were sorted according to these characteristics, and the PSUs drawn as a systematic linear sample within each strata. Due to large size variations within the first stage units in Erbil and Dahouk, some large units were considered strata.
7. *Re-listing:* A sketch map was created for each selected PSU that listed all households within the PSU. Ten households were then selected in each PSU, with linear systematic sampling.
8. *Respondents:* The questionnaire calls for one respondent who answers for the household at large, as well as interviews with all ever-married women aged 15-54.

Survey population

The target population for the Living Conditions Survey were all residents in Iraq during spring and summer of 2004. The sample is based on residency rather than citizenship; thus it was probable for any household living within the borders of Iraq at the time of the survey to be included in the survey. For practical purposes, we have chosen not to include the 37 areas with predominantly nomadic population, as sampling and fieldwork in these areas was deemed very difficult within the short timeframe of the fieldwork. According to the census, the nomadic population consisted of only 2,266 households, or 0.09% of the population, hence it is not believed that this exclusion gave any systematic bias to the data.

Allocation

In order to allow for reporting of statistics for each of the Iraqi Governorates, the sample was distributed equally on each governorate, with a sample take of 1,100 households in each. Due to the relative importance of Baghdad in terms of population size, the sample was somewhat larger, with 3,300 households.

Consequently, the sample of the Living Conditions Survey is not self-weighting for Iraq at large, but is more or less self-weighting within each governorate. The section below provides information on use and computation of sample weights.

The Sample Frame

The Living Conditions Survey sample is based on four different sample frames. For the 15 Southern governorates, the sample frame is derived from the 1997 census of Iraq.

In the northern governorates, no census exists. Consequently, in the case of Sulaimaniya, Erbil, and Dahouk, the sample frame is based on information provided by the governorates' statistical office, which have drawn maps and estimated the population size of all parts of the governorates. For some PSUs in Erbil and Dahouk, population estimates were not available, as it was not possible to establish whether the refugee population had returned to these areas. Such PSUs were given an initial population count of 20 households in the sample frame.

Some omissions in the frames were unavoidable. Areas that have been inhabited after the 1997 census are not included in the survey. One important such area is the marsh areas in the south, where the original inhabitants moved in after the recent war. The internally displaced population is covered to the extent that it resides in housing that existed in the 1997 census or newly built housing within the 1997 census enumeration areas. In the three northern governorates, all inhabited areas have been included insofar as possible. Indeed, the inverse problem is to some extent the case here: some villages that are listed in the frame turned out to be uninhabited.

Overlap between the sample frames within the northern governorates made it necessary to drop six selected PSUs from the sample, so that the total sample became 21,940.

The Primary Sampling Units

The available census data lists all households enumerated, organised by administrative units into several levels. The smallest spatial enumeration unit is usually a village or part of a village in rural areas, or a few houses along a street in urban areas. These areas include very few households—usually less than ten. They were merged into primary sampling units of generally 70-200 households before selection. This merging was done by computer, and consequently some PSUs consist of geographical areas that are not totally neighbouring.

In Sulaimaniya, Erbil, and Dahouk, the PSUs were derived from the maps and lists developed by the local statistical offices. In rural regions, the list of areas and locations include many with few inhabitants, and therefore some area units had to be merged before selection. In urban districts, the population size of the area units was often too large for effective mapping and listing, thus they were divided into smaller segments. In rural areas, the (merged) PSUs were selected as in the south. In urban areas, a large unit was selected (PPS) and a segment was selected by simple random selection.

The selection of PSUs was conducted with linear systematic PPS sampling within each stratum. Several alternative ways of selecting PSUs by PPS exist, but the linear systematic one was chosen because it tends to spread out the sample geographically and creates implicit stratification.

Segmenting of PSUs

In some cases it has been necessary to segment PSUs because of one of the following reasons:

- The PSU was too large (in terms of households) to enable practical mapping and listing of households
- The housing arrangements in the PSU were so complex that it was deemed prudent to only list a comparatively small geographic area
- The merging of the majalas and blocks led to the geographical spread out of the households, i.e., a PSU contains two villages that are very far from each other.

Mapping and listing of PSUs and segments

The selected PSUs were mapped and listed.

Selection of households

Linear systematic sampling was used to select households from the list of re-listed households. The sample is considered as a sample of households and not as dwellings.

In most cases, the mapping and re-listing would take place no more than 15 days before the main fieldwork. There was thus little non-response due to frame imperfection during fieldwork.

There was no substitution of selected PSUs or households.

Inclusion Probabilities and Weights

It follows from the above that the sample is in general a two-stage sample, although it sometimes includes three stages, in cases where segmenting has been carried out.

Notation

In order to describe the sample precisely and calculate inclusion probabilities, some notation needs to be introduced (Table 1). In general, the notation uses subscripts to indicate the sample stage and superscripts to indicate the source of the data used. Thus $N_{h,c}$ means the population in stratum h, cluster c.

Table 1: Notation used

Symbol	Meaning
N	Household count (initial estimate)
N^l	Household count as listed
N	Number of households Uppercase: Total numbers in population Lowercase: Sample numbers
M	Sample number of PSUs
P	Inclusion probability
h	Index of stratum
c	Index of PSU
f and i	Index of household (f used to indicate household in the sampling stage, i used to indicate the list of all households from 1 to n in the sample)
s	Index of segment (as a sampling stage)
Q	Index showing that a number is quick listed (for segmentation)

Selection of PSUs

The inclusion probabilities for a PSU *c* in stratum *h* is the following.

Equation 1: Inclusion probability for PSU

$$p_{h,c} = \frac{N_{hc} m_h}{N_h}$$

In cases where segmenting of PSUs have taken place, *it* must be accounted for in the inclusion probabilities. Since segments are selected PPS and there is only one selection, the inclusion probability for a segment is the size of the quick-counted segment divided by the size of the quick-counted PSU.

Equation 2: Inclusion probability for segment

$$p_{c,s} = \frac{N^q_s}{N^q_c}$$

Within each PSU, a fixed number of households is to be selected. The inclusion probability for a household f within a PSU *c* in stratum *h* is then the following:

Equation 3: Inclusion probability for household

$$p_{c,f} = \frac{n_{h,c}}{N^l_{h,c}}$$

Note that the listed number of households is used, rather than the initial estimate of households from the census. The $n_{h,c}$ is constant, 10, since the sample take in each cluster is always the same. Note that this is the case also if the cluster has been segmented. The overall inclusion probability for a household then becomes:

Equation 4: Overall inclusion probability for household

$$p_i = p_{h,c} \cdot p_{c,s} \cdot p_{c,f} = \frac{m_h N_{h,c} n_{h,c} n^q_{c,f}}{N_h N^l_{h,c} N^q_{h,c}}$$

Sampling weights

There are two types of sampling weights. The expansion weights creates estimates equivalent to real numbers in the population, while the relative weights retains the sample size and only adjusts the relative contribution of each unit of analysis (household or individual). The expansion weights are calculated as the inverse of the sampling probability, while the relative weights are calculated as the expansion weight divided by the mean of all the expansion weights.

Thus, the expansion sampling weight for household i is:
Equation 5

$$W_i^e = \frac{1}{P_i}$$

The relative sampling weight is then:
Equation 6

$$W_i^r = \frac{W_i}{\frac{\sum W_i^e}{n}}$$

In the tabulations in this report only expansion weights are used.

Weight adjustment and estimation weights

In order to maintain consistency with the population estimates of COSIT, the sample has been post-stratified so that the expanded population size matches the 2004 mid-year estimate of COSIT (27,139,585 individuals). This has been done on the governorate level. It is likely that this post-stratification somewhat overestimated the population of Iraq.

If each domain (governorate) are numbered d=1… D, and the COSIT estimates for governorate *d* is C_d and *individuals* are labelled i from 1 to n within each governorate then the estimation weights are:
Equation 7

$$W_{d,i}^{est} = \frac{W_{d,i}^e C_d}{\sum_{i=1}^{n} W_{d,i}^e}$$

Since there is no selection of individuals in this sample (they are included by virtue of their household being included), the household weight is then the same as that of the individual members of the household. This results in a household count of 4,252,540.

Table 2: Allocation of PSUs to the governorates

	Number of PSUs in frame				Number of households in frame	
	Urban	Rural	Nomad	Total	Urban	Rural
Nineveh	1,607	707	6	2,320	183,570	97,519
Al-Tameem	726	179		905	80,810	25,642
Diala	587	568		1,155	67,870	75,175
Al-Anbar	558	393	8	959	65,283	48,098
Baghdad	6,381	437		6,818	714,627	63,421
Babil	694	507	1	1,202	79,145	66,044
Kerbala	478	166	2	646	54,053	22,826
Wasit	481	266	2	749	55,207	37,984
Salahuddin	472	427		899	54,153	53,400
Al-Najaf	635	173		808	71,816	25,479
Al-Qadisiya	444	239	3	686	52,043	37,561
Al-Muthanna	227	186	12	425	26,885	24,675
Thi-Qar	748	375	1	1,124	85,704	53,036
Missan	446	165	1	612	50,711	24,760
Basrah	1,429	307	1	1,737	163,097	37,518
Total south	15,913	5,095	37	21,045	1,804,974	693,138
Sulaimaniya	298	702		1000	265,907	59,581
Erbil	119	1114		1233	169916	51312
Dahouk	136	523		659	75,772	32,566

Notes:
In Erbil, Dahouk and Sulaimaniya no distinction was made between nomadic and non-nomadic population.

Of the original 136 urban PSUs in Dahouk, 24 were selected with certainty and split into two or more segments. A varying number of households (depending on the size of the unit) were selected within each segment in order to bring the household total to 1,100.

In Erbil 27 urban PSUs were selected with certainty and segmented as in Dahouk.

Number of households in frame			Percent households		Allocation (# of PSUs)		
Nomad	Total	Total not including nomads	Percent urban	Percent rural	Urban	Rural	Total
125	281,214	281,089	65,31	34,69	72	38	110
	106,452	106,452	75,91	24,09	84	26	110
	143,045	143,045	47,45	52,55	52	58	110
510	113,891	113,381	57,58	42,42	63	47	110
	778,048	778,048	91,85	8,15	303	27	330
17	145,206	145,189	54,51	45,49	60	50	110
25	76,904	76,879	70,31	29,69	77	33	110
7	93,198	93,191	59,24	40,76	65	45	110
	107,553	107,553	50,35	49,65	55	55	110
	97,295	97,295	73,81	26,19	81	29	110
121	89,725	89,604	58,08	41,92	64	46	110
1360	52,920	51,560	52,14	47,86	57	53	110
21	138,761	138,740	61,77	38,23	68	42	110
45	75,516	75,471	67,19	32,81	74	36	110
35	200,650	200,615	81,30	18,70	89	21	110
2266	2,500,378	2,498,112	72,25	27,75	1,264	606	1,870
	325,488	325,488	81,69	18,31	89	21	110
	221,228	221,228	76,81	23,19	80	26	106
	108,288	108,288	69,93	30,07	74	33	107

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