Iraq

Agriculture sector note



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ABBREVIATIONS

ACSAD	Arab Centre for the Study of Arid Zones and Dry lands
ARDI	USAID Agriculture Reconstruction and Development Program for Iraq
CoM	Iraq Council of Ministers
COSIT	Iraq Central Organization for Statistics and Information Technology
CWSR	Centre for Water and Soil Research
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	FAO Statistical Information System
FFS	Farmers' Field School
GCAS	Iraq General Company for Agricultural Supplies
GoI	Government of Iraq
ICARDA	International Centre for Agricultural Research in the Dry Areas
ICI	International Compact with Iraq
ID	Iraqi Dinar
IRRFI	International Reconstruction Fund Facility for Iraq
ISN	World Bank Interim Strategy Note
ITF	Iraq Trust Fund
JICA	Japan International Cooperation Agency
MDTF	Multi Donor Trust Fund
MFI	Micro Finance Institutions
MoB	Municipality of Baghdad
MoMPW	Ministry of Municipality and Public Works
MoA	Ministry of Agriculture
MoIM	Ministry of Industry and Minerals
MoPDC	Ministry of Planning and Development Coordination
MoSM	Ministry of State for Marshlands Affairs
MoT	Ministry of Trade
MoWR	Ministry of Water Resources
NARS	National Agricultural Research System

NDP	National Development Plan 2010–2014
PDA	Pilot Demonstration Area
PDS	Public Distribution System
PRS	Poverty Reduction Strategy
PRT	Provincial Reconstruction Team
SBAR	State Board for Agricultural Research
SIDA	Swedish Development Agency
SOE	State Owned Enterprise
UNDAF	United Nations Development Assistance Framework
UNDG	United Nations Development Group
UNIDO	United Nations Industrial Development Organization
USAID	US Agency for International Development
USDA	US Department of Agriculture
WFP	World Food Programme
WHO	World Health Organization
WTO	World Trade Organization
WUA	Water Users' Association

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FOREWORD

This Agricultural Sector Note is based on a desk study prepared on request of the World Bank. The Note reviews available information on the performance of Iraqi agriculture, government policies, development partners' programmes, constraints, potential and comparative advantages. The Note outlines areas for future cooperation in the agriculture sector between the World Bank and the Government of Iraq (GoI), including possible areas for technical assistance.

The Note is based on available documentation which might be outdated and/or not reflecting current GoI views and recent progress made on technical, institutional, programmatic and policy issues. Therefore, the information and conclusions summarized in the report are to be considered very preliminary and eventually subject to substantial revision.

The background information it contains, makes it valuable for all practitioners interested in Iraqi agriculture.

EXECUTIVE SUMMARY

After years of war and social unrest, Iraq is facing a number of challenges that are common to all sectors of the economy, amongst which the most important are the deteriorated state of the social and economic infrastructure, the disruption of the social fabric of the society and the increased dependence on oil incomes –representing two thirds of the GDP and almost all exports and fiscal revenues. The contribution of agriculture to GDP has been declining in the last decade from 9 percent in 2002 to 3.6 percent in 2009, following the problems caused by the war, the social unrest and institutional and economic issues. The security situation and rural poverty have contributed to this decline with an outflow of people from the countryside to the urban areas seeking employment and economic opportunities for displaced families.

Agriculture is mostly practiced on small farming units and it is a low input–low output system. Crop yields are low by any comparative standards as farmers tend to minimize costs concerned with land preparation, planting, weeding and harvesting.

Crop production is the major source of income for the majority (75 percent) of farmers in Iraq, while the rest depend on livestock or mixed crop and livestock enterprises. Grains, primarily wheat and barley, are Iraq's main crops in the north and central rainfed areas. In central and southern Iraq, where agriculture depends mainly on irrigation from the Tigris and Euphrates rivers, mixed farming systems are predominant. Dates are a major cash and food crop with fruit trees interplanted in date palm orchards. Vegetables, mainly tomatoes and potatoes, are important irrigated crops. Livestock raising is extensively practiced and inland fisheries and backyard poultry raising are valuable as a source of protein and income for the rural population.

Irrigation is extensively practiced in the central and southern regions. The total managed water area is estimated at around 3.5 million ha all of it equipped for full or partial control irrigation. The agriculture sector is the main consumer of water with 85 percent of the total.

The National Development Plan (NDP, 2010–2014) aims at developing a stable, competitive and sustainable agriculture to enhance food security and rural incomes, generate rural employment, diversify economic growth and protect the natural environment. It emphasizes development of social and economic infrastructure, research and genetic improvements of plants and livestock and support to the private sector by developing adequate financial markets and credit policies; it draws attention to the problems of international water rights and water allocation between competing uses, to the integrated and efficient management of water resources, to the need for increasing agricultural productivity through the introduction of improved technologies and modern extension methods, to the need for considering a rural development approach to raise the economic and social level of the rural population and to the priority for legal reforms concerning land management and tenure.

Within the above, there would be initiatives to facilitate the achievement of specific sector goals such as reviewing subsidies that distort market prices and discourage investments in agriculture, the reform of the Public Distribution System (PDS), capacity building at all levels and support to agricultural producer groups and agribusinesses.

Donors have articulated their coordinated response to the Iraq emergency and rehabilitation programme through the International Reconstruction Fund Facility for Iraq (IRFFI) which is now closing with the implementation of the last batch of projects and the International Compact with Iraq (ICI) which was set up in 2007 for a 5 years period, to coordinate commitments from both Iraq and the international community for achieving peace, sound governance and economic reconstruction. Both initiatives for donors' coordination are being replaced by the first Iraq United Nations Development Assistance Framework (UNDAF) for 2011–2014.

The World Bank has approved since 2003 a total of USD 990 million in financing for Iraq. Numerous capacity building activities and knowledge products covering different sectors have been delivered since 2003. Of interest in this context: a report on Iraq's Public Distribution System (2005), a Study on State–Owned Enterprise Reform (2004) and a report on Water Resources Assistance Strategy (2006).

Since March 2003, USAID has invested approximately USD 6.6 billion on programmes designed to stabilize communities, foster economic and agricultural growth and build the capacity of national, local, and provincial governments to respond to the needs of the Iraqi people. Community action programmes have helped communities to identify and prioritize local needs and Provincial Reconstruction Teams have been set up to provide technical assistance to support microfinance institutions (MFIs), agribusiness programmes, value chains and markets and marketing of agricultural products. Provincial Reconstruction Teams operate in eight of the 18 provinces. USDA is committed to helping Iraqi farmers "generate higher incomes" through programmes in "agribusiness, agricultural extension, and policy engagement." USDA has placed U.S. agricultural advisors on Provincial Reconstruction Teams (PRTs) and is the lead agency for U.S. government agricultural policy guidance to the Government of Iraq.

Under the IRFFI, FAO coordinated the UN cluster for agriculture, food security, environment and natural resources management and has recently become the lead agency of the agricultural sector under the new arrangements. The focus areas of FAO work have been and are, inter alia: rehabilitation of water supply systems; restoration of the veterinary services; promotion of employment generation developing small–scale income–generating cottage industries; rebuilding food safety and food processing capacity; sustainable development of inland fisheries; rehabilitation and development of the national seed industry; and date palms development.

Iraq faces a number of challenges with a direct impact on all the economic sectors of the country. These are related to the security situation, weak institutions, the deterioration of basic services and of social indicators in areas such as health and education, widespread unemployment–about 50 percent of the work force according to some estimates –, and absolute poverty where more than 60 percent of the population depends on the government's rationed food basket. The issues facing the agricultural sector are part and parcel of the above picture and are structurally dependent on the prospects for economic growth, for a free market economy and the modernization of the state. Iraq agriculture is under increasing pressure to feed its population growing at an annual rate of more than 2.8 percent. The country will need much more than the current USD 5 billion to import basic food to meet the annual shortages–for as long as required by domestic production to achieve sustained growth.

The sector's low productivity and growth rates are attributable to a variety of issues and to past policies when the government maintained artificially low food prices through price and production controls and marketing restrictions. In addition, years of insufficient maintenance and funding have degraded agricultural services and physical infrastructure, particularly the irrigation network. During the recent conflicts, extensive looting damaged a range of government and private agricultural production and service facilities in central and southern Iraq, including research facilities, animal health and artificial insemination centres, poultry production industries, and plant quarantine units at the borders.

The highly subsidised "food basket" provided by the PDS has been an essential policy measure to ensure food security and avoid possible famine but subsidized food rationing on a national scale with imported food has had a negative impact on the local grain market with consequent depressing effects on producer prices and on agricultural sector investments.

Government policies in the agricultural sector have been characterized by the state determination to control and subsidize farm inputs (fertilizers, seeds, insecticides, farm equipment and machinery) and prices of strategic crops. The most important crop, wheat, has been the most controlled and the most affected by the lack of open markets.

Problems in irrigation are severe: they range from widespread deterioration of irrigation infrastructure to poor operation and maintenance of the systems, inefficient water use, soil salinity, weak institutional support and lack of regulatory framework for efficient use and pricing of irrigation water. Iraq will witness more shortages in water resources after Turkey and Syria develop their irrigation projects. No international water use agreement has been signed so far by the three countries.

Access to credit is difficult outside government ad hoc subsidized credit programmes: private capital investment resources are lacking, as are credit initiatives available to farmers. The near absence of institutional credit has made the cost of capital prohibitive for agricultural producers and discouraged private investment.

The capacity of institutions like the Ministry of Agriculture (MoA) and the Ministry of Water Resources (MoWR), to provide services to the sector has remarkably deteriorated over the past two decades. There is little institutional coordination and cooperation in agricultural planning and project implementation. The weak institutional support has translated into a drastic reduction of the performance and coverage of the research and extension services, animal health and artificial insemination centres, plant quarantine and disease control mainly due to lack of staff incentives and physical infrastructure. The non involvement of the beneficiaries in the setting of both the research and extension agenda is highly counterproductive for both.

Organizations at producer level exist but they are weak and ineffective. Years of conflict and social disruption have disintegrated the social fabric of the Iraqi rural society and the traditional customs of social rural life.

Because of the relative isolation of Iraq in recent decades, agribusiness and food and agricultural enterprises have not been able to benefit from international markets, modern production techniques and global trading standards. There are no incentives to invest in agricultural processing industries or value chains because of the complicated and outdated administrative and regulatory system, the considerable shortcomings of the public agencies that are in charge of the advisory and technical services, erratic price policies, inefficient marketing networks, very little market information and complicated and time consuming export/import procedures.

The land management and tenure legislation is inadequate. The land tenure regime is a major constraint and contributes to land degradation and to the low productivity and slow growth of the agricultural sector.

Excessive focus on urban and economic development and low awareness of the importance of the functions provided by aquatic ecosystems has progressively led to severe degradation of the natural resources and loss of biodiversity. The wars have contributed to further degradation of the environment and in the alluvial plains soil quality has been damaged by the deposits of large amounts of salt borne by irrigation overflows and wind and poor soil drainage. Desertification and soil erosion have reduced arable

lands.The problem of the Mesopotamian marshlands which have contracted significantly due to the lack of a sustainable water source are well known.

The agricultural information system needs restructuring and modernization to support GoI and the private sector for business planning, investment and development. There are significant sector specific "gaps" in statistical information, which hinder GoI from effectively developing agricultural policies and implementing agricultural interventions. There is no functional agricultural statistical system for producing accurate, relevant and timely statistics on crop, livestock and agro–industry production on a regular basis with standard statistical methodology.

Iraq will be dependent on imports for meeting domestic food demand for many years to come and it is not possible at present to predict which subsectors of the Iraqi agricultural economy will develop such characteristics as to enjoy comparative advantages on the international markets: however based on historical trends it may be possible to infer that promising sub–sectors for short–term expansion mainly include those with good export potential or which offer efficiency gains from import substitution. Fruits and vegetables imported from neighbouring countries are an obvious target and following production development and the introduction of quality controls, vegetable and fruits exports could also be envisaged, once local demand is satisfied. For dates, which have always been a traditional export, there should be no problems to increase exports provided work on improved varieties is continued and strengthened. Food grains and feedstuffs, meat and dairy products could become competitive both in terms of import parity prices (as imports substitution) or eventually, as in the case of meat and meat products, find a ready market in the neighbouring countries. For dairy and dairy products more specifically, there should be good potential for growth.

Comparative advantages will not emerge by isolated efforts but they will have to be assessed on the basis of regional and provincial characteristics. Any development programmes will have to be accompanied by social, economic and institutional reforms that would provide–at central and local level–the basic ingredients for sustainable growth. Thus the emphasis should be on defining comparative advantages on the basis of territorial characteristics

and not on the basis of a narrow assessment of technical potential and financial or economic comparative and competitive analysis for individual crops or subsectors.

The rehabilitation and development of the Iraqi agriculture is a medium/long term aim which can only be achieved through a coherent, coordinated effort based on two main pillars: Policy Improvements and Investment Projects including inter alia, rehabilitation of support services and capacity building.

The NDP goals for agriculture in Iraq are well defined but there are areas where policies designed to achieve these goals need to be translated into a clear regulatory framework with operational strategies responding to the priorities of the farmers and of the business community: i) changing the top down centralized planning approach to a bottom up decentralized identification of programmes and projects with farmers and the private sector in the driving seat; ii) improving inter-institutional cooperation in planning and implementing integrated rural development projects; iii) setting up legislation for promoting private investment in agriculture, iv) introducing a reform of the PDS and of government intervention in agricultural inputs distribution and price policy, v) setting clear guidelines for land management and tenure reforms, vi) developing new mechanisms for financing small and medium size farmers and agribusiness development, and vii) development of an adequate legislative and institutional framework which adapts the principles of the integrated water resources management concept to Iraq's specific context including water resources management, water pricing and charges and water users' associations.

External donors like the World Bank could play a key role in this respect. Potential areas for World Bank assistance could include Economic and Social Work (ESW) in support of NDP implementation focusing on some most critical aspects of the proposed reforms such as: inter-institutional coordination in agricultural and rural development, capacity building for agricultural sector planning, the formulation of an incentive framework for the private sector to invest in agriculture, agricultural credit, reform of the PDS and of the agricultural marketing and prices policy, land management and tenure and water resources management.

A Development Policy Loan (DPL) could also assist GoI in implementing the NDP reforms, taking into consideration the need for a progressive approach and to focus first, on those reforms on which the widest consensus from all stakeholders can be achieved.

An investment project, to proceed in parallel to the above DPL or a stand-alone operation, could aim at changing the traditional approach of the Iraq Government by adopting a broader rural and community driven development strategy which would: build on territorial comparative advantages; focus on capacity building at all levels, farmers, government services, the private sector; identify priorities with a bottom up approach and with rural communities in the driving seat; finance priority investments in infrastructure rehabilitation, introduce innovations in crop and livestock production technology, in farming systems, in marketing practices with emphasis on value chains; and adopt an holistic approach to development where improved policies, better infrastructure and agricultural services would work in synergy with the private sector for sustainable growth. Such a project could be initiated as a first phase in a few selected governorates. As a preliminary indication, technical opportunities for investments in a territorial–community driven project could include: irrigation for high value crops, date palms production development, fisheries, support services, livestock development and food safety.

Chapter 1 – The context

The Agriculture Sector

After years of war and social unrest, Iraq is facing a number of challenges that are common to all sectors of the economy: the deteriorated state of social and economic infrastructure, the disruption of the social fabric of the society and the increased dependence on oil which makes up for about two thirds of GDP and for almost all exports and fiscal revenues. Iraq is having some success in stabilizing its economy but much remains to be done to diversify its productive basis and improve the standards of living of its population. The agricultural sector has fallen further behind in the post-war period and has suffered from substantial damage to the irrigation and drainage infrastructure, to rural communications, from the looting of many facilities and the substantial weakening of the institutional framework.

The agriculture sector is still a major source of livelihood for the poor and food insecure and is the largest source of rural employment. The sector contribution to GDP (agriculture is the second contributor after oil revenues), declined from about 9 percent in 2002 to 3.3 percent in 2008 and 3.6 percent in 2009,[1] but it still provides 20 percent of employment. Population is about 32 million of which one third resides in rural areas and depends upon agriculture for their livelihoods.[2] Population growth rate is about 3 percent at the national level.

The poor performance of the agricultural sector and lack of employment perspectives[3] drive migration to the urban areas, generating pressure on service delivery and increasing urban poverty. The major cities are a destination both for people seeking economic opportunities and for displaced families.

1 Source: COSIT.
2 With the exception of the public service and the trade sector, agriculture is the main provider of employment opportunities in Iraq. The percentage breakdown of the urban and rural populations cannot be accurately assessed as those who possess land mostly live in the urban areas and commute between the two locations. In 2001 "rural holdings" were estimates at 90 percent of the total (COSIT).
3 Women support a growing share of agricultural works. The percentage of women in agricultural works in 2000 was more than 50 percent of the total number of workers in agriculture. According to FAO estimates, this percentage should now be about 60 percent, making women the main force in field works.

Of the total area of Iraq (43.7 million ha), 22 percent, i.e. 9.5 million ha is cultivable land, suitable for agriculture. Land actually under crops is about 5 million ha.[4] Agriculture is mostly practiced on small farming units. More than 80 percent of the farms have a total size of less than 10 ha and even these 10 ha are on average scattered over several different locations.

The general stagnation in agricultural productivity which has been a characteristic of Iraq's agriculture over the last years, has steadily increased dependence on imports to meet domestic food needs and has made Iraq a major importer of agricultural products. Total value of agricultural imports was USD 1762 million in 1985 and USD 4638 million in 2008[5]. Top import categories are wheat (about 3-4 million tons per year), cattle and chicken meat, rice, oils and fats, milk, tea, sugar. Value of main agricultural exports was USD 78 million in 1985 and USD 68 million in 2008. Top export categories were in 1985, dates, skins and other animal products and sugar. In 2008 the same, except that sugar exports were discontinued in the late 1990s.

Iraq is heavily dependent on imported food to satisfy local demand. FAO estimated the Import Dependency Ratio (IDR) for cereals in 2007 at 56 percent and at 76 percent in 2008 (in this year Iraqi wheat farmers experienced a 55 percent reduction in production due to severe drought[6]).

Crops and Livestock

Iraq's agricultural sector represents a small, but vital component of Iraq's economy. However, population growth combined with the need to produce more food from a limited and shrinking resource base of land and water have resulted in farming systems that tend to maximize short-term returns at the expense of long-term sustainability.

Existing agriculture is a low input/low output system. Crop yields are low by any comparative standards, which combined with low product prices result in small profit margins and marginal incomes for the farmers. Farmers use minimum inputs (fertilizers, pesticides, etc.) and tend to minimize operation costs related to

4 Including crops, meadows, and fallow.
5 Source: FAOSTAT.
6 Source: FAO Food Outlook, May 2008 and Iraq Food Prices Report, 2009.

land preparation, planting, weeding and harvesting. Under dry land production conditions and prevailing markets and prices, only interventions that increase production, without significantly increasing costs, and those that reduce market uncertainty are attractive to farmers.

Crop production is the major source of income for the majority (75 percent) of farmers in Iraq, while the rest depend on livestock or mixed crop and livestock enterprises. Most farming in Iraq entails planting and harvesting a single crop per year. In the rainfed areas, the winter crop, primarily grains, is planted in the fall and harvested in the spring. In the irrigated areas of central and southern Iraq, summer crops predominate. Double cropping, usually of vegetables, exists where irrigation water is available over more than a single season. The intensity of cultivation is usually of the order of 50 percent in the rainfed areas, because of the practice of leaving about half the arable land in fallow.

In terms of area cultivated, there are large variations between the years due to climatic and/or economic reasons. Wheat and barley are the main crops, followed by dates, maize and rice.

Rainfed farming is concentrated mainly in northern Iraq where cereals are the major crops in mixed wheat–barley–forage legumes cropping systems. In central and southern Iraq, where agriculture depends mainly on irrigation from the Tigris and Euphrates rivers and their tributaries, mixed farming systems are predominant. In

Crop Area ('000 ha)

Crops/years	1985	1990	1995	2000	2005	2009
Wheat	1540	1180	1535	1200	2550	1262
Barley	1357	1992	1389	1110	1063	1356
Rice (paddy)	53	79	175	100	107	55
Maize	21	69	63	73	174	114
Dates	105	124	168	110	50	120
Tomatoes	47	54	77	110	50	51
Watermelons	53	43	37	53	48	53
Eggplants	14	12	10	22	23	21
Potatoes	9	12	26	39	51	20

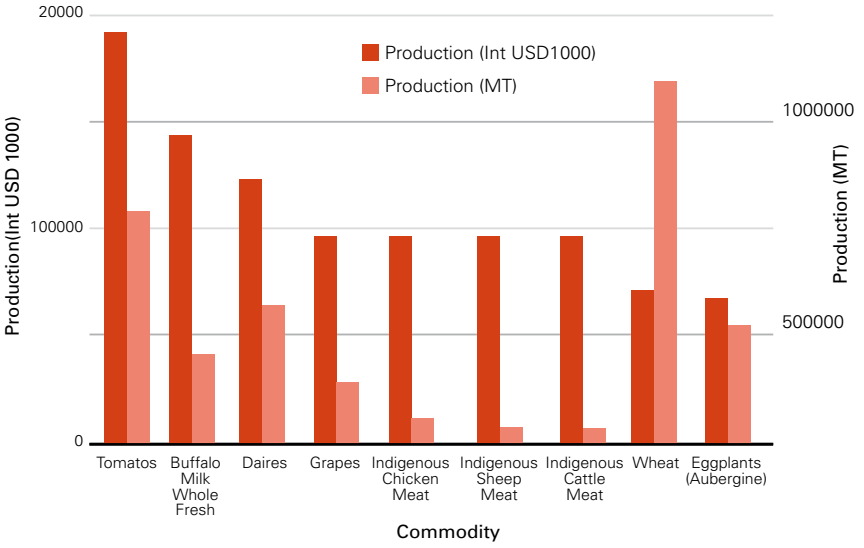
Source: FAOSTAT.

the central provinces, fruit trees, mainly citrus, are inter-planted in date palm orchards. Vegetables, mainly tomatoes and potatoes, are important irrigated crops.

Cereals, primarily wheat and barley, are Iraq's most important crop (approximately 80 percent of cultivated area). The north and central rainfed areas are the principal wheat producers. On average, farmers in Iraq cultivate about 3 million hectares of combined wheat and barley each year. Between 0.7 to 1 million hectares of wheat and 0.4-0.8 million hectares of barley may be irrigated each year (barley requires less water than wheat and it is more tolerant to soil salinity). According to Iraqi statistics[7], irrigated acreage has been increasing over the past decade, providing a buffer against periodic drought.[8]

Dates, of which Iraq produces eight distinct varieties, have long been a staple of the local diet. Until 1996, Iraq has been one of the three leading countries in terms of date palms planted area, number of trees, production and export. Although there is no agreement among

Top production - Iraq, 2008



7 COSIT

8 In 2008 Iraq has been experiencing one of the worst droughts of the past 10 years. Drought conditions have predominated the entire winter growing season and have severely impacted non–irrigated grain production in the northern regions. Acute dryness has also affected winter grain area and yield potential in several of the country's primarily irrigated governorates (Source: USDA).

various statistical sources, they all indicate that, until 1996, Iraq was second only to Iran in terms of planted area and it was the world leading country in terms of number of trees (about 22.3 million). Total production fluctuated between 500,000 and 600,000 tons. Exports were at their lowest level between 1995 and 2004 (around 25,000-40,000 tons) and are now recovering to 200,000-300,000 tons.[9]

Livestock (sheep and goats, cattle, camels, buffaloes), inland fisheries and backyard poultry raising are important as a source of protein and income for the rural population. Before the war, large state owned industrial enterprises[10] existed for dairy and poultry production around the main cities. Livestock production in the past represented 30-40 percent of the total value of agricultural production and contributed significantly to household nutrition.

Small ruminants, namely sheep and goat performances were severely reduced during the last two decades, in comparison with international and regional standards due to massive selling outside the Iraqi borders, loss of genetic potential and reduction in herd size. The small ruminant sector in Iraq also suffers from the lack of any kind of organization among the producers. It is now slowly recovering but is estimated to provide only 2gr. of domestically produced animal protein per capita per day as opposed to 18gr. pre–sanctions.[11]

Crop Production ('000 tones)

Crops/years	1985	1990	1995	2000	2005	2009
Wheat	1406	1196	1236	384	2228	1700
Barley	1331	1854	892	400	754	506
Rice (paddy)	149	229	315	60	309	173
Maize	41	172	90	55	401	238
Dates	390	545	470	650	615	507
Tomatoes	612	722	870	989	939	913
Watermelons	757	561	470	650	615	326
Eggplants	233	144	160	529	439	396
Potatoes	149	195	417	545	808	223
Milk	476	472	298	606	483	n.a.

Source: FAOSTAT.

9 Source FAOSTAT. There are noticeable differences between the various statistical sources.
10 About 3836 broiler farms, 113 layer farms, 62 parent stock farms, 71 hatcheries and 22 poultry slaughter houses existed in Iraq before the year 2003. Their number has now been reduced to less than 10 percent. Source: FAO.
11 Source: FAO.

Vegetable production is on the increase (about 10 percent of total cultivated area), particularly near urban centres, where a comparatively sophisticated marketing system has developed. Vegetable gardening usually employs relatively modern techniques, including the use of chemical fertilizers and pesticides–when they are available. Tomatoes are the most important crop. About 60 to 70 percent of vegetables consumption is supplied by imports from neighbouring countries.

Water Resources

Irrigation potential was estimated in 1990 at over 5.5 million ha, of which 63 percent in the Tigris basin, 35 percent in the Euphrates basin and two percent in the Shatt Al-Arab basin. Considering the soil resources, it is estimated that about six million ha are classified as excellent, good or moderately suitable for flood irrigation.

In 1997, the total irrigated area was estimated at 3.4 million ha, of which 87.5 percent obtained water from river diversion, 9.2 percent from rivers using irrigation pumps, 3.1 percent from artesian wells and 1.2 percent from spring sources.[12] Irrigation is used in the summer for rice, corn, dates, cotton, vegetables and fruits grown primarily in central and southern Iraq. Wheat and barley are the main irrigated winter crops.[13]

The agriculture sector is the main sector in consumption of water in Iraq. It is estimated that 85 percent of the water resources are used in agriculture and about 8 percent are used for other purposes, while the rest is lost, especially through evaporation.

Water losses in irrigation schemes, all over Iraq, are substantial. By and large, water is conveyed to farmers' fields through very poorly maintained distribution systems made of earth canals and ditches which suffer significant water losses because of infiltration, seepage or leakage. On-farm field application efficiency using the traditional surface gravity systems is assumed to be between 30–40 percent but is probably near 20 percent or less.[14]

12 Source: FAO AQUASTAT.
13 Winter irrigated wheat and barley production ranges from one third to fifty percent of the total according to different information sources.
14 Source: ARDI-Irrigation water assessment and priorities for Iraq, 2004

Geographic factors affect Iraq's water resources availability and use. Like all rivers, the Tigris and the Euphrates carry large amounts of silt downstream. This silt is deposited in river channels, in canals and on flood plains. Drainage is complicated by the flat nature of the terrain.[15] Most important, Iraq lies downstream from both Syria and Turkey on the Euphrates River and downstream from Turkey on the Tigris River. In the early 1970s, both Syria and Turkey completed large dams on the Euphrates and filled vast reservoirs causing a decrease in the river's flow and of irrigated areas along the Euphrates from 136,000 hectares to 10,000 hectares from 1974 to 1975. No agreements between Iraq, Turkey and Syria on Euphrates and Tigris international water use have yet been signed.[16]

For the above reasons, prospects for increasing irrigated areas should mainly be based on increases in efficiency and reduction of waste. Furthermore, "*… Iraq will witness more shortages in water resources and low quality after Turkey and Syria develop their irrigation projects. Turkey and Syria are aiming at planting more than 2.4 million hectares that will be irrigated from the Euphrates basin, and approximately one million hectares that will be irrigated from the Tigris. This will cause a deficiency in revenues (water availability) from the Tigris and Euphrates of more than 43 percent in 2015…*"[17]

The water level of both the Tigris and the Euphrates rivers has fallen by more than 60 percent over the last 20 years partially as a result of upstream water use and damming. Water deficiency may lead to a shortage of hydropower, desertification, dust storms, loss of

15 Baghdad, for example, although 550 km from the Persian Gulf, is only 34 meters above sea level. This slight gradient makes the plains susceptible to flooding and, although it facilitates irrigation, it also hampers drainage. The flat terrain also provides relatively few sites for dams.

16 There have been several attempts to establish international agreements between the three riparian states; however all have failed to achieve trilateral support. In1946, Turkey and Iraq signed the Treaty of Friendship and Neighbourly Relations, which covered the Tigris and Euphrates rivers. It established information sharing between both parties, permitted Iraq to build dams in Turkey on a case–by–case basis, and required Turkey to inform Iraq of any planned infrastructure along the rivers. In 1987, Turkey and Syria signed a one–page protocol determining the water flow of the Euphrates at the Turkey–Syria border; the agreement was reconfirmed in 1992 and 1993. In another one–page agreement between Iraq and Syria, signed in1996, the two riparian states fixed the distribution of the Euphrates: 42 percent to Syria and 58 percent to Iraq. To date, however, there have been no firm agreements between all three states largely due to opposition from Turkey on the definition of "transnational" versus "international" rivers but negotiations are nevertheless continuing. Source: Managing Iraq water resources; Holli Chmela, Mason University, 2010.

17 Source: NDP.

biodiversity and the spread of waterborne diseases — all of which have an impact on households and farming communities, with particular harm to the poor and other socially vulnerable groups (women, children, elderly, disabled).[18]

Rural Poverty

According to the most recent poverty assessment[19], poverty rates are much higher in rural areas (39 percent) than urban areas (16 percent), and the poorest of the poor live in rural areas. Poverty at national level is about 23 percent. About 15 percent of the rural population earns below 1 dollar per person per day compared to 4.6 percent in the urban areas. Poverty rates widely differ among governorates[20], ranging from 49 percent in Muthana Governorate to 3 percent in Sulaymaniya Governorate.

In 2009, the GoI formulated a National Strategy for Poverty Reduction (PRS) aiming at securing higher income for the poor, improvement of health standards, better education and living environment, effective social protection and less inequality between poor women and men. Four elements are embodied in the PRS to achieve its goals: i) creating income generating opportunities, employment and jobs for the poor; ii) empowering the poor to be cognizant of and able to exercise their economic, social and political rights and make decisions affecting their lives; iii) building the capacity of the poor to qualify them for work; and iv) establishing an effective social safety net in which the private sector and civil society take part.

Food Security

According to the 2007/2008 Comprehensive Food Security and Vulnerability Analysis (CFSVA) conducted by the World Food Programme (WFP) and the Government of Iraq, an estimated 930,000 Iraqis are food–insecure and an additional 6.4 million are on

18 Pressure on the natural environment strains economic development, particularly in agriculture. It also has negatively impacts quality of life, especially for women. For example, in a drought situation, women bear the increased burden of fetching water and facilitating other basic household needs.

19 World Bank (2009). Iraq Poverty Assessment.

20 Report of Poverty Line and Poverty Features in Iraq. COSIT, March,2009.

the threshold of food insecurity: these 6.4 million people would fall into food insecurity in the absence of the Public Distribution System (PDS), a nation-wide rationing system set up by the Government of Iraq in 1991.

The PDS continues to be a key instrument of the GoI's food security policy. The PDS reaches the poor as well as the non–poor and is intended to provide a minimum standard of living for the entire population in amounts calculated to be sufficient to meet 100 percent of each household member's minimum daily caloric needs[21]. For the average Iraqi, the PDS increases purchasing power by about a third. For some groups — including groups commonly considered to be poor, such as agricultural labourers — the increase in purchasing power is as high as 50 percent.

21 However, the monthly food basket which includes wheat flour, rice, powdered milk and other products lasts up to three weeks depending on the type of ration. The deficit has to be made up by food purchases which many households can hardly afford.

Chapter 2 – Agricultural policies and programmes

This chapter reviews current government plans and priorities as well as past and current programmes of Development Partners. It does not include any critical analysis of the actual impact of these programmes at field level and on the agricultural sector in general as the little available information is of limited reliability.

Government Plans and Priorities

The National Development Plan (NDP, 2010–2014)
The NDP follows the recommendations of the International Compact with Iraq (ICI), and revolves around four major pillars that will govern public actions for reconstruction and development:
(i) strengthening the foundations of economic growth; (ii) revitalizing the private sector; (iii) improving the quality of life; and (iv) strengthening good governance and security.

ICI goals for food and agriculture are to develop a stable, competitive and sustainable agriculture to enhance food security and rural incomes, generate rural employment, diversify economic growth and protect the natural environment:

- developing a cohesive agricultural policy that integrates with food, trade and industrial policy, and water and environment and natural resource management and financial markets development policy;
- creating an enabling environment for a market oriented, private sector driven, competitive and profitable agriculture, backed by appropriate government policy, institutional and infrastructural support;
- developing a financing plan including public and private sources to support agriculture sector policies and institutional and infrastructural reforms.

The vision projected by the NDP for the rural sector aims at: achieving food security, better managing land and water resources through

the adoption of modern technologies, stimulating foreign and private investment in agriculture, diversifying the Iraqi economy, promoting exports of dates and fruits and addressing the issue of rural poverty. To achieve these objectives the NDP proposes:

(i) an investment policy to focus on social and economic infrastructure, land reclamation, research and genetic improvements of plants and livestock and agricultural and veterinary services and on maintaining biological diversity by establishing protected areas with concomitant integrated rural development;
(ii) support to private sector investments by developing adequate financial markets and credit policies, the creation of joint public/private sector enterprises, infrastructural facilities and technical assistance;
(iii) temporary protection to agricultural inputs and outputs to enable the private sector to become competitive with imported product;
(iv) attention to the problems of international water rights and internal water allocation (with the finalization of the Water Master Plan), to the integrated management of land and water resources, the introduction of modern irrigation methods and the rehabilitation and maintenance of the irrigation and drainage infrastructure;
(v) increasing agricultural productivity with improved technologies and modern extension methods;
(vi) applying a rural development approach to raise the economic and social level of the rural population.

The proposed allocations for the agriculture sector under the NDP amount to 11,115 billion Iraqi Dinars (US$ 7.9 billion) over 5 years, equivalent to 9.5 percent of the total allocations of the NDP to all sectors. About 85 percent of these investments are allocated for water resources (dams, irrigation, drainage, land reclamation), while the rest is allocated to agricultural (crop and animal) services.

Ministry of Agriculture Plan (2009–2015)

The 2009–2015 MoA Plan[1] outlines the two track approach of (i) rehabilitation of essential infrastructure — especially rehabilitation of agricultural land to reduce salinity through better land and water resources management; and (ii) improved agricultural extension and introduction of technological innovations. As in previous MoA sector

1 Based on a summary of the MoA plan; the full document is not available.

plans, priorities are classified by crops and livestock with projections for area expansion and productivity enhancements. Wheat, date palms, potatoes, cattle and poultry are considered first priority, rice, vegetables and maize second priority.

Programmes for livestock would aim at developing local production of sheep and goats, cattle, camel and poultry, by upgrading the genetic potential of the local breeds, improving pastures, increasing the technical coefficients, intensifying vaccination campaigns and modernizing equipment and facilities including slaughterhouses and refrigeration plants.

The Agriculture Initiative

In 2007, the Prime Minister launched a ten-year Agricultural Initiative with the main goals of achieving self–sufficiency in the main food crops, increasing farmers' incomes and reducing rural unemployment through cooperation between the private and public sectors. The Initiative aims at improving the availability of production inputs (seeds, pesticides, fertilizers), at stabilizing output prices and at supporting private investment in the agricultural sector so as to improve the living conditions in the rural areas.

The initiative encourages the formation of farmers' associations and relies on an enhanced role of the private sector and a new land contracts system whereby new farmers could be allocated land through specific contracts with the state on condition that they use it for agricultural production. A Special Fund to offer small loans at preferential interest rates is created in order to encourage poor farm families, small farmers and businessmen to start productive, income generating projects in the rural areas.

The role of the state is to be specifically confined to rehabilitation and development of agricultural sector infrastructure including drainage and irrigation, in improving existing laws and regulations concerning water resources availability and use, in strengthening agricultural research, extension, veterinary and plant protection activities and in modernizing food safety and quality controls.

Since its launching in 2007, the Agricultural Initiative has been allocated substantial funds that are used primarily to provide input subsidies as well as price support to key strategic crops such as

wheat, barley, rice, maize and dates. Funding is also provided to six special funds that offer small loans at zero interest rates to encourage poor farm families, small farmers and businessmen to start productive income-generating projects in the rural areas. According to the MOA, these funds have disbursed more than 800 billion Iraqi Dinars (about USD 570 million) since 2008, with a repayment rate exceeding 95 percent.

Government Priorities

Based on the plans of the MOA and MOWR, the Agricultural Initiative has identified a set of priorities for the agriculture sector that are in line with the overall objectives of the NDP. These priorities are as follows[2]:

Plant production

1. Introduction of modern irrigation techniques for wheat cultivation, using high yielding and salt-tolerant varieties.
2. Expansion of potato cultivation by introducing tissue culture, importing high quality tubers and controlling viral diseases.
3. Developing dates production through: (i) Increasing the number of orchards and gradual replacement of palm trees through multiplication of tissue culture seedlings; (ii) Using modern techniques in date palm production and controlling pest infestations in order to increase productivity and improve cultural practices; and (iii) Introducing subsidies for dates processing using modern cultural practices, and for the export of processed dates to international markets.
4. Promoting the cultivation of vegetables in protected (plastic houses or tunnels) and open fields and increasing yields by using modern cultivation techniques (good fertilization, disease control, cultural practices).
5. Supporting with subsidies, production of animal feed.

Animal production

1. Increasing the number of milking cows and water buffalos by importing pregnant cows of highly productive breeds.
2. Supporting with subsidies, the establishment of milk processing plants and of modern slaughtering facilities.

2 Based on a note submitted by the management of the Agriculture Initiative to the World Bank Agriculture Sector Mission in May 2011.

3. Developing veterinary services with prevention and control of animal diseases including vaccination of cattle herds against contagious diseases.
4. Supporting aquaculture intensification in closed basins and cages instead of open ponds development;
5. Developing production of Awassi sheep and Shami goat breeds.

Water Resources

1. Completing land reclamation projects including primary drainage and connections to the main drainage canal.
2. Promoting the efficient management and utilization of ground water resources.
3. Modernizing the designs of irrigation projects and moving towards pipe irrigation systems.
4. Completing the maintenance of water storage projects.
5. Improving operation, maintenance and sustainability of existing irrigation and drainage projects.
6. Preparing studies for improving water resources management methods.
7. Managing the issue of shared waters with neighboring (riparian) countries in order to reach permanent agreements with these countries.
8. Developing water legislations with the aim to rationalize water consumption and promoting water users and other forms of farmers associations.

Programmes of Development Partners[3]

The United Nations Development Group Iraq Trust Fund (UNDG ITF). The UNDG ITF was established in 2004 as one of two trust funds of the International Reconstruction Fund Facility for Iraq (IRFFI). The IRFFI was created in 2003 in response to international requests to create a mechanism to enable donors to channel their resources and coordinate their support for reconstruction and development activities in Iraq. The IRFFI consisted of the UNDG ITF and the World Bank Iraq Trust Fund (WB ITF). The UNDG ITF was administered by the UNDP Multi–Donor Trust Fund (MDTF) Office as Administrative Agent on behalf of the Participating UN Organizations.

3 It is difficult to reconcile the actual amounts pledged or disbursed through official donors' assistance as information given by different sources is of problematic interpretation.

A total of 25 donors and 21 Participating UN Organization's have signed a Letter of Agreement and Memorandum of Understanding (MOU), respectively, with the MDTF Office, as Administrative Agent. As of 30 June 2010, the UNDG ITF Steering Committee fully programmed USD 1.43 billion in donor contributions. A total of 199 individual projects were funded through the UNDG ITF and implemented by 19 Participating UN Organizations. Over USD 142 million were disbursed for the Agriculture and Food Security Sector. In June 2010 the UNDG ITF Steering Committee met to approve the final new projects under the IRFFI and move towards the ITF closure. The follow up MDTF articulates its assistance programme within the first Iraq United Nations Development Assistance Framework (UNDAF) for 2011–2014.[4]

The majority of international financial assistance has been aimed at reconstruction and development of essential services infrastructure (water, electricity, health, education) and to the oil, security and transportation sectors, primarily by the US Government. More recently, international assistance has increasingly become focused through the International Compact with Iraq (ICI, 2007–2011) with the purpose to unlock Iraq's own financial resources for economic development and to develop private sector engagement. The ICI is an initiative of the Government of Iraq based on a partnership with the international community for a five–year national plan that includes commitments from both Iraq and the international community for achieving peace, sound governance and economic reconstruction.[5] The current NDP is by and large based on the ICI recommendations.

The World Bank. The WB re–engaged with Iraq in the summer of 2003 when it prepared a needs assessment together with the United Nations (UN). World Bank Group support to Iraq since 2003 has been framed around three Interim Strategy Notes (ISN), the first for

4 The UNDAF prepared by the United Nations Country Team in Iraq in consultation with the Government of Iraq and other partners, identifies five priorities providing the scope and strategic direction of the UN system's support to Iraq in the next four years, namely: 1. Improved governance, including the protection of human rights; 2. Inclusive, more equitable and sustainable economic growth; 3. Environmental management and compliance with ratified international environmental treaties and obligations; 4. Increased access to quality essential services; and 5. Investment in human capital and empowerment of women, youth and children.

5 The ICI is co–chaired by the Government of Iraq and the United Nations. Other partners include the World Bank, the International Monetary Fund (IMF) and other regional financial institutions. The implementation of the ICI was supported by the IRFFI and the United Nations Country Team Joint Priority Action Plan, designed to deliver direct assistance to basic services that are of vital humanitarian importance.

FY04-05, the second for FY06–07 and the third for FY 2009–2011. The 2009–2011 ISN focuses on three thematic areas of engagement: (i) continuing to support ongoing reconstruction and socio–economic recovery efforts including projects in health, education, water, environment, community–driven development scaling up and other basic infrastructure sectors; (ii) improving governance and the management of public resources, including human, natural and financial; and (iii) supporting policies and institutions that promote broad–based, private–sector–led growth.[6]

The World Bank has approved since 2003 a total of USD 990 million in financing for Iraq: USD 518 million for 24 grants from the World Bank ITF and USD 508.5 million in soft loans from IDA. In the rural sector, grants have financed social safety nets, water supply and sanitation, irrigation and drainage, environmental management and knowledge products covering a Country Economic Memorandum (2006), a report on Iraq's Public Distribution System (2005), an Investment Climate Report (2004) and a Study on State–owned Enterprise Reform (2004). A Water Resources Assistance strategy was prepared in 2006.

USAID. Since March 2003, USAID has invested approximately USD 6.6 billion in programmes designed to stabilize communities, foster economic and agricultural growth and build the capacity of national, local, and provincial governments to respond to the needs of the Iraqi people. Community action programmes have helped to identify and prioritize local needs, such as school renovations, literacy, water and sewerage system rehabilitations and soil and water management.

Provincial Reconstruction Teams (PRT)[7] have been set up to provide technical assistance to a variety of community needs and challenges, microfinance institutions (MFIs), agribusiness programmes, value chains and markets and marketing of agricultural products. PRTs operate in eight of the 18 provinces.

Since 2003, USAID's Agriculture Reconstruction and Development Programme for Iraq (ARDI) has helped restore Iraq's marshlands,

6 Source: Interim Strategy Note for the period FY 2009 2011.
7 The Provincial Reconstruction Team (PRT) model was brought to Iraq in November 2005. PRTs are small civilian–military units that assist provincial and local governments in Iraq to govern effectively and deliver essential services.

reflooding as much as 25 to 30 percent of the original marshlands.[8] Accomplishments have included a hydrologic model of Tigris and Euphrates river basins and development of an Integrated Marshlands Management Plan, improvement of livestock services, demonstration farms in the marshes introducing new crops and improved management practices for sorghum, wheat, barley, and broad beans. USAID activities have also concerned:

- the development of high value crops like date palms, tomatoes, and olives, legumes production and beekeeping;
- establishment of date palm nurseries across 13 governorates;
- domestic feed grain production to revitalize the domestic poultry industry;
- an integrated soil–water–crop management approach, including demonstrations illustrating efficient water use;
- preparation of the first phase of a National Water Strategy to manage water allocation, storage capacity, hydro–dam reservoirs, and flood control;
- support to the Ministry of Trade for managing the countrywide network of storage warehouses, grain silos, trucking contractors, food distributors or agents and assistance in drafting a food security strategy with the objective to promote short–term food security and capacity building;
- assistance in establishing 14 Microfinance Institutions (MFIs) that serve all 18 of the country's provinces (Tijara programme). These institutions offer one year loans with an average outstanding value of about US $ 1400 each. Since the programme inception in 2003, more than 204,710 loans, collectively worth USD 470 million, have been disbursed.[9]

8 The Tigris–Euphrates Basin forms a system of wetlands and marshes, shared by Iraq, Turkey, and Syria, that have sustained ancient societies for thousands of years. Once the largest and most diverse wetland in the Middle East, the marshlands of today are parched, after being deliberately drained by the Iraqi government in the 90s. The Canadian Government has supported a project to create an integrated management plan, build capacity/training programmes for further resource management, and establish an implementation agency to oversee the management plan. The project with Canadian funding formally ended on March 31, 2010 but is being followed up by FAO to support agriculture production and post production activities.

9 According to USAID, Iraqis receiving microfinance loans have a remarkable record of repayment. Ninety–nine percent of the loans are reported to be repaid in full on time. Only one percent have repayments delayed for more than 30 days. On time repayments by borrowers helped Iraqi MFI loan portfolios to grow 31% for the one–year period ending June 2010. About 15 percent of the outstanding microfinance loans are held by women, many of whom operate cottage industries that had no access to business financing prior to the start of Iraq's microfinance industry. *Murabaha* Islamic loans that are structured to eliminate interest entirely also are available.

Since 2007, USAID initiated a multi–year programme to support agro industrial development with a total budget of USD 343 million.[10]

USDA. USDA is committed to helping Iraqi farmers "generate higher incomes" through programmes in "agribusiness, agricultural extension, and policy engagement." USDA has placed U.S. agricultural advisors on Provincial Reconstruction Teams and is the lead agency for U.S. government agricultural policy guidance to the Government of Iraq. USDA promotes commercial agricultural trade in U.S. farm products and reports on crop conditions. It is implementing a number of technical assistance activities to help revitalize Iraq's agricultural sector broadly classified as: (i) training and education of public and private sector representatives; (ii) better management of water and soil resources; (iii) improving animal and plant health; and (iv) strengthening extension services.

FAO. Under the IRFFI, FAO coordinated the UN cluster for agriculture, food security, environment and natural resources management and has recently become the lead agency of the agricultural sector under the new UNDAF arrangements. The focus areas of FAO work are:

- rehabilitation of water supply systems. With the MoWR, the rehabilitation of main pumping stations to restore the irrigation and drainage infrastructure;
- restoration of the veterinary services;
- promotion of employment generation developing small–scale income–generating cottage industries, with UNIDO;
- rebuilding food safety and food processing capacity. (a joint FAO, UNIDO and WHO project);
- inland fisheries, including training in modern techniques, supplying fingerlings and support of an applied and adaptive research programme;
- rehabilitation and development of the national seed industry;
- date palms. A joint FAO/UNIDO project rehabilitating and modernizing the date palm sector through the provision of technical assistance to farms and enterprises.

10 A USD 343 million Inma (means growth in Arabic) Agribusiness programme and Izdihar (Iraq Private Sector Growth and Employment Generation programme carried out by the Louis Berger Group Inc.) are designed to prepare the way for agribusiness investment in the food industry. Source: International News, 2010.

In 2008 FAO prepared and agreed with MoA, a Strategic Framework for FAO Assistance (2009–2014)[11] which would go beyond the emergency projects conceived and implemented along sub–sector lines and focus on integrated, holistic programmes. In 2009, FAO signed an agreement with the Ministry of State for Marshlands Affairs (MoSM) for a project to assist in marshlands development based on technology transfer, capacity building and investments in fisheries, horticulture, livestock, agro–industries, GIS applications and food safety. Project cost is about USD 47 million of which USD 5 million from GoI and the rest from donors.

JICA. The Four Pillars of JICA's assistance to Iraq are to: (i) strengthen the foundations for economic growth; (ii) promote the private sector; (iii) maintain infrastructure; and (iv) develop human resources and strengthen governance. JICA has pledged up to USD 5 billion for reconstruction in Iraq disbursed in part through IRFFI. Most of the assistance has been for the petrol, electricity, transportation, water and sanitation sectors and for other emergencies. In agriculture, a USD 90 million loan has been granted for the irrigation sector and USD 160 million for a fertilizer plant. A Technical Cooperation Programme from 2003 to 2009 trained a total of over 3,700 technicians–in all sectors.

European Union. EU support to Iraq from 2003 to 2010 amounted to over 1 billion Euros including both reconstruction and humanitarian assistance, partly channelled through IRFFI. Agriculture received so far about 80 million euro.

The EU and SIDA. The EU and SIDA have financed through the UNDG ITF a USD 30 million Local Area Development Programme implemented in 2008–2009 involving seven UN agencies and the Ministry of Planning and Development Coordination (MoPDC). The programme was designed to improve living conditions and contribute to sustainable poverty reduction in three provinces in the north, centre and south,[12] and it aimed at: (i) strengthening the capabilities of local authorities to plan and manage reconstruction and development activities through the formulation and implementation of local area development plans; (ii) stimulating local economic development and generating short term and sustainable long term

11 Strategy for FAO Assistance 2009–2015.
12 Sulymanyah, Babylon and the Marshlands.

employment; and (iii) improving social and physical infrastructure using labour intensive approaches and the service delivery capabilities of local governments. The project was instrumental in achieving consensus on formulation of integrated district plans and should be considered as a useful experience in providing feedback to any such initiatives involving local communities.

A Partnership and Cooperation Agreement to be signed in mid 2011 will provide the framework for EU assistance based on a Joint Strategy Paper for 2011–2013. In the agricultural sector, water resources management is recognized as a critical issue and the EU[13] will assist in: (i) establishing a comprehensive water management system (a Water Master Plan) which is economically efficient, equitable and environmentally sustainable; (ii) enhanced service delivery; (iii) designing a comprehensive regulatory and institutional framework for sustainable water management; (iv) building the capacity of relevant institutions for water management (including trans–boundary water policies, international treaties and biodiversity); and (v) prevention and control of waterborne diseases through support to health institutions. In summary: a comprehensive policy framework for sustainable water resources management, improved institutional capacity for water resources planning and management, improved water use efficiency and increased effectiveness of existing water infrastructure.

13 The Government of Italy would be the major player in the field of water resources management.

Chapter 3 – Constraints

Iraq faces a number of challenges with a direct impact on all the economic sectors. These are related to the security situation, the weak institutional capacities, the deterioration of basic services and of social indicators in areas such as health and education, widespread unemployment–about 50 percent of the work force, according to some estimates, and poverty where more than 60 percent of the population[1] depends on the government's rationed food basket (see below). Social inequities, the deteriorated state of most infrastructures, the weakness of the private sector and the distorted pricing structure and incentives framework complicate even further the social and economic development scene.

Iraq agriculture is under increasing pressure to feed its growing population. It is estimated that Iraq will need much more than the current USD 5 billion to import basic food to meet the annual shortages–for as long as required by domestic production to achieve sustained growth.

The agricultural sector's low productivity and growth rates are attributable to a variety of issues and to past policies when the government maintained artificially low food consumer prices through price and production controls and marketing restrictions. In addition, years of insufficient maintenance and funding have degraded agricultural services and physical infrastructure, particularly the irrigation network. During the recent conflicts, extensive looting damaged a range of government and private agricultural production and service facilities in central and southern Iraq, including animal health and artificial insemination centres, poultry production facilities, and plant quarantine units at the borders. Moreover, Iraq is heavily dependent on external water resources that are generally not subject to cross–border agreements, and the country now faces decreased water inflows and increased salinity that negatively affect agriculture, drinking water, and the ecological balance in marshland areas.

1 The percentage of people served by the Public Distribution System varies according to different sources. In 2005 the World Bank report: "Considering the Future of the Iraqi PDS", estimated that more than 95 percent of Iraqi households received rations.

Agricultural Subsidies

The Public Distribution System

The nation–wide rationing system set up by the Government of Iraq in 1991 is a key instrument of its food security policy. The PDS reaches the poor as well as the non–poor. For the average Iraqi, the PDS increases purchasing power by about a third. For some groups — including groups commonly considered to be poor, such as agricultural labourers — the increase in purchasing power is as high as 50 percent.

The PDS is intended to provide a minimum standard of living for the entire population in amounts calculated to be sufficient to meet 100 percent of each household member's minimum daily caloric needs[2]. However the system has suffered challenges regarding the quality and quantity of items[3], inefficiencies in the distribution system and sometime limited access to the population due to the lack of security. It represents an unsustainable cost to the GoI. Its budget (7 percent of the national budget) was reduced from USD 5.9 billion in 2008 to USD 3.6 billion in 2009 but was increased again to USD 4 billion in 2011.

The most noteworthy aspects of inefficiency include:

- weaknesses in procurement and financial management which leave the system vulnerable to waste, theft and corruption;
- lack of targeting of the food ration to the poorest segments of Iraq's population;
- the high dependence on the PDS as a major source of food is inherently a source of vulnerability as disruptions in food distribution often leads to acute food insecurity;[4]
- the food items in the basket are mostly imported; and the food baskets have been heavily subsidized–virtually free.

2 However, the monthly food basket which includes wheat flour, rice, powdered milk and other products lasts up to three weeks depending on the type of ration. The deficit has to be made up by food purchases which many households can hardly afford.

3 However the existing food rations do not provide a nutritionally adequate and varied diet. In spite of the fact that the ration is reasonably sufficient in calories and total protein, it is lacking in vegetables, fruit, and animal products and is, therefore, deficient in micronutrients. With only one quarter of the planned ration of pulses distributed due to gaps in the submission of applications for procurement, the protein quality of the diet has also been poor. Source: FAO.

4 Evidence shows that the prevalence of food deprivation can vary between 2 and 16 percent over the course of one year, largely influenced by the functioning of the PDS.

… Although the PDS is an effective safety net, this goal is accomplished in a highly inefficient manner, costing about USD 6.30 to transfer USD 1 worth of food to a poor person–quite high by international standards. Three aspects of inefficiency are particularly noteworthy: (i) because the PDS is available to all households–not only poor households–the cost is considerably higher than is typical for a targeted safety net; (ii) despite efforts by Ministry of Trade (MoT) officials, accounting, communication and tracking systems for the PDS are rudimentary and generally dysfunctional, making it difficult to know if prices charged are appropriate, if contracts are fulfilled, if duplicate payments are made, and if appropriate quantities of goods are where they are supposed to be; and (iii) the MOT implements the PDS through a combination of Iraqi private companies and SOEs. In those areas that are contracted to the Iraqi private sector, non–competitive procurement reduces competition and the efficiency it can bring. In those areas of the PDS that are implemented by SOEs, the Iraqi private sector is crowded out and has not had the experience necessary to build its capacity…

Source: Considering The Future of the PDS. WB, 2005.

The highly subsidized "food basket" has been and is, an essential policy measure to ensure food security and avoid possible famine during the years of war and economic disruption. It is an important feature of the complex problem of Iraq's agricultural prices policy which historically has always been a major policy issue. The Government of Iraq with the NDP, has committed to substantially reforming and eventual monetizing the PDS.[5] The Council of Ministers (CoM) following the recommendations of the Poverty Reduction Strategy (PRS) 2010–2014, has approved a plan presented by the government's High Committee for PDS Reform that contains the detailed actions to be taken to implement the PRS. This includes a phased five–year plan to reduce the number of PDS beneficiaries to cover only the poor population by 2015 and, in parallel, an expansion and improvement in the services provided through social safety nets. The government's 2010 Budget Law has

5 The World Bank has provided technical assistance to the MoT as it undertakes improvements in its PDS procurement and financial management systems. Two workshops (funded through IRFFI) have been held with staff of the MoT. Amongst the main findings: *"there were delays and high prices caused by inefficient procurement practices, congestion and aging facilities at the port, inadequate food testing, lack of control when trucks leave the port and duplicate and fictitious registrations of beneficiaries"…*

requested the MoT to develop a detailed plan to reform the PDS.[6] MoT signed a Memorandum of Understanding with the World Food Programme in November 2009 for a 24 months (2010–2012) project for "C*apacity Development for Reforming the PDS and Strengthening Social Safety Nets for Vulnerable Groups*" to support the reform of the PDS and improve efficiency in managing the supply chain.[7]

Prices and subsidy policy

Agricultural policies have been characterized by the state determination to control and subsidize farm input prices and the distribution as well as to subsidize output prices of strategic crops. The launching of the Agriculture Initiative in 2007 has provided the resources to implement such widespread subsidies.

Despite the lack of food import restrictions, the Ministry of Trade (MoT) maintains a near–complete monopoly on importing basic commodities such as wheat, rice, oil and pulses. These commodities are Iraq's largest value import, and are released by the MoT at highly subsidized prices into the local market through the PDS. The mass supply of these commodities through the PDS for almost no charge (no transport and distribution costs are applied) lowers their market price. This has a negative impact on the private sector agricultural traders, who cannot afford to buy at international prices and sell at the low prevailing market prices. The widespread distribution of subsidized food discourages the development of competitive private sector agriculture, of transparent markets and works against diversification of small farmers' farming systems. Heavy subsidy for imported food items has resulted in depressed

6 Including: (i) targeting the PDS based on socio–economic indicators and inclusion of all families below the poverty line and just above it; (ii) halting of PDS rations to Iraqis with a monthly income of 1.5 million Iraqi Dinars (USD 1,271); (iii) reducing the PDS food basket to five commodities, including wheat, rice, vegetable oil, sugar and infant formula in 2010 and 2011, and maintenance of a uniform food basket to 2014, with targeting based on socio–economic and nutritional information; (iv) implementation of a subsidy programme for wheat flour; and (v) building capacity at the decentralized level to transfer management of food–based social safety nets.

7 The main outputs of the project are: An operational plan to reform the PDS and improve the efficiency of its supply chain; Targeting of the PDS to poor people; Modern food procurement systems; Improved monitoring of global, regional and domestic food supply and demand; Systems to improve efficiency in managing the supply chain… as well as monitoring of the PDS and strategic grain reserves; Piloted biometrics methodology to register beneficiaries for the PDS; Training and Comprehensive Food Security and Vulnerability Analysis (CFSVA); methodologies and food security monitoring; Geographic targeting of food–based safety nets; Improved design of safety nets; Review and design of a strategic grain reserve for the government. Source WFP.

domestic producer prices leading to price disincentives particularly for wheat growers.[8]

> … for the 2009/10 season the government has slashed subsidies to Iraqi wheat and barley growers, fuelling farmers' anger across the country notwithstanding the fact that the prices the government paid for wheat and barley were much higher than those prevalent on international markets. Set prices for 2010 were 650,000 ID (USD 500) for wheat instead of 850,000 dinars (USD 650) paid the year before for each ton shipped to government silos. Barley growers' prices were cut to 450,000 dinars (USD 350) from 650,000 dinars (USD 500). Poultry producers are facing new pressures from imported Brazilian, Turkish and Syrian chicken, which cost considerably less than the local produce. As an example at wholesale, the price of local chicken ranged between USD 2500 to USD 3000 per ton, while the price of imported Brazilian chicken was USD 1650 per ton. Moreover, the price of imported chicken is relatively stable, while domestic prices fluctuate dramatically …
> Source: Iraq Business News, May 2010.

However, targeting of the PDS would reduce the low–cost supply of key crops onto the market, thereby making the market more profitable for the private sector. If the coverage of the PDS is reduced, the decreased supply of low–cost key food commodities into the market would place upward pressure on retail prices for those commodities. The GoI would therefore have to institute other market price control mechanisms in order to prevent future price rises from inflicting further expense on the Iraq population[9].

The rest of the agriculture sector (vegetables, dates, rice, and miscellaneous fruits) is basically market driven, with minimal direct government interference. Dates benefit from subsidized pesticides and offshoots from government nurseries, and all subsectors may

8 … farm gate prices are affected by fuel price increases as fuel is a major input for mechanized agriculture and by non–competitive market conditions as well as security. Comparing the evolution of wholesale and retail prices between 2006 and 2007 for a selection of locally produced vegetable commodities, it is apparent that a change in the wholesale price of a given commodity is not met with a proportional change in the retail price… This asymmetry in price transmission represents imperfect market conditions in Iraq and can be attributed to non-competitive market conditions and the lack of market information that benefits producers and consumers… Source: FAO Food Prices Report 2009.

9 *Ibid.*

benefit from subsidized agricultural and irrigation equipment that can be used on any crop. While fertilizers are subsidized, seeds are sold to farmers by the Seed Certification Board at prices intended to cover the direct cost of multiplication, cleaning, sorting, treating with fungicide and bagging.

In the animal production sector, poultry producers received large amounts of subsidized inputs from the State Company for Animal Resources (SCAR). This included imported hatching eggs, chicks, maize feed, soybean meal, medicines, and equipment. The Mesopotamia Seed Company purchased maize from farmers and sold it at subsidized prices to private poultry producers. In the past, these poultry producers then sold their products — broilers and eggs — to consumers at official prices. These policies have apparently now been discontinued and there is no control of prices for poultry. For livestock the only subsidy was and to a certain extent still is, for animal vaccines and medicines.

Water Resources and Irrigation

Problems with irrigation systems are severe. Widespread discontinuing of the maintenance of public owned assets following the 1990 sanctions has affected all of the government run agricultural facilities and particularly the extensive network of irrigation and drainage infrastructure. Estimates in 2008 indicated that over 500 irrigation and drainage pumps were in critically bad conditions and that substantial damage has occurred to the canal network due to lack of repair and maintenance.[10] The cost of making the water available is still calculated on the basis of the agricultural area regardless of the consumed quantity of water, the frequency of irrigation, or the crop types.

The traditional irrigation method in Iraq of flooding the land with water is an extensive method that overcomes problems of unevenness of the land and does not require costly furrowing or grading. The disadvantages are waterlogging, salinization and low

10 MoWR manages the headworks and irrigation and drainage system down to and including secondary canal level and farmer cooperatives, in principle, manage the system below that level. User fees vary by category of irrigated land but in general do not even cover 10% of the costs–when they are collected. Farmers must follow agricultural plans determined by MoA but it is doubtful whether this rule is actually followed.

efficiency — on average only 40 percent of the water applied is beneficially used by the plant. The quality of land is poor as a result of soil degradation, diminishing fertility, over–use and wind and water erosion. Wind erosion is believed to affect 35 percent of the total area, while water erosion affects 17 percent. Nearly 70 percent of the cultivable land is estimated to suffer from salinity threat with as much as 20 to 30 percent of the irrigated area not farmed because of salinity[11]. Salinity has always been a major issue: it is estimated that already in 1970 half the irrigated areas in central and southern Iraq were degraded due to water logging and salinity[12].

Over the past decade, the amount of water in the rivers declined as a result of various upstream activities, as well as long periods of droughts and floods. A vast portion of the Iraqi territory is subject to desertification. In addition, the contamination of the river waters due to discharges of untreated domestic and industrial wastewater cause extensive sedimentation in the dams' reservoirs. Increasing water pollution due to lack of proper water treatment and high temperatures leads to eutrophication, contributing to further water scarcity by reducing water usability downstream.

The responsibility for agricultural development of irrigated areas is a problem. It is in principle up to MoA to respond to the need for extension and agricultural services but there is little coordination of activities between the MoWR and MoA. It is often the case that rehabilitated areas are left behind by MoA as its programme of work has not been adjusted accordingly. The result is inefficient use of water, lack of farm requisites, inappropriate farming systems and low productivity.

Institutional restructuring and subsector reform are needed. So far, development of the irrigation water sector has been primarily focused on restoring the irrigation and drainage pumping stations with less attention given to strengthening the capacity and accountability of water service providers as well as building up capacity for the sustainable maintenance of irrigation infrastructure. Operation and maintenance of the irrigation systems leaves much to be desired. Water users' fees applied by MoWR cover at most 10%

11 Source: ARDI: Irrigation Water Assessment and Priorities for Iraq, 2004.
12 Traditionally farmers managed the accumulation of salt by leaving land fallow every alternate year, which allowed the water table to drop, and rainfall to leach out salts. But with greater land fragmentation into smaller parcels, farmers in some areas abandoned the alternate year fallows, with the result of a rapid accumulation of salts.

of the cost, water users' associations are almost inexistent and here again conflicts of competence between MoWR and MoA complicate a needed reform of the system.[13]

The problems with the allocation of water resources will become more acute in the medium term if water shortages materialize. The Water Master Plan (WMP) should be urgently finalized. A first phase of the preparation of the Master Plan for Water Resources Management was completed in 2006 with USAID support. The second phase recommended by the WB Water Resources Assistance Strategy paper should also have been finalized with FAO assistance and officially approved but its actual endorsement by GoI is to be confirmed. There is EU interest in following up on the WMP and the NDP recommendations are clear: "… *complete the second stage of the water budget… (the strategic study of water and land resources) that the Ministry of Water Resources has undertaken for the various sectors that are beneficiaries and consumers, including agriculture, electricity, transport, swamps (Al–Ahwar), drinking, healthy water, industrial needs, and others… develop a central plan that specifies the share of water needed in all areas of arable land…*"

Biodiversity and Environmental Protection

Excessive focus on urban and economic development and low awareness of the importance of the functions provided by aquatic ecosystems has progressively led to severe degradation of nature and loss of biodiversity. The wars have contributed to further degradation of the environment: because of infrastructure damage, significant parts of the population do not have adequate water supply or sanitation systems and sites where municipal, medical or military waste have accumulated carry risks of all sorts including disease epidemics. Numerous spills have resulted from damage to Iraq's oil infrastructure and the lack of water treatment facilities at Iraqi refineries has led to pollution from those installations.

13 Water service charges were instituted by Law 112 of 1986, which was intended to create more farmer responsibility for operation and maintenance. Charges are levied at a flat rate of 750 ID per dunum of "reclaimed" (i.e. drained) land, and 500 ID per dunum of non-reclaimed land. The collection adds up to less than $2/ha, which is not even one tenth of the amount MoWR spends annually on operation and maintenance. On a volume basis, these charges are equivalent to 1 US cent for every 50 m3 consumed, amongst the lowest water service charges in the world. Source: WB Water Resource Assistance Strategy.

In the alluvial plain, soil quality has been damaged by the deposits of large amounts of salt, borne by irrigation overflows and wind and poor soil drainage. Desertification and soil erosion have reduced arable land. Transboundary pollution and lack of river basin management by the GoI have led to the degradation of Iraq's major waterways. The massive drainage of the Mesopotamian Marshes (covering about 20,000 km2) in southern Iraq has had a catastrophic impact on people's livelihoods, the ecosystem and biodiversity. The water–filtering role of the marshes has largely ceased and the remaining drainage canals, waterways, and creeks carry agricultural run–off, municipal wastewater, and water laden with silt and industrial effluents directly through the Shatt al–Arab to the northern Gulf. In addition to the southern marshlands, there are numerous locations with unique biodiversity, and especially birdlife, which are in danger.

Agricultural Credit

As of June 2008, the banking system comprised 29 banks, two of which were state–owned commercial banks, 23 were private banks, and four were small state–owned specialized banks: Agriculture Cooperative Bank,[14] Industrial Bank of Iraq, Real Estate Bank of Iraq and the Ishtiraki Bank[15].

Access to credit is limited outside government subsidized credit programmes[16] and private capital investment resources are lacking. According to Central Bank statistics "cash" credits disbursed for agricultural purposes were in 2009 as follows: from state banks 398 billion ID (USD 340 million), from private banks 19 billion ID (USD 16 million) for a total of 417 billion ID (USD 356 million) or 7 percent of total "cash" lending for all sectors (5690 billion ID – 4863 million USD).[17] Under the 2008 agricultural initiative by the Prime Minister, six specialized lending funds were to be established

14 The Agricultural Cooperative Bank loans were 391 billion Dinars in 2008, 319 billion in 2007, 99 billion in 2005, 21 billion in 2000. In 2008, 37 percent was for agricultural supplies, 9 percent for livestock, 3 percent for irrigation and the rest for other purposes. Source: COSIT.

15 Recently renamed Iraq Bank and which will soon be folded into Rafidain Bank.

16 A number of weaknesses are being addressed as part of the Banking Sector Reform programme (2008–2012) endorsed by the government in February 2009.

17 However if "pledged" credits are included the results are quite different: the total cash + pledged is equivalent to USD 44 billion in which agriculture accounts for only USD 362 million or 0.8 percent.

to give loans without interest to farmers in the fields of gardening, palm trees, mechanization, introduction of improved technologies, livestock development and large agricultural development projects. A sum of USD 240 million was allocated for these funds in 2008, and a similar sum in 2009. MoA has more recently requested the recapitalization of the Agricultural Bank, with an initial allocation of over USD 200 million.[18]

Agricultural Planning and Services

Agricultural planning

Policy analysis capacity in MoA is limited as its own strategic planning leading to operational and implementable programmes. Capacity to prepare, supervise and monitor project implementation is very weak. The linkage between national and governorate and provincial level agricultural strategies is not clear.[19] Development programmes are planned and implemented on a sectoral basis with little inter-institutional coordination and cooperation. The identification of agricultural development priorities and the development of operational plans should be carried out involving stakeholders and through interagency cooperation and well defined inter-institutional planning structures to avoid inefficient and ineffective application of resources, as now is the case.

Agricultural services

The capacity of the MoA–like the MoWR and other government institutions–to provide services to the sector has remarkably deteriorated over the past two decades.

Budget cuts have reduced the level of services and prompted the departure of skilled personnel with a serious loss of human resources in agricultural services institutions such as agriculture research, extension, animal health and artificial insemination centres, plant quarantine and disease control. [20]

The Iraqi National Agricultural Research System (NARS) is made up of three main categories of institutions: (i) the State Board for

18 Source FAO: Iraq Food Prices Report, 2009.
19 Source: Iraq Briefing Book, 2010.
20 Rehabilitation projects for agricultural service facilities are underway with assistance from Italy, USA, Japan, FAO, and the World Bank.

Agricultural Research (SBAR), affiliated to MOA and the Center for Water and Soil Research (CWSR) of the MoWR; (ii) five colleges of agriculture and three colleges of veterinary medicine supervised by the Ministry of Higher Education and Scientific Research (MHESR); and (iii) other scientific and technical institutions. Officially, MOA has the responsibility of the national agricultural research policy, but in practice it shares it with other institutions and ministries involved in research activities. SBAR cooperates with CWSR through joint teams whenever necessary. Likewise, there is cooperation between SBAR and the universities; its staff may deliver some lectures or take part in joint research programmes.

Agriculture research is constrained by several factors: most of the support resources (buildings, labs, farms) have been damaged and those in working conditions are devoted to education; technicians are not sufficient either in number or quality, because of low salaries offered and budget restrictions, specific research resources and relations with farmers and extension workers are very limited. Due to the sanctions imposed on Iraq, contacts and communication with the outside world have been for a long time disrupted: scientific international relations are mainly with ICARDA, ACSAD and FAO.

There is lack of an effective extension and training strategy involving decentralization, pluralism, privatization, gender–sensitivity, client participation and application of modern information technology tools. There are poor linkages with research and other institutions such as universities, NGOs, private sector, almost complete lack of support to women farmers and rural youth, shortage of qualified manpower and low operating budgets.[21, 22] Linkages and coordination are also weak between the central extension organization and extension bodies in the governorates. Simultaneously, the non involvement of the beneficiaries in the setting of both the research and extension agenda is highly counterproductive for both.
The extensive damage suffered by public (and private) production

21 According to FAO estimates the MoA budget for the sector was in 2008 about USD 71 million for operational costs and USD 63 million for investment costs. For the MoWR the figures were USD 107 and USD 332 million respectively with an increase from 2007 of 76 percent for MoA and 100 percent for MoWR the growth being due to an increase in the capital budget of 277 percent for MoA and 134 percent for MoWR. Central Bank statistics show a 2009 budget for "Agriculture" equivalent to USD 1 billion and for "Water Resources" of about USD 3.1 billion. Always according to Central Bank statistics the total GoI budget for all sectors for 2009 was USD 237 billion.
22 A study on Agriculture Public Expenditures–Priorities, Planning, Management and Monitoring is proposed by the World Bank.

and service facilities is yet to be recovered. Fuel for tractors and electricity for pumps are often in short supply and add to farmers' production costs. Commitments by the government to the agricultural sector to supply seed, equipment, fertilizer and other inputs for the principal crops of wheat, barley, corn and rice are largely unmet. On the other hand, administrative bottlenecks and costly import licensing and testing procedures severely limit the private sector's ability to supply these inputs. Shortage of fertilizers forces farmers to minimize application rates which greatly reduce overall soil fertility levels.

Many problems exist in the areas of plant protection, plant quarantine and animal health and diagnostic services. Monoculture farming has led to increased weeds, pests and disease population in the crop fields. Most of the fruits and vegetables delivered to the wholesale markets have been damaged by inappropriate handling, packaging and transport. The quality of grains is poor mainly due to a mixture of inert matter and weed seeds.

Increased pest and disease infestation has been recognized as one of the most challenging constraints facing Iraqi agriculture and affecting food security. The effect of all this is quite evident in such areas as plant protection where in spite of heavy usage of pesticides, diseases have been on the rise. The plant quarantine stations at the border have also not been able to check the influx of plant disease for lack of funding. Weak abattoir services are also posing extreme health hazards for the population. In northern Iraq, transboundary diseases and insect pests have been a major factor in limiting wheat production. Previously, the government relied on aerial spraying of pesticides — a practice potentially detrimental to the environment. However even this practice has been discontinued because of the limited supply and high price of pesticides.

Farmers' Organizations, Social Capital

Those organizations which exist at producer level are very weak and ineffective. The same problems affect the few operational water users' associations. The authority of traditional farmer organizations has been eroded by the events of the last decades. The lineage groups, which traditionally farmed tribal lands with mutual cooperation, were marginalized by a number of successive

events last but not least the various land reforms initiatives which fragmented ownership and the redistribution and tenure reform accompanying irrigation development.

On the social side and of particular relevance in the rural areas is the erosion of the social fabric of communities and families. This has resulted in a depletion of social capital, loss of cultural identity and the pressing need for a vigorous effort to build up social cohesion and the value of traditional customs. It is a long term effort which will remain of paramount importance for any revitalization of the rural areas, for an effective decentralization policy and for the emergence of comparative advantages at territorial level.

Private Investment and Agribusiness

The incentive framework is not conducive to private sector investment in agriculture. Problems include security, unclear requirements for registering and closing businesses, license requirements, limited communications infrastructure, difficult access to finance and a non–competitive business environment that lacks transparent and clear legal frameworks for rules–based market competition.[23]

Because of the relative isolation of Iraq in recent decades, food and agricultural enterprises have not been able to benefit from international markets, modern production techniques and global trading standards. There are no incentives to invest in agricultural processing industries or value chains because of the complicated administrative and regulatory system, the considerable shortcomings of the public agencies that are in charge of the advisory and technical services, erratic price policies, inefficient and outdated marketing networks, very little market information and complicated and time consuming export/import procedures.

23 Source: Iraq Briefing Book, 2010.

Land Tenure

The land holding system in Iraq is a mixture of owner operator, lease holder[24] and share cropper. The size of land holding depends upon the type of land. According to the agricultural reform regulations of 1990, the maximum holding size is 75 ha in rainfed area. State–owned lands (Amiri lands) are divided into two types: state–owned lands that have never been occupied and lands exploited by individual owners or cooperatives with an official land registration title.

In 2001, 67 percent of the land belonged to the state: it was rented or distributed by MoA to private operators and about 32 percent was privately owned[25]. This situation might have changed significantly in the meantime. Always according to COSIT there were in 2001 some 933 cooperatives with about 222,000 members[26].

Land tenure legislation is inadequate. Agrarian reform efforts, 1958 to date, that expropriated lands, largely failed in the task to redistribute lands to small owner–operators, resulting in a fragmented system of lease arrangements between producers and the GoI–MoA.

There is a dearth of reliable information on land tenure following decades of shifting and incoherent land policies, internal conflict and destruction of public records. Ownership is difficult to verify. The judiciary lacks the enforcement capacity to respond to unlawful evictions and the rights of the landless population. The lack of equipment and the general disruption of bureaucratic services have compounded the problem further.

The nature of ownership is considered one of the main limitations for the development of the agricultural sector and a major constraint to increased production as well as a contributing factor to Iraq's instability.[27]

24 Lease holding size varies from 7.5 to 17.5 ha depending on the availability of agricultural reform land and density of population.
25 COSIT. No information available on the meaning of "distributed".
26 According to FAO AQUASTAT about 5 percent of the agricultural land is used by cooperative companies, consisting of both traditional and modern systems. Usually each cooperative has 8 members with an average size of 40 ha. Commercial companies cover around 14 percent of the agricultural land, mostly located in Khozestan province in the southwest of the country.
27 Source: NDP.

State Owned Enterprises (SOEs)[28]

GoI has been heavily involved in marketing, processing, and provision of agricultural supplies (i.e., seeds, fertilizer, agricultural chemicals, and farm equipment) through State Owned Enterprises. These practices have distorted markets and created unhealthy dependency among agricultural producers.

In the past there were some 200 SOEs of which at least 30 were concerned with agriculture. According to available information, currently there remain about 8 SOEs in agriculture out of a total of 160 SOEs. The General Company for Agricultural Supplies (GCAS) with branches in each of Iraq's governorates imports all inputs for plant and animal production and regulates the trading of those inputs, including agricultural equipment.[29] SOEs purchase and process grain (corn, wheat, barley) or import seed. The Ministry of Industry and Minerals (MOIM) is responsible for companies that process agricultural products. These include dairies, cattle feedlots, sugar refineries, vegetable oilseed extraction and processing facilities. The MOIM also manages SOEs that produce agricultural inputs, including fertilizer plants and an equipment assembly plant.

Agricultural Information Systems

The agricultural statistical system is weak and there are significant sector specific "gaps" in statistical information, which hinder GoI from effectively developing agricultural policies and implementing agricultural interventions.

A USD 1.8 million FAO/UNIDO project has been approved in 2009. Its main objective is to strengthen the COSIT agricultural and agro-industry information services through the provision of capacities to produce comprehensive, reliable, and timely information.

28 The Iraqi SOE sector was and to a certain extent still is a significant drain on the budget for salary payments for excess workers, all of whom are classified as public employees. The cost is calculated at 3 trillion Iraqi dinars (equal to 3 to 5 percent of the total budget). There are additional subsidies for SOEs that are not commercially viable or have been permanently damaged by conflict and mismanagement, and which cannot operate effectively. Source: Iraq Briefing Book, 2010.

29 There are some private suppliers of agricultural inputs, but the GCAS is the major importer. About 250,000 tons of fertilizers are imported annually. Source: COSIT.

The project focuses on improving COSIT's technical capacities to conduct data collection, agricultural and agro-industrial data analysis, reporting and dissemination of the information.

Chapter 4 – Potential and comparative advantages

Iraq is a resource rich country where the agricultural sector has the potential for long-term sustained growth to cover a significant amount of domestic food consumption as well as for exports. Iraq is strategically located amongst a number of countries that offer promising market opportunities for any kind of agricultural commodities it can produce, with particular regard to those high value traditional products for which Iraq has enjoyed in the past, a particular comparative advantage.

It is therefore possible to foresee that in the event political stability and improved internal security are further consolidated and a sound macroeconomic framework is established, market mechanisms reflecting real opportunity costs and prices will facilitate significant private investments in the sector and will result in sustainable agricultural production growth - provided that the terms of trade improve in favour of agriculture. This might not be the case if the high exchange rate typical of an oil exporting country continues to favour agricultural imports and to price agricultural exports out of the market.

There are a number of opportunities for increasing agricultural production and incomes -assuming that the economic scenario would improve and that a market economy would progressively be introduced. Emphasis needs to be placed on promoting the use of better adapted varieties with higher yields and introduction of cultural practices (time and methods of planting, improved soil and water conservation techniques, irrigation practices and better water application methods to improve irrigation efficiencies) that can maximize net returns, changes in the mix of crops (crop rotations and crop varieties) and development of mixed farming systems.

As irrigated agriculture is the largest consumer of water and this is a scarce resource, and as irrigation water is presently applied to a variety of crops including cereals and lower value crops, the

question of water allocation to competing demands will become crucial and dependent on its comparative economic advantages. Detailed analytical work on this subject is required.

Iraq will be dependent on imports for meeting domestic food demand for a few years to come and it is not possible at present to predict which subsectors of the Iraqi agricultural economy will develop such characteristics as to enjoy a comparative advantage on the international markets. However, based on historical trends, it may be possible to infer that promising sub–sectors for short–term expansion mainly include those with good export potential or which offer efficiency gains from import substitution.

The volume of imports provides some indicators for those segments of the food chain that should be targets for domestic production. Fruits and vegetables imported from neighbouring countries are an obvious target and an area where Iraq can be competitive with some assistance in modern production technology, organized packing and assembling and with the development of temperature controlled supply chains. Following production development and the introduction of quality controls, exports of vegetable and fruits could also be envisaged, once local demand is satisfied. For dates, which have always been a traditional export, there should be no problems to increase exports provided work on improved varieties is continued and strengthened.

Food grains and feedstuffs, meat and dairy products could become competitive in terms of import parity prices (as imports substitution) and eventually as in the case of meat and meat products, find a ready market in neighbouring countries.

For milk and dairy products, there should be good potential for growth given the increasing demand from the urban centres. Considerable investments in herd upgrading and cold–chains for milk collection and processing are nevertheless required. Some of the needed investments are presently underway in small private dairy operations, while MoA is working on establishing a capability for herd improvement, through artificial and natural service using improved breeds. In the past, Iraq had developed highly subsidized milk production and processing operations and commercial farms. It is to be confirmed whether such operations would be an economically viable proposition in an open market economy.

There does not seem to be much of a problem on the availability of technological solutions for a first phase development, as in the last few years various technological packages for improving crop and livestock production have been introduced even if on a pilot scale, by government with donors' assistance. Also opportunities exist for agribusiness development based on the previous experiences where large state commercial farms were (albeit inefficiently) linking producers to the market.[1]

More problematic would be any attempt to propose sustainable technical alternatives as a justification for large scale top–down agricultural development programmes in the absence of stakeholders' participation, social cohesion and presence of strengthened farmers' groups and private sector support.

To deal with the challenges imposed upon it by internal and external factors, the agricultural sector has to structurally adjust itself to resolve its major constraints ranging from socio–economic to technical issues within an holistic, multidisciplinary and long–term approach. The way ahead including the definition of the proper role of the public and the private sectors has been set by government in a number of policy statements and by the NDP which provides a detailed analysis of agricultural potential and limitations[2] "*focus will be on the sites most favourable for agricultural production and where provinces have a comparative advantage in agricultural spatial terms…*".

However, comparative advantage will not emerge by means of isolated efforts "in agricultural spatial terms" but will need a favourable investment climate, the presence of interested farmers' groups and last but not least, of social capital.

Thus, the emphasis should be on defining comparative advantage on the basis of territorial characteristics and not on the basis of a narrow

1 For example, feed mills could serve as the link between feed grain producers and livestock producers, and lead to the development of more intensive and efficient livestock production. The date and fisheries subsectors both inland and marine are other example of the sort.

2 NDP: *"The quality of Iraqi agricultural products currently is between 'acceptable' and 'not acceptable' because the wheat and barley crops are of low quality resulting from weakness in their productive characteristics and their susceptibility to diseases. Other basic products like rice, fruit, vegetables, red and white meat, and dates will have a competitive capability if the production and marketing processes are improved to increase farm productivity"*.

assessment of technical potential for specific crops or livestock products and financial or economic comparative and competitive analysis. Hence, the comparative advantage of a development programme in a given area would be defined on the basis of:

- the existence of farmers' groups capable of working together for a common goal and where social capital is a strong unifying factor;
- availability of a minimum of economic and social infrastructure;
- availability of suitable technological packages for the developments envisaged;
- interest of the private sector to participate and assist with provision of services and inputs;
- availability of markets for local production and feasibility of value chains;
- a strong local leadership and a favourable institutional environment;
- previous experience on agricultural and rural development;
- possibility of decentralized management of financial and human resources.

In early 2011, the World Trade Organization (WTO) has entered into a third round of negotiations with Iraq over granting Iraq permanent membership on the basis of a detailed plan presented by Iraq and a legislation approved by the Iraqi parliament to support the country's trade policy. The overall policy on import and export of agricultural commodities and internal price support arrangements will be a subject for discussion. It is likely that detailed comparative and competitive analysis for Iraqi agricultural commodities could be requested (or are already ongoing) in this context.

Chapter 5 – Priority areas for possible collaboration with the World Bank

Priorities Areas for Economic and Sector Work (ESW)

The development framework for the agricultural sector has been set by the NDP: efficient and stable agricultural sector growth, increased food security, reduced rural poverty and enhanced environmental protection and conservation of the natural resource basis. What is needed now is to move from the broad definition of policy guidelines to the formulation and implementation of operational strategies to address critical priority issues concerning:

- improved inter-institutional coordination in planning and programme implementation and capacity building for agricultural sector planning;
- the incentive framework for supporting the private investments in agriculture;
- PDS reform;
- the progressive rationalization of government intervention in agricultural commodity prices with in parallel, a liberalization of the fertilizers market and of other inputs;
- land management and tenure; and
- integrated land and water resources management and conservation.

Inter-institutional coordination in planning and programme implementation, capacity building for agricultural sector planning

The traditional planning approach of the Iraqi administration defines the major goals for the agricultural sector in terms of crop and livestock production targets assuming that each decentralized administration will take care of the instruments necessary for achieving the said objectives[1]. This approach needs to be changed.

1 An example from the NDP: *"applying the principle of integrated rural development through the term of the plan to raise the economic, social, educational and constructional level of rural societies…"*.

NDP and MoA agricultural sector plans should ideally, be prepared on the basis of a bottom up, participatory approach but more important, they should be followed by operational strategies formulated at central and decentralized level (governorate and province) with stakeholders' participation. These strategies should define, inter alia, the priority for small farmers' agriculture, the role of commercial farming, the implications for natural resources management and farming systems, the scope for food security and for a rural development approach as a key government priority for attacking the problem of marginal farming and rural poverty.[2]

Furthermore:

- Programmes and projects are designed and implemented on a sector or subsector basis by each line ministry with little attention to inter-institutional cohesion and cooperation. Interagency cooperation and inter-institutional planning structures have to be set up.
- The Poverty Reduction Strategy approved at the end of 2009 makes specific recommendations to alleviate rural poverty. The NDP does not seem to have translated such recommendations into specific policies for the rural sector.[3]
- Decentralization of agricultural planning, project preparation and agricultural services is to be promoted as an essential instrument to facilitate stakeholders' participation in priorities setting and programme implementation. This could be followed by a progressive privatization of non essential government functions such as extension services and input distribution. Capacity should be built within the MoA for improved policy guidance, regulatory functions, agricultural planning, project preparation, monitoring and supervision.

2 *"… through aligning ministry sector strategies with clearly articulated national priorities, the government's programme can be operationalized with concrete actions at the sector level, while also forming the basis for annual budget submissions…".* Source: Iraq Briefing Book, 2010

3 *"… the plan can seek guidance from the track PRS has established, particularly in the area of targeting … half the poor exist in the rural area … poverty is expected to aggravate in rural areas … for problems related to ownership and management of the irrigation and marketing system … setting programmes for poor farmers … review the package of legislation … and policy in favour of poor farmers … establishing micro credit for the poor …"* Source: National Strategy for Poverty Reduction 2009

Incentive framework[4]

The NDP resolve to support private sector development is not accompanied by a clear definition of responsibilities and followed up by a legislative framework for such support to materialize in practice. How the required synergy between the public and private sector would be implemented? How could private stakeholders have a voice in government policy formulation? What about agricultural finance schemes? How an enabling environment for food importers, exporters, merchandisers, wholesalers and retailers and for agricultural labour markets and value chains would be developed? Which policies and operational support should be provided to responsible institutions to improve roads, infrastructure and facilities and for ensuring the application of the correct rules of the game for major traded agricultural commodities in the presence of the rather porous nature of Iraqi borders and illegal trading?

> … legislation should be formulated to provide a strong legal basis including dispute resolution and contract enforcement. Public–private dialogue should be strengthened to improve transparency and provide institutions and forums for the exchange of views and information between the government and the private sector… a comprehensive investment plan should be prepared for each sector that takes complementarities between private and government investment into consideration…
>
> Source: Iraq Briefing Book, 2010.

PDS reform

Supported by the NDP and Donors this reform has been subject of various interventions but little progress seems to have been made so far. Specific proposals were made in several World Bank, ICI, FAO and UNDG papers including:

- introducing the concept of targeting
- replacing the PDS with universal cash transfers
- reducing the number of products in the ration basket.
- increasing the role and capacity of the private sector both within and outside of the PDS.
- improving procurement and financial management practices

4 WB: Emerging Developments and Challenges *"… private–sector led, job–creating economic growth has to be the cornerstone of any development strategy"*.

A project on PDS reform is currently under execution following the Memorandum of Understanding signed in November 2009 between MoT and the World Food Programme.

Agricultural prices and marketing policy

An agricultural price policy is an integral part of the overall economic policy in the country. The amount of support provided in Iraq to agricultural commodities and farm inputs has passed through different stages but market liberalization and an end to price support seems now to have been accepted by government as a necessary ingredient of any policy reform. There are nevertheless social and political problems and pressure from producers which tend to delay the decision making process and result in uncertainty as to the degree of subsidy that will be applied to inputs and outputs in any given season. Such uncertainty affects both producers and market operators at the same time.

Reform of the subsidy system should: i) ensure that the types of subsidies and their magnitude are in line with WTO requirements in order to avoid hindering Iraq's eventual accession; ii) link the reform of the Public Distribution System to removal of price disincentives for domestic producers; and iii) take into consideration the potential impact of alternative consumer food subsidy programmes on domestic producer prices.

Is it possible to envisage an agricultural price policy framework such as that the relative prices of food grains, livestock and other agricultural outputs and inputs would be in line with world market prices, national food security, nutritional enhancement objectives, sustainable agriculture and rural development goals and comparative advantages in internal and external markets?

Land management and tenure

Land management and tenure policies and poor social organizations have made it impossible to develop effective common–property management programmes that encourage beneficiaries to use and maintain rangelands in a more sustainable manner. A land management system that can address tenure issues and resolve disputes based on the rule of law is not covered by current policies.

The land tenure system needs reforms and firm GoI commitment to proceed along clear guidelines. Legitimacy can be fostered

through adequate policies and systems of information management, provided that the development of these is gradual, transparent, and participatory. The modernization of land tenure management information systems requires improvement both of formal and informal systems. The advent of decentralization, local self–governance, and participatory decision making would be an essential prerequisite.

Integrated land and water resources management[5]

The integrated approach to balancing water supply and demand and water resources allocation to different users requires a land management strategy to address the degradation of irrigation and drainage systems, soil rehabilitation problems and low soil fertility due to high levels of salinity and wind erosion. The removal of these constraints will require substantial public investments. The NDP provides indications as to the priority for appropriate policies,[6] and for a legislative and institutional framework which adapt the principles of the integrated water resources management concept to Iraq's specific context but fails to address:

- the policy for setting the appropriate level of water charges and responsibility for the operation and maintenance of the irrigation and drainage schemes;
- incentives for efficiency gains to ensure that water scarcity is appropriately signalled to water users. Transparent, stable and transferable rights to water use for individual users or groups of users are powerful instruments for promoting efficiency and distribution equity;
- policies for developing an integrated approach to water, with inter–ministerial coordination in planning and investment decisions introducing: i) procedures for providing water services based on user demand, leading to more financially autonomous service providers in both irrigation and water supply and sanitation, and ii) managing water resources and water service functions at the lowest appropriate level, a region, province, river basin, municipality, or community/water user association (whichever is relevant for a particular function);
- capacity building programmes in water management and conservation, desalination technologies and agricultural

5 This section draws from World Bank: Water Resources Assistance Strategy, 2006, and UN Briefing Book, 2010

6 *"Issuing special legislation for managing water through the participation of governmental parties and beneficiaries (societies of water users)"*. Source: NDP

crop water management techniques. All the key agencies responsible for water resources management, specifically the Ministry of Municipalities and Public Works (MoMPW), Municipality of Baghdad (MoB) and Ministry of Water Resources (MoWR) should be involved. Media campaigns that explain the benefits and necessity of water conservation should be launched;

- biodiversity and environmental protection: addressing the integrated management of water and land resources based on the principles of environmental sustainability, guaranteeing the protection and contributing to the restoration of Iraq's aquatic eco–systems and of their biodiversity. This should include the development of a sustainable marsh water management plan for the southern Iraqi marshes to support their biodiversity, fisheries development and other economic improvements.

Outline of a Possible Development Policy Loan

The Development Policy Loan (DPL) could assist GoI in implementing the NDP reforms, taking into consideration the need for a progressive approach and to focus first, on those reforms on which the widest consensus from all stakeholders can be achieved. Aspects to be considered in the proposed DPL could be the following–not necessarily in order of priority:

- Inter-institutional coordination in planning and programme implementation, capacity building for agricultural sector planning. Structural reforms aiming at setting up coordination structure/s for planning and programme implementation involving ministries concerned with rural development. In parallel, strengthening of the MoA Agricultural Sector Planning capacity and equivalent functions at the level of MoWR and other relevant institutions. Similar reforms implemented at governorate and provincial level.
- Incentive framework. Legislation to set down the basic principles for cooperation between the state and the private sector in the agricultural sector: i) encouraging private and foreign investment in agricultural development, ii) supporting the establishment of agribusinesses and other industrial ventures, iii) fostering joint state/private companies where the state participates with initial capital in the development of shareholding companies, later to be privatized and

iv) developing and strengthening appropriate financial markets. On agricultural development financing, formulation of a set of policies that would replace the various ad hoc initiatives based on subsidized lending terms and conditions with a view of setting up an Agricultural Credit system based on best practices.

- PDS, agricultural prices and market oriented reforms. The reforms to be carried out would depend on the outcome of the work on the subject by the MoT/WFP project and any additional ESW studies carried out with assistance from the World Bank.
- Land management and tenure. Basic principles and legislation, for: (i) soil management and conservation, (ii) common–property management programmes, (iii) appropriate use of agricultural lands[7], (iv) the problem of land fragmentation, (v) types of land holdings i.e. freehold of individuals or groups and state–owned lands, (vi) inheritance laws, and (vii) joint ownership.
- Land and Water resources management. A Water Management Law which would regulate, inter alia: (i) inter-ministerial coordination in planning and investment decisions including water resources management and biodiversity and environmental protection; (ii) responsibilities within the irrigation schemes between MoWR and MoA for water use and irrigation management at field level; (iii) the criteria to be used for water delivery to end users in the irrigated areas and incentives for efficiency gains; iii) the water charges to be applied; and (iv) the responsibilities of water users' associations. These topics to be addressed in consultation with the EU funded Water Management project.

Opportunities for Investment Lending

The rehabilitation and development of the Iraqi agriculture is a medium/long term aim which can only be achieved through a coherent, coordinated effort based on two pillars: Policy Improvements and Investment Projects including, rehabilitation of support services and capacity building.

7 A Law on Cadastre and Property Registration has been approved by the Parliament, and a Cadastre Agency has been created. Source: NDP.

The strategy to formulate a portfolio of possible investment project/s would aim at changing the traditional GoI top down centralized sector planning and programme development focused on a crop/livestock subsector approach and by adopting a broader rural and community based development strategy which would:

- Build on territorial comparative advantages;
- Aim at capacity building at all levels, farmers, government services, the private sector;
- Formulate projects on a participatory basis with a bottom up identification of priorities and with rural communities in the driving seat;
- Increasing investments in the rural areas: social and economic infrastructure, irrigation and drainage, land management;
- Introduce innovations in traditional crop and livestock production, in farming systems and marketing practices, with emphasis on value chains;
- Foster private sector participation including for the provision of farm inputs and services;
- Introduce new mechanisms for inter-institutional coordination at central and decentralized level; and
- Adopt a holistic approach to development where improved policies and public investments in social and economic infrastructure and services would stimulate private sector participation, addressing cross cutting themes as poverty alleviation and gender and building up social capital for sustainable growth.

… systematic and institutionalized local participatory planning processes would ensure that: (i) local priorities are identified through gender–sensitive, inclusive and multi–sectoral processes, which provide an opportunity for all, including the most vulnerable, to voice their views and priorities; (ii) district and sub–district priorities are acknowledged in the development objectives of the province; (iii) provincial development planning is synchronized with the national planning calendar and that the process incorporates district plans while consulting with line ministries, civil society and the private sector… begin local planning and area–based development. Decentralized service delivery that coordinates with new initiatives for area–based and community–driven development can be particularly effective in empowering local communities, where needs are prioritized through broad–based and participatory consultation, and beneficiaries are involved in programme execution, oversight, and accountability… (Source: Iraq Briefing Book, 2010.)

To increase the chances of success, the territorial–community driven development strategy could:

(i) Be part of a medium term programme started in a few selected governorates, where political, technical, institutional and economic conditions would be the most favourable;
(ii) Limit the scope of first phase development at tackling those issues of immediate concern to the stakeholders;
(iii) Introduce selected features of governorate and provincial level planning and administrative and financial decentralization;[8]
(iv) Include a reformed extension service at local level as a pilot for a nationwide reform and a minimum research capacity geared to serve the immediate needs of local agriculture;
(v) Focus on building up capacities and social capital; and
(vi) Pilot first phase land management and tenure improvements.

Territorial Community Driven Development: Project Outline

A Territorial–Community Driven project could include policy adjustments and investments in infrastructure, farm development, services, capacity building, institutional restructuring and technical assistance. It would be implemented in a few selected governorates as a first phase, adapting strategies and investments to the stakeholders' priorities and local comparative advantages.

Examples of technical opportunities for investments that could be comprised in a "menu" of options for the formulation of the project are outlined below. The project concept is based on previous successful World Bank experience in other countries.

Irrigated farming

The irrigation rehabilitation programmes carried out by GoI in the last few years are based on localized interventions aiming at solving immediate problems but without a long term view of development. Most often the restoration of the major pump stations has not been followed by parallel improvements in irrigation efficiency, the introduction of financially and economically sustainable cropping systems, strengthening of water users' associations, capacity building and training of farmers, government staff and technicians and other private sector stakeholders.

8 *"… develop planning capacity in governorates. In view of the constitutional concurrent authority of the governorates in development planning within their respective territories, governorates need to respond to national priorities with governorate–level development priorities and corresponding plans…"* Source: Iraq Briefing Book, 2010.

Project strategy would prioritize complementary investments for development of the areas commanded by pump stations which have already been rehabilitated[9]. Selection of the project areas will be the responsibility of the local authorities, participating water users' associations, local stakeholders and of the MoWR and MoA (and other institutions/agencies as deemed necessary). For identifying priority areas, the following main selection criteria could be applied: (i) reasonable size of command area and the need for rehabilitation of the distribution/drainage systems; (ii) interest of farmers and their willingness to join water users' associations and assume related obligations; (iii) agricultural potential; and (iv) economic and financial viability.

The project would finance rehabilitation of the distribution (secondary and tertiary canals) and drainage systems in the command areas served by the pumping stations and training for the MoWR technicians on irrigation technical issues. Technical measures could include improvements in on–farm water management practices, changes to less water consuming cropping patterns, increases in cropping intensity and improvements in farming practices such as fertilizer use or choice of varieties to increase productivity per unit of water.

On the agricultural side the project would establish, for each command area, pilot demonstration areas (PDA) which would also serve as demonstration and training farms, with an individual size tentatively varying between 50 and 100 ha. The economics of crop growing under irrigation would be studied and preference given to those high value crops for which the territory has a particular comparative advantage. MoA technicians would be trained in new methods of extension and transfer of technology and would take up the responsibility for implementing the agricultural development activities in the selected PDAs.

In each PDA, demonstration of improved farming and water management practices would proceed in parallel with the restoration of facilities for applied research and technology transfer and specifically designed training programme based on Farmers' Field Schools (FFSs). At the same site when applicable, IPM[10]

9 As an order of magnitude, it could be estimated that each command area could include on average, about 10,000 ha.
10 Integrated Pest Management.

techniques would also be introduced. The PDAs and the project would be the test and justification for larger and much expanded irrigation rehabilitation programmes that would take place in the medium term.

Participating farmers would receive specific training on the concept of WUAs (Water Users Associations) that as soon as feasible, should progressively take over the operation and maintenance of the irrigation systems.

Date palms

USAID, under the Assistance for the Reconstruction Programme for Iraq (ARDI), has financed the distribution of plants of local varieties for increasing offshoots nurseries production in 13 governorates. In addition, in order to promote date palm cultivation in the marshlands and increase farmers' income from date production, ARDI has been working with an Iraqi NGO to help date palm farmers to improve their existing orchards by providing offshoots to each farmer. NGO technical specialists have been training farmers on improved cultural practices, proper use of fertilizer and pesticides and intercropping.

GoI has shown a firm commitment for the rehabilitation of the date sub sector and has created in 2005, the General Board for Date Palms with main responsibility for programme coordination. It has funded out of its own budget, six projects for the date palm sub–sector.[11]

The existing date palm species of Iraq are the traditional ones and their date products are commonly classified in the international markets as "common dates". Because of this, they only fetch very modest prices which do not guarantee a satisfactory economic profitability. A new sustainable dates development programme is required. It should be supported by: (i) an identification, locally or abroad, of new high value varieties; (ii) the preparation of a good

11 These are: (i) establishment of 26 mother trees orchards in each of the 13 provinces traditionally involved in date palm production; (ii) establishment of 10 donums (2.5 ha) nurseries for seedlings production in Razzaza and Barjaseya stations; (iii) rehabilitation of orchards by providing farmers with funds for sustaining the production of palm offshoots; (iv) establishment of 5 units in Baghdad, Babel, Wasit, Thi Qar and Basra, for the introduction of modern techniques in date processing, packing and marketing and for training of extensionists and technical staff; (v) support to the introduction of plant tissue techniques; and (vi) provision of machinery for transplanting plant trees from the Date Palm Board Orchards to the owners' orchards. *No details are available on the impact and results of these projects.*

marketing strategy to orientate the future development of the sector towards the international markets; and (iii) a comprehensive work plan for the research and extension services which will use the tissue culture laboratory at Al Rabaeea for mass propagation of plantlets and pave the way to the subsequent phase of replanting of the existing plantations.

A possible project would support the rehabilitation of the date sub–sector improving its ability to compete on the external markets and providing a safe food for the local population by: (i) building up on the achievements of the FAO and USAID assisted projects; (ii) introducing and strengthening applied research on better varieties with good market prospects; (iii) multiplying and distributing improved varieties to demonstration farms; (iv) assisting farmers in improving their cultivation techniques; and (v) assisting private entrepreneurs in developing value chains.

Project areas would be selected on the basis of agroecological suitability and farmers' commitments. A possible project could include a range between 1000 to 2000 date producers with about five ha each of date plantations. The project could benefit a larger number of date producers by making available superior planting material, and through the demonstration orchards by publicizing the adequate cultural practices and the use of inputs for sustainable orchard management.

Saltwater fisheries

The large majority of fisheries projects carried out until now are directed to improve freshwater fisheries. No support has been envisaged so far, to those resources, lakes and marshes, formed by brackish/saline water where there are already traditional fishery activities. In these areas (Lake Razzaza – Karbala, and in the marshes areas), which represent approximately 40 percent of the total resources available for inland fishery, there are approximately 4000 fishermen currently in operation: they could play in future, an important role for the development of the fish sector in the central and southern areas of Iraq.

The proposed project would be implemented with the active involvement of fishermen's and fish farmers' groups. The key components would be: (i) fishery infrastructure establishment for adaptive research; (ii) training of technicians, farmers and fishermen

in the production of genetically improved fingerlings; (iii) introduction of modern fish farming techniques and fisheries management in reservoirs, ponds and cages; (iv) assisting fish farmers to integrate fish culture practices with poultry, duck and livestock whenever applicable; (v) emphasizing an integrated approach to aquaculture; (vi) adopting a community approach for lake/marshes fishery; vii) associating local authorities in project implementation and in the enforcement of the fisheries management legislation; and viii) promoting private sector participation with fish assembly and marketing facilities.

Livestock

Dairy production. The project–to address the urgent needs for building new foundations for a modern, dynamic and sustainable dairy production system in Iraq–would build upon the achievements of the past and ongoing programmes for the rehabilitation of the artificial insemination centre in Baghdad and resumption of quality semen production and distribution to farmers for cattle breeding. The project would comprise a series of activities to be implemented in pilot areas, to be identified. These will include the setting up of regional semen distribution systems and related facilities to accelerate breeding programmes and genetic improvements, complementary investments in milk collection centres linked to a milk processing plant and capacity building of local producer groups who could ultimately evolve into a National Association. A progressive privatization of essential services to dairy cattle farmers like extension and veterinary services, farm inputs and drugs, vaccines and other veterinary supplies could be envisaged. Project design would be based on a participatory approach. Experience gained with the pilot experiences would be replicated and disseminated in subsequent phases of the programme in other suitable regions of Iraq.

Commercial poultry. Investments are needed to assist government and private operators in the transition to modern, productive, sustainable and organised systems of production. Activities to be financed could include: the rehabilitation of central farms for genetic improvement and supply of parent stock, broiler and layer farms for the supply of chicks, support to the functionality of central quality control laboratories reconstructed by the MoA, specialized training of the staff and technical assistance for the installation, maintenance and utilization of the laboratory equipment and for the

establishment of producers' associations. These could later evolve into an integrated inter–professional federation of the poultry sector operators, benefiting from the lessons learned in similar countries of the region.

Small ruminants. Small ruminants, namely sheep and goats, performances in Iraq were severely reduced during the last two decades, in comparison with international and regional standards due to massive selling outside the Iraqi borders, loss of genetic potential, reduction in herd size and absence of breeding programmes. Improving the genetic potential and husbandry practices will increase productivity, income and food security among the predominantly poor small ruminant farmers and herders in Iraq. A project could assist in defining and implementing breeding strategies and breed conservation and genetic improvement programmes including rehabilitation of research/demonstration centres for technology transfer, strengthening research and extension capacities through training of extension agents and farmers and promote the creation of producers' groups who could gradually evolve into self sustained operations for the provision of essential services to their members and into a National Association.

Food safety

GoI has carried out with FAO assistance, a first phase project to improve food safety and increase the potential of the food trade sector in Iraq through: (i) creating a coordination mechanism for a comprehensive national level food safety system including the establishment and operation of a National Codex Committee; (ii) strengthening the capacity of the national institutions and of their staff; (iii) improving the environment for the development of entrepreneurship in the food processing sector; and (iv) assuring food safety improvement throughout the food chain.

These activities only partially resolve the problem of inferior quality imports. Additional investments are required to complete the establishment and rehabilitation of the land border check–points along with the sea and airport stations for an effective control of all food entries into the country.

The project would: (i) complete the rehabilitation and modernization of the border inspection and control infrastructure of check–points; (ii) finalize the review of the existing food legislation to be

subsequently approved and promulgated; (iii) revise food standards and harmonize them with the internationally accepted CODEX standards; (iv) strengthen the surveillance and control system of food born diseases; (v) modernize the central and regional food control laboratories; and (vi) improve and modernize the food processing system.

Strengthening agricultural sector planning and project preparation

The technical capacity of the MoA for policy and strategic planning is weak. The project (which should be considered as a component of the technical strategy), would be designed to strengthen MoA in all its functions concerned with planning, project preparation, monitoring and supervision, facilitating an holistic and participatory approach to the formulation of integrated agricultural and rural development projects. It would aim at setting up an Agricultural Sector Planning and Project Preparation Unit to support the MoA in policy assistance, formulation of agricultural sector plans, the preparation of projects for government and/or donors' financing and project monitoring and supervision.

The project could be a first phase of a larger effort designed to build up capacity at governorate and provincial levels for participatory planning and project formulation. In this first phase Iraqi technical staff could benefit from the assistance of international experts specialized in the formulation of agricultural sector plans and investment projects preparation.

APPENDIX 1
Map of Iraq



The designations employed and the presentation of material in the map do not imply the expression of any opinion whatsoever on the part of the World Bank or FAO concerning the legal or constitutional status of any country, territory or sea area, or concerning the delimitation of frontiers.

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