A TRANSITION PLAN FOR THE AGRICULTURE SECTOR IN IRAQ

Final Report: Volume 1

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FORWARD AND DISCLAIMER

This transition plan is intended to move the agriculture sector from Coalition Provisional Authority (CPA) responsibility to the Iraq Ministry of Agriculture (the Immediate Transition Plan) and to move the sector from a command and control production and marketing system to market-driven agricultural performance (the Medium-term Plan). The Plan has been assembled with the assistance of the Ministry of Agriculture (MOA) and the CPA by the United States Agency for International Development (USAID) contractor, Development Alternatives, Inc., under the Agriculture Reconstruction and Development Program for Iraq (ARDI).

This transition plan, immediate and medium-term, is not an agricultural sector strategy. The knowledge base is not sufficient, and the circumstances are too unsettled and unique to allow programming a course of action for the future of Iraqi agriculture based upon the very special conditions existing in 2003-2004.

The plan is deliberately general, setting forth the basic principles and recommendations for a revitalized, commercialized private agricultural sector. Details, data, and analysis are included in the Annexes and located by footnotes in the main text.

This plan, like almost all other in post-conflict Iraq, suffers from an absence of hard data on much of the agricultural sector. Wars, embargoes, and looting have effectively reduced the information base in 15 governorates to remembrances and estimates. Where data are presented, they need to be qualified as the "best available."

On many days the inability to move around freely in Baghdad and into the countryside has restricted the team's firsthand observation of current agricultural production and practices. We know there is much unutilized land under irrigation command, but do not have convincing answers as to why. Perhaps, as is probably the case, there is a multiplicity of answers, depending on the circumstances that have affected the particular land under consideration. The time to sort the influencing factors and determine cause and effect was not available.

As much as has been learned serves to demonstrate how much more there is to be discovered. In spite of the unknowns, the Transition Team has high hopes for the revitalization of agriculture and for the Iraqi farmers who have suffered greatly from past centrist and special interest policies.

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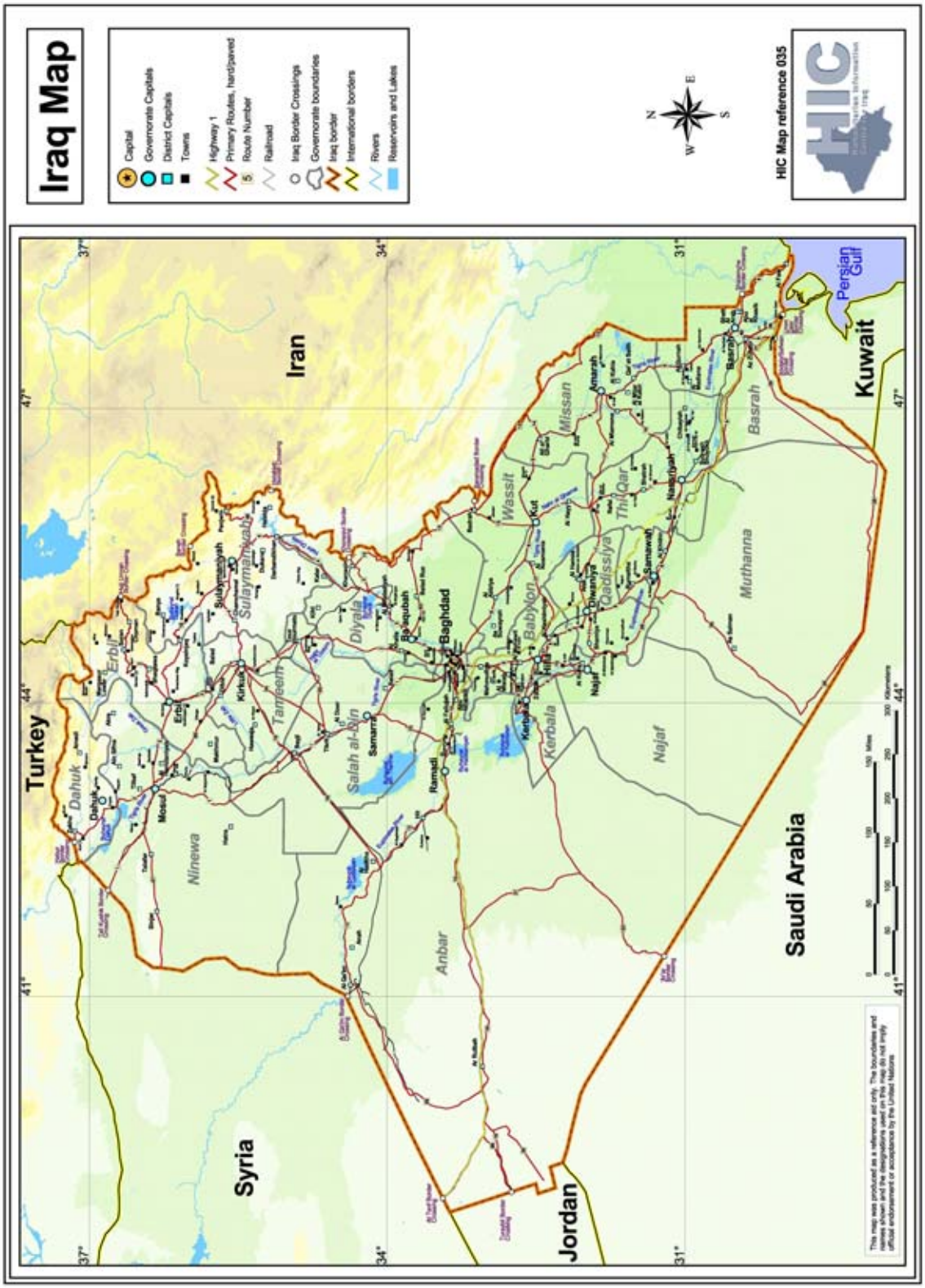
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EXECUTIVE SUMMARY

INTRODUCTION

The agricultural sector in Iraq has a set of resources, both physical and human, that could contribute substantially to the country's economic recovery and subsequent development. Iraq is rich in land and water and its climatic conditions are favorable to a wide range of crops. These resources, if rehabilitated and used properly, can improve Iraq's food security and gain considerable export earnings. Iraq has highly trained agricultural scientists who have suffered from a 20-year "science gap" and who are eager to move the sector into the 21st century.

Harnessing these resources and the energy of Iraq's people to make the country's agricultural sector productive again is the goal of this transition plan. The sector is faced with two basic challenges: 1) immediate and short-term recovery and rehabilitation of the agricultural infrastructure, and an end to those policies that prohibit recovery; and 2) medium- and longer-term implementation of policies and programs to strengthen the private sector to lead a market-based agricultural economy with strong support from the Government of Iraq (GOI). The goal is to create an environment in which the private sector, including farmers who take risks and make profits, and the public sector, providing governance and assistance, cooperate to achieve equitable growth.

SHORT-TERM STABILIZATION PLAN

The agricultural sector has fallen further behind in the postwar period. The war and its aftermath, including looting of many facilities, did substantial damage to the infrastructure. More importantly, the institutional and economic framework disappeared with the old regime and alternative mechanisms have not been activated to help agriculture recover. In 2004, the sector faces a bleak prospect in which production falls below pre-war levels and poverty in rural areas becomes worse than before. Activities and issues pertinent to stabilizing production levels and returning them to pre-war levels or better are discussed in the first part of this transition plan.

Providing agricultural input supplies. Farmers have insufficient quantities of inputs and what they have is poor quality. For decades, farmers have not had access to modern technologies, nor have their economic circumstances permitted them to purchase adequate supplies from private sector sources. In the postwar period, the situation with respect to inputs has worsened. In the winter season of 2003-2004, for example, only 8 percent of the estimated requirement of nitrogen fertilizer was made available to farmers in the 15 non-Kurdish governorates. To get this sector moving immediately, fertilizer, good quality seeds, proper pesticides, and other inputs, including electricity and diesel for machinery, must be procured and provided to farmers. The stabilization plan calls for the Ministry of Agriculture (MOA), with help from the Coalition Provisional Authority (CPA), to plan for the

procurement and distribution of inputs using the $200 million subsidy budget held in the Ministry of Finance. This process is underway. Farmers should receive badly needed inputs for the 2004 summer growing season.

Re-establishing the domestic market for wheat. To achieve rapid increases in production, it is essential that farmers receive prices that provide an incentive to produce. One of the main reasons for the rapid decline in production in recent years has been lack of demand for agricultural products at remunerative prices. The Ministry of Trade (MOT) has announced a purchase price of $180/ton for grade one wheat for 2004, and while this is below world market prices, it is a welcome increase over past years. But this is not enough to revitalize wheat production. The stabilization plan proposes that the MOT and the private sector begin an orderly transition from a wheat market characterized largely by direct government participation to a preponderance of market-based private sector participation. This will lead to farmers receiving international prices for wheat.

Reclaiming the natural resource base. The soil and water of Mesopotamia should form the base for highly productive agriculture, but they do not. Problems with waterlogging and soil salinity reduce cultivable land by at least 25,000 hectares annually. To halt this degradation of the resource base requires immediate rehabilitation of drainage systems and short-term improvements in on-farm irrigation. This work is ongoing and will take several years to complete. MOA should focus on rehabilitating on-farm canals and strengthening extension services to maximize the impact of rehabilitated irrigation systems.

Rehabilitating and re-equipping MOA facilities. On the eve of the 2003 war, the infrastructure that supported agriculture was in poor shape. What was there was almost completely destroyed in the aftermath of the war. Rapid recovery of the sector depends on rehabilitating numerous facilities that provide important support services to the farm community. The main priorities in the stabilization plan are reconstructing veterinary clinics in the 15 southern governorates to protect the national herd and repairing and re-equipping research and extension facilities to support the immediate transfer of new technologies to farmers. Further rehabilitation includes the following: a) restoring date palm nurseries to rebuild and protect Iraq's valuable date palm varieties; b) establishing quarantine stations to permit import and export of plant material and animals; and c) rehabilitating soil testing laboratories at the governorate level.

Establishing floor prices for maize and cotton. Production of maize and cotton will decline considerably this year due to lack of an assured market. These two commodities are considered strategic crops in Iraq because of their importance as inputs into industrial subsectors. To avoid sharp declines, the stabilization plan proposes that the GOI establish for cotton and maize floor prices below expected international prices but high enough to provide farmers an incentive to produce. The market would not be distorted by this action and the GOI enters only as a buyer of last resort.

MEDIUM-TERM TRANSITION PLAN

The medium-term transition plan has three components:

- Creating a policy environment for market-led growth;
- Building capacity in the MOA to support market-led agriculture; and
- Strengthening the agriculture sector through national programs.

Creating the appropriate policy environment. To move agriculture forward, the government must cede control of production decisions and focus on regulation, supervision, and certification of private sector activities. The legacy of government controls extends from input provision to output prices for "strategic" crops: wheat, barley, maize, and corn. Heavy government interventions have created enormous distortions in agricultural prices and markets. Efficient, wealth-creating production and marketing depends on a policy environment that treats the private sector as the foundation for sustained recovery and a platform for Iraq's re-entry into world markets. This plan includes specific actions and a timetable to disentangle the government from agricultural markets.

A transition period is necessary to move from where the sector is to where it should be. Some input subsidies—fertilizer, chemicals, farm machinery—must be phased out while national resources are protected through government provision of animal vaccines against epidemic diseases, fungicide treatment for wheat seed, spraying of date palms, and provision of soil testing services to allow customization of input recommendations. Export restrictions on major crops—all those included in the public distribution system (PDS)—and on animals add major complications that must be resolved.

Reform of the PDS is necessary for a healthy agricultural sector. The universal nature of Iraq's PDS has a two-fold damaging effect on the sector. First, free food for everyone dampens demand and thus prices for agricultural produce, hampering farmers' ability to earn income and increase production. Second, nearly all food for the PDS is imported; what is obtained domestically is purchased far below international prices. Energizing agricultural markets requires dealing with the politically sensitive issues involved in universal food distribution. This plan calls for two reforms of the PDS. The first calls for eliminating the market disincentives associated with the current limited and price-controlled domestic purchases. The plan includes a pilot program for voluntary monetization of portions of the food basket as a nondisruptive means of recreating the demand for domestic agricultural food forfeited to the PDS program. The second reform calls for gradually reducing the scope of the plan, so that it becomes a needs-based rather than a universal plan.

Enabling public sector capacity to support a market-based agricultural economy. In a new policy environment, the MOA requires institutional strengthening. The Ministry's job in the old agricultural sector was to distribute inputs and collect outputs. There was little focus on creating a regulatory environment to govern the sector. This plan will focus on reconstructing the rules of engagement between the private and public sectors to ensure production, marketing, and processing that is safe for humans and the environment, and to ensure the rights and interests of farmers are protected. For example, the plan includes activities to

develop and implement regulations in phytosanitary and sanitary protections, seed certification, pesticide marketing and application, and other regulations required in a modern agricultural economy. This includes training government officials who will be responsible for fair and transparent application of those rules and regulations. In addition, the MOA will need to develop capability in policy and economic analysis (to advocate for changes in policies that affect the sector) and in information management, data gathering, and information dissemination—new and important functions in a market-based agricultural economy.

The MOA will provide technical and marketing knowledge to farmers in Iraq who have not had access to modern inputs and technology. The isolation of the past decades has not permitted the sector to take advantage of international progress in agricultural technologies. In addition to taking steps to develop appropriate regulations for the sector, this plan includes steps to ensure technical and marketing knowledge becomes widely known in Iraq. The MOA will undergo a process of reorientation and retooling to support the needs of a private sector agricultural economy. It will provide world-class research and extension and services such as plant and animal disease diagnostics and soil testing. The goal of MOA is to support the growth and productivity of agriculture while overseeing the sector's health and safety.

Programs for development of the sector. In addition to policy reform and capacity building of the public and private sectors, the transition plan proposes that the MOA and other agencies in government and the private sector engage in national development programs to speed up the process of economic recovery. The MOA will need to establish the capability to coordinate donor activities so that donors work and contribute to a common agenda set through a collaborative process. This common agenda will take into account funds available from various sources, be they MOA internal funds or donor funds. Finally, in this transition plan, there is a specific proposal for the Ministry in Baghdad to work together with regional local authorities in the north. The agricultural policy issues in the northern 3 governorates are similar to those in the lower 15, and while agricultural development in the south is constrained by a set of obstacles very different from those in the north, approaches to solving problems and finding solutions can be usefully shared.

Development of financial resources for agricultural production and agribusiness. Formal financial markets are only beginning to recover in Iraq. In rural areas, effective financing of agricultural activities has been absent for many years. An injection of working capital is desperately needed by both farmers and agribusinesses to jump-start the agricultural economy into producing and processing efficiently again. The transition plan considers the immediate needs of the sector and options to assist in redeveloping a financial system that supports agricultural modernization.

National programs in wheat production, sheep production, and date palm restoration. Programs for developing these sectors are to be tested in two governorates to get the technology and delivery mechanisms right. Thereafter, successful programs will be expanded to other parts of the country. The activities proposed will make a major contribution to agricultural employment and gross domestic product (GDP) by replacing wheat imports with efficiently produced, high-quality domestic wheat, and will support export earnings through small-scale sheep production. The plan proposes a countrywide program in date palm

production, marketing, and export to combine the natural comparative advantage Iraq has in date production with activities to improve the competitive position of Iraqi date palms in international markets.

Reclamation of land and water resources. Sustained improvements in agricultural production require investments in land reclamation and improvements in water resources. Reclamation of saline soils is a long-term investment, but one that will provide substantial long-term benefits to the agricultural population. Irrigation improvements at the main system level will be accomplished through the Ministry of Water Resources, aided by contracts with the Army Corps of Engineers. We propose to develop pilot projects that will direct efforts to tertiary and on-farm improvements within the improved systems. Land reclamation and improved on-farm irrigation go hand in hand to assist in providing farmers maximum opportunity to respond to market forces.

Land privatization is a complicated and necessary concomitant of a market-led agricultural sector. Land is the fundamental resource for farmers and it should be held by private owners who can both improve the resource and capture the rewards at sale. This plan defines the scope of the issue and calls for the next step in understanding how to initiate necessary changes in the current system.

Protecting vulnerable groups as the market economy takes hold is a special responsibility for the new MOA and its partners in the development community. These groups—displaced families, the very poor, subsistence farmers—may be bypassed as the country transitions to a market economy. There are no easy methods to ensure those most deprived in the past will not be made worse off in the future. Because this is difficult, those involved with the transition must work that much harder to find organizational structures and mechanisms that will support vulnerable populations. The transition plan identifies various ways of reaching down into rural communities to provide necessary assistance.

CONCLUSION

The transition plan for agriculture is intended as a guide in moving from government control to an agricultural sector based on markets and led by private initiative. The MOA will provide strong support in policy and economic analysis, enforcement of regulations to protect human health and the environment, and research and extension. The private sector will invest and provide jobs and incomes for large portions of the population throughout the country.

Iraq has tremendously rich agricultural resources. With proper management of its soil and water and with good policies and regulations, agriculture will become an engine of growth for the entire Iraqi economy.

INTRODUCTION

The agriculture sector in Iraq is marked by woefully low productivity and a lack of employment and income opportunities for the rural population. While much of this malaise is the direct result of sanctions and the war and its aftermath, the root causes date back to the late 1960s when the Iraqi government's policies affecting the agriculture sector were first formulated. These policies suffered from two basic shortcomings: a general neglect of agriculture relative to other sectors of the economy; and a socialistic centrally planned approach that determined the major crops to be grown, subsidized the inputs, set official prices for what was produced, and established government-owned or controlled industries for processing these products.

Many of the government programs and state-owned enterprises during the last 15 years were technically sound, including seed and seedling production, veterinary services, the fertilizer factories, and the foot and mouth disease vaccine factory. But, overall, government controls stifled private initiative and the agriculture sector floundered. The most serious problem is in the irrigated areas, which account for 70 percent of the total cultivated area and an even higher percentage of total agricultural production. Dating back several decades, poor management and lack of maintenance of primary and secondary canals and on-farm irrigation and drainage canals has resulted in a dilapidated infrastructure and an estimated 50 percent of irrigated land being either saline or waterlogged.

The situation became considerably worse during the sanctions. Initially, with a complete ban on imports, production of food crops rose in response to increased demand. However, the inability to import agricultural inputs and spare parts led to sharp declines in production. At the same time, the purchasing power of Iraqis dropped dramatically, resulting in low effective demand for all products, including food crops. Then, beginning in 1997, the universal distribution of free food under the Oil for Food (OFF) program caused whatever was left of the domestic market for agricultural products almost to disappear. Finally, the war and its aftermath destroyed key agricultural facilities and severely disrupted input supplies to farmers.[1] Agricultural production remains at very low levels and rural poverty is widespread. In much of the country, 60 to 80 percent of the rural population is said to be fully dependent on the PDS to meet basic needs, and in some areas it is 100 percent.[2]

The effects of the 2003 war and its aftermath must be addressed as a prerequisite to development of the sector. This plan calls for immediate restoration of the sector's productive capacity at least to where it was before the war. This requires the continued rehabilitation and re-equipping of damaged and deteriorated infrastructure and facilities and the immediate supply of critically-needed inputs to farmers.

Once the reconstruction effort has been completed, the main participants in the agricultural sector in both the private and government sectors must carry out a transition from the largely

[1] The damaged facilities include irrigation infrastructure, silos and warehouses, agroprocessing plants, seed production and certification facilities, plant and animal disease control facilities, and research and extension centers.

[2] See Annex 11 for survey results of the purchasing power of the rural poor near Basrah.

state-controlled sector of the past to one that is market-oriented, efficient, productive, and employment generating. Iraq has tremendously rich agricultural resources. With proper management of its soil and water resources, and with good policies and regulations, agriculture will become a growth engine for the Iraqi economy rather than the lagging sector it has been for at least three decades.

The transition plan, therefore, has two parts:

- *A stabilization plan to restore agricultural production and create jobs in the short term (one year); and*

- *A medium-term plan (3-5 years, beginning now) to bring about the transition from a state-controlled, noncompetitive and declining agriculture sector to one that is market-oriented, economically efficient, productive, and employment generating.*

SHORT-TERM STABILIZATION PLAN

The objective of the short-term plan is to achieve rapid increases in agricultural production and rural employment. The plan has five components:

- Supply inputs to farmers;
- Re-establish the domestic market for wheat;
- Rehabilitate on-farm irrigation infrastructure;
- Rehabilitate and re-equip MOA facilities needed to support rapid increases in agricultural production; and
- Provide a 2004 floor price for maize and cotton.

SUPPLY INPUTS TO FARMERS

The input supply system is in disarray. The government is logistically and financially unable to meet national requirements and the private sector is unable to fill the void. The private sector has not yet had time to build up its capacity to produce or import inputs and distribute them to farmers. The private sector is also hampered by the absence of announced government policies relative to subsidies and public sector involvement in input supply. It is unable—or understandably unwilling—to make the necessary financial and logistical commitments.

The situation, however, can be quickly and easily improved. The 2004 budget includes $200 million for agricultural subsidies. In addition, there are large quantities of vegetable seeds already purchased under the OFF program and available for immediate distribution to farmers.[3] Finally, a large quantity of agricultural machinery and irrigation equipment, also purchased under the OFF program, is currently stored in State Company for Agricultural Supplies (SCAS) warehouses, and can be immediately sold to farmers.

The MOA's 2004 plan calls for the following next steps:

Sell the equipment in the SCAS warehouses. Not only can this equipment be immediately used by farmers to increase production in 2004, the warehouse space is needed for the distribution of fertilizers and other inputs for the 2004 summer and 2004-05 winter seasons. The MOA should sell these goods as rapidly as possible, with controls to ensure the equipment remains in Iraq. It should set up the procedure within weeks, make a public announcement, and begin disposing of the equipment before the end of May. And it should work with the Ministry of Finance (MOF) to ensure funds obtained from the sale of the equipment are added to the $200 million subsidy fund to purchase more inputs. We recommend setting up a locally-generated funds scheme similar to that implemented in the north to capture OFF funds for use in the Ministry, thereby allowing the MOA to recapture proceeds from the sale of OFF assets.

[3] There are no improved wheat seeds ordered as part of the OFF purchases.

Sell the vegetable seeds that have been purchased with OFF funds. Some of these seeds are in Iraq and some are in transit. Most have been found to be of low quality with low germination rates. It should be noted that whatever approach is used, the sale of goods purchased under the OFF is a one-time action and would not be a precedent for future government involvement in the supply of agricultural inputs and equipment to farmers.

Implement a plan for the Agricultural Subsidy Fund and establish input policy. Last year, the government distributed almost no inputs to farmers. This year, $200 million has been budgeted for agricultural subsidies. So far the funds have not been transferred to the Ministry. The CPA and the MOA are currently planning for the procurement of inputs for this year to be paid from these budgeted funds.

Later in this transition plan, we propose that the MOA's long-term strategy call for the gradual phase-out of input subsidies. Yet, even now, it is important that the MOA be clear about what it intends to do with subsidies in the future, particularly because funds may not be available to provide subsidies at past levels.[4] The two most pressing issues are how the funds will be allocated among the various inputs, and what the subsidy rate will be for each input. The plan calls for four implementation steps:

1. Step one: Estimate input requirements at the national level. MOA staff already estimate cropping patterns in each district. This information is channeled through the governorates to the Planning Directorate in Baghdad, which applies standard input application rates to all major crops to arrive at the national requirement for each input.

2. Step two: Decide the rate of subsidy for each input. Given the large quantities of agricultural equipment and vegetable seeds already in country, there are no plans to utilize any of the $200 million to purchase or subsidize these products in 2004. Veterinary vaccines will continue to be 100 percent subsidized. Fertilizers will be highly subsidized, although at a rate less than last year's 80 percent subsidy. Subsidy rates will also be reduced for other inputs.

3. Step three: Apply preliminary subsidy rates. The rates should be applied with a view to maximizing impact on crop and animal production.

4. Step four: Ensure the subsidy total can cover two planting seasons. Ministry planners should iteratively change subsidy rates and input selection assumptions to arrive at a combination of input quantities and subsidy rates that will be of most benefit in the two seasons covered by this year's budget—the 2004 summer and 2004/05 winter seasons.

The subsidy funds and the proceeds from sales will be administered by the SCAS, using the same procedures and financial controls used for previous agricultural input subsidy programs. The current level of funding for input subsidies, and the fact that in 2003-2004 few inputs were

[4] The private sector is responding. Agricultural inputs are increasingly available from commercial outlets. Knowledge that the government will purchase specific input quantities, or will not purchase inputs, will allow merchants to respond to local demand.

provided by the government, provide the opportunity to phase out inappropriate subsidies. Two types of events can be expected. First, subsidized inputs will be sold by recipients to other farmers at higher prices. Second, if private traders know in advance how much the government will be supplying, they will enter the market when they perceive an effective demand for inputs at market prices. As will be discussed in greater detail below, this is in line with the MOA's policy of gradually transferring input supply from the public to the private sector.

RE-ESTABLISH THE DOMESTIC MARKET FOR WHEAT

To achieve rapid increases in production it is essential that farmers receive prices that provide an incentive to produce. One of the main reasons for the rapid decline in production in recent years has been the lack of local demand for agricultural products at remunerative prices. In 2004, the focus will be on wheat, Iraq's most strategic crop. The Ministry of Trade has set producer prices for wheat. Prices range from $180 per ton for grade 1, the preferred grade for human consumption, to $130 for grade 4, suitable only for animal feed.[5] Although these prices represent a large increase over last year, they are still below wheat prices in neighboring countries and the cost of imported wheat.

The MOT will purchase the 2004 wheat crop and utilize as much of this wheat as possible for wheat flour in the PDS food basket. In general, the ratio of imported wheat to domestic wheat is intended to be 60 percent to 40 percent, although it is doubtful there will be sufficient bread-quality wheat to fill the domestic requirement.[6] This would provide an assured market of roughly 1.5 million tons for flour-quality wheat, if such wheat were available from the 2004 harvest. In addition, there will apparently be no restrictions on private sector wheat purchases, flour milling, or exports in 2004.[7] The top priority this year will be to provide an incentive price for wheat farmers. This will begin the transition from low producer prices set by government to prices more in line with world markets, and from direct government participation in markets to a predominance of market-based private sector participation. This transition, which is at the heart of the new agricultural policy for Iraq, is discussed in greater detail in the next section.

REHABILITATE ON-FARM IRRIGATION SYSTEMS AND INTRODUCE IMPROVED WATER MANAGEMENT PRACTICES

With the assistance of the U.S. Army Corps of Engineers and large U.S. contractors, the Ministry of Water Resources (MWR) has made major progress in rehabilitating and cleaning Iraq's primary, secondary, and drainage canals. This work is ongoing and will take several more years to complete. The role of the MOA is to ensure the water supplied by the main systems is properly allocated for optimal agricultural production and that farmers utilize integrated soil-

[5] Last year, the purchase prices for the highest and lowest grades were $105 and $75 per ton, respectively.

[6] See Annex 1 for a discussion of wheat quality and mixing requirements of imported and domestic wheat in the PDS flour program and see Annex 5 for an analysis of wheat production in 2003-2004.

[7] 2004 is an unusual year in which many of the controls of the past are not being enforced. Formal policies controlling wheat and wheat flour exports were revised in February 2004 by CPA to require an export license from the MOT.

water-crop management practices. These latter actions are critical to improving water use efficiency, reclaiming saline and waterlogged lands, and maximizing production and incomes per hectare. In 2004, the focus will be on rehabilitating of tertiary and on-farm canals and strengthening extension services to maximize the impact of these improvements on production.

REHABILITATE AND RE-EQUIP MOA FACILITIES

The focus in the short-term plan is to rehabilitate facilities needed to support rapid growth over the short term. The rehabilitation addresses urgent needs that will have an immediate impact on production, employment, and incomes, or are critical first steps to sustained, market-led growth. Top priority rehabilitation work falls into four categories:

Veterinary clinics. Virtually all veterinary facilities in the 15 central-south governorates were destroyed after the war. Limited animal medicines and vaccines are currently available from OFF stocks through the MOA. Limited quantities of medicines and vaccines from private veterinary practices are available to the larger and wealthier animal producers. The country's national herd is at risk from numerous diseases, including foot and mouth, sheep pox, and intratoxemia. Veterinary clinics throughout the country will be rehabilitated and re-equipped to ensure vaccines can be properly stored and made available to animal producers.

Soil testing program. At present, the MOA estimates and recommends a certain and fixed amount of fertilizer for all farmers in a given area. Universal recommendations on fertilizer, per se, are neither accurate nor lead to efficient utilization. One of the MOA's priorities is to set up a soil testing program at the governorate level. Laboratory equipment will be purchased or rehabilitated in each governorate. MOA staff will be tasked with receiving and testing soil samples from farmers, an appropriate service of the MOA.

Research and extension facilities. The priority for 2004 is the extension departments and training centers that did not survive the sanctions and the war and its aftermath. These facilities must be equipped to: a) link to the State Boards that do research; b) develop and deliver extension programs; c) produce extension materials; and d) conduct training and field demonstrations. In addition, research facilities must be rehabilitated for the following State Boards and Companies: Research, Horticulture and Forestry, Seeds, Animal Resources, Industrial Crops, and Veterinary Services.

Date palm offshoot nurseries. Date palms, perhaps Iraq's most important export crop, are produced in 13 of Iraq's 18 governorates by a majority of farmers. Date palms are an especially important source of income for small-scale farmers in the south. In the past 10 years, productive capacity has declined by 50 percent as a result of neglect and deliberate destruction during Saddam's reign. The first, critical step, which must begin in 2004, is to re-start aerial spraying of the crop and re-establish offshoot nurseries in the 13 governorates where date palms are grown.

Quarantine stations. Iraq has technically sound and well established sanitary and phytosanitary standards for animals and plants. In the absence of properly equipped quarantine stations, these standards cannot be enforced. This not only exposes Iraq's crops and animals to imported

diseases, it makes it very difficult to meet the sanitary and phytosanitary standards of countries that import agricultural products from Iraq.

ESTABLISH FLOOR PRICES FOR MAIZE AND COTTON

It appears that production of maize and cotton will decline considerably this year because of the lack of assured markets. There is no budget for the purchase of maize and thus no assurance that the Mesopotamia Seed Company will buy farmers' maize at an acceptable price. Similarly, the cotton ginning industry has not yet sufficiently recovered from the war and its aftermath to provide farmers an assured market. To avoid sharp declines in production, the government must establish a 2004 floor price for each of these crops. If market prices drop below this floor price, the government would enter the market and purchase the crop from the farmers. If prices do not drop below the floor price, there would be no government purchases. The price should be set high enough to encourage farmers to plant, but low enough that the government would be unlikely to have to intervene.[8]

CONCLUSION

The main objective of the short-term plan is to achieve immediate increases in production, employment, and income. The MOA can expect that as a direct result of these actions, agricultural production in many areas of the country will be measurably higher than at any time in recent years. The MOA should put in place a monitoring and evaluation system that will assess the effectiveness of the initiatives described above and measure their impact on production. Although these first-year activities do not emphasize policy or institutional reforms, they are nonetheless an important first step in setting the stage for these reforms, some of which will actually begin in 2004 and will be implemented over the medium-term planning period.

[8] The use of floor prices as a policy tool is considered in the following section.

MEDIUM-TERM TRANSITION PLAN FOR AGRICULTURAL GROWTH AND DEVELOPMENT IN IRAQ

INTRODUCTION TO THE THREE SECTIONS OF THE PLAN

The transition plan for the MOA follows from its vision for the agriculture sector, developed in January 2004.[9] That vision is of an agriculture sector that:

- is market-led;
- provides employment opportunity and security;
- is supported by government in partnership with the private sector;
- attracts local and foreign investors; and
- supports food security.

The MOA sees the goal of the medium-term transition plan for agriculture to be:

> *Providing a framework for the necessary transition from a centrally planned, noncompetitive agriculture sector to one that is market-oriented, economically efficient, productive, and employment generating.*

The plan has three sections:

- Creating a policy environment for market-led growth;
- Building capacity in the MOA and other ministries to support a market-based agriculture sector; and
- Supporting MOA national agricultural development programs.

Each section has specific phased objectives, which together will lead to the achievement of the overall strategic goal.

[9] The vision was developed January 14-15, 2004 in a two-day workshop of the 50 senior staff of the MOA, facilitated by ARDI.

SECTION I
CREATING A POLICY ENVIRONMENT FOR MARKET-LED GROWTH

OFFICIAL GOVERNMENT POLICY IN THE AGRICULTURAL SECTOR

Policies currently governing agriculture markets call for deliberate state control of inputs and state purchase of strategically important outputs. At present, due to political and bureaucratic chaos following the fall of the former regime, the government in some cases is not able to enforce past restrictions in both input and output markets. Thus, by default and not by design the sector contains an odd mixture of state-controlled and open markets,

The most important subsector, wheat, has been the most controlled and the most affected by the lack of open markets. The government intervened in every part of the wheat market. The underlying policy toward wheat was for the government to subsidize inputs—including the entire technical package of equipment, fertilizers, and pesticides—and purchase the wheat. Before the OFF program, the price for wheat was sufficient to provide incentive for farmers to take advantage of improved farming technology.[10] The government would then have the wheat milled in private or state-owned mills and sold it to consumers at below world prices (before OFF) or given away as PDS flour (under OFF).

The same situation applies to the poultry subsector (including maize) and for industrial crops (sunflower seeds and cotton). For both, government policy was to provide the entire modern technical input package at highly subsidized prices. 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 the 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. With respect to sunflower seed and cotton, farmers received highly-subsidized inputs and sold their production to state-owned processing companies.

The rest of the agriculture sector was basically market driven, with minimal direct government interference. The largest of these subsectors is livestock, which includes crops used for animal feed—barley, low-quality wheat, forage crops, and open range. The entire value chain is estimated to account for more than 50 percent of Iraq's agricultural GDP. There are no price controls on livestock products or on any of the animal feed crops. The only subsidy was for animal vaccines and medicines. There were, however, controls on exports of horses and female sheep. These controls were enforced in the past, but have been officially turned into a requirement for an export license from the MOT by a February 2004 CPA directive. The other uncontrolled subsectors of any size are vegetables, dates, rice, and miscellaneous fruits. Dates benefit from subsidized pesticides and offshoots from government nurseries, and all subsectors may benefit from subsidized agricultural and irrigation equipment that can be used on any crop.

[10] While the fertilizer was subsidized, cleaned wheat seed was 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.

There are export controls for date palm offshoots and vegetables, although in some cases export licenses can be obtained.

The result of these policies was a centrally planned, heavily subsidized, primarily modern subsector and a market-based, mostly unsubsidized, more traditional subsector. If agriculture is opened to market forces, it will expose some of the subsectors to international competition, likely causing one of two results depending on the products concerned. In the first instance, production would cease or decline sharply because the country does not have a comparative advantage. This would likely occur with sunflower seed and part of the maize and poultry industry. In the second instance, where the country does have a comparative advantage, producers would change their production systems to become more competitive. This seems certain to be the case for wheat in rainfed areas and horticulture crops (especially date palms), cotton, and rice in irrigated areas.

THE UNDEFINED SITUATION IN 2003-2004

The 2003-2004 season does not necessarily reflect official government policy. In the wheat market, the government had difficulty providing subsidized fertilizer, and it raised the purchase price sharply over last year.[11] Past export controls on wheat are not currently being enforced. Formal prohibitions have been relaxed in favor of required export licenses, but restrictions have not been removed from official regulations.

In the maize, sunflower, and cotton subsectors in 2003-2004, there were no government supplies of fertilizer and seeds and the Mesopotamia Seed Company has no budget to purchase the three commodities from farmers. Official prices for poultry no longer exist. The SCAR intends to provide recently received OFF commodities at subsidized prices to poultry producers, so long as supplies last. While one might be tempted to claim victory over controlled markets, it is important to emphasize that circumstances—rather than policies—have opened markets and freed agricultural producers. The lack of subsidized fertilizer, for example, has not been of benefit to the sector, as private markets were not prepared to supply fertilizer. Even if stocks had been available, many impoverished farmers would not have been able to purchase inputs. Much work must be done to ensure past interventions are not revived and production and marketing disruptions do not cause even greater harm to the sector.

Creating the policy environment for market-led growth requires gradually eliminating subsidies on inputs, decontrolling prices on outputs, and getting the government out of commercial activities in the agriculture sector. The policy areas that must be addressed over the short- to medium-term are:

- The government's dominant role in the wheat subsector;
- The PDS and its impact on agriculture;

[11] See Annex 1 for a discussion of the economics of wheat production and flour milling, and Section III for a proposed wheat production program.

- Input subsidies;
- Government participation in the poultry and maize industry; and
- Government participation in the sunflower and cotton industries.

REDUCING THE GOVERNMENT'S ROLE IN THE WHEAT SUBSECTOR

With correct, market-based policies, the wheat subsector in Iraq could be internationally competitive. This transition plan seeks the entry of Iraqi wheat into international markets. It also looks toward the efficient substitution of domestically-grown wheat for imported wheat and locally milled flour for imported flour.

This year, MOT will purchase the wheat crop, contract with private mills to have high-grade wheat milled for use in the PDS, and sell low-grade wheat on the open market for animal feed well below the official purchase price.[12] However, under the MOA's medium-term strategy, wheat prices will not be controlled and the private sector will participate in all stages of the wheat market. A market-led wheat sector would operate as follows:

- Farmers will sell their wheat on the open market; high grades would be purchased by private and state-owned mills;

- The mills will lease MOT storage silos;

- The millers will sell flour to MOT for the PDS and to other buyers in the private sector;

- Farmers will sell low-grade wheat for animal feed at open market prices, thus creating a strong incentive for farmers to produce the high-quality wheat demanded by the flour mills; and

- At the same time, the government will establish a price support program, operated by the MOA, to protect Iraqi wheat farmers from fluctuating world prices.

Opening the wheat subsector to undistorted market forces is an ambitious, yet critically important, objective. As discussed in the next section on capacity building, the MOA should immediately begin strengthening its economic and policy analysis capabilities. In addition, it should initiate the necessary inter-ministerial discussions of the complex policy issues related to the wheat subsector in Iraq.

[12] At $180 per ton for Grade 1 wheat and $130 a ton for grade 4, there may be little incentive for the farmer to expend the extra effort to grow top-quality wheat. Inter-ministerial discussion on wheat prices had the MOT arguing for $100 a ton for grade 4 and the MOA pushing the price higher. The grade 4 price should be closer to the open market price for barley, which is expected to be less than $100 per ton, since both are used for animal feed.

REDUCING THE ADVERSE IMPACT OF THE PDS ON AGRICULTURE

As now designed, the PDS has an extremely detrimental effect on agricultural production. With all Iraqis receiving a free food basket, the domestic market for domestically produced foods, both fresh and processed, is limited. Recognizing that most Iraqis remain highly or entirely dependent on the PDS for their basic needs, the goal of this transition plan is as follows: as employment and incomes rise, the PDS is redesigned to have less negative impact on consumer demand for agricultural products. This would involve a combination of:

- Monetizing the PDS basket of necessities;
- Reducing the number of items in the food basket; and
- Moving from universal coverage to a needs-based food security program.[13]

From the standpoint of agricultural producers, it is critical that Iraqi households make their consumption decisions based on consumer preferences and supply and demand conditions in the open market. Until this huge consumer market is opened up to Iraqi agriculture, market-led growth will be severely constrained. As in the case of government control of the wheat market, the policy issues extend far beyond the domain of the MOA. The MOA, however, will be strengthening its capacity to analyze these issues and will thus be more effective in presenting the interests of Iraq's economically important agriculture sector in inter-ministerial policy debates.

GRADUALLY ELIMINATING INPUT SUBSIDIES

The many subsidies on agricultural inputs are the combined result of long-standing government programs to promote the use of productivity-increasing modern technologies for strategic crops. In the case of wheat, the government decided what was to be produced, provided most modern inputs and equipment at subsidized prices, purchased the product at a guaranteed price, and sold it to processors or consumers at a subsidized price to compete with imports.

Under the MOA's new vision for a market-based sector, subsidies will be limited to two special cases:

1. Subsidies will support specific technological packages for a limited time under open market conditions that ensure the new technology is financially and economically viable. These subsidies include soil and seed testing services provided by the MOA; and

2. Input subsidies will also continue to be used to protect a national resource. For example, vaccinating the national herd against epidemic diseases, treating wheat seed with fungicide, and aerial spraying date palms to protect against the red weevil, providing seedlings for reforestation programs, and delivering soil laboratory services.

[13] See Annex 2 for a detailed discussion of PDS monetization and issues to be addressed in designing needs-based food security programs.

Actions to eliminate input subsidies. At this time, the following actions should be taken to gradually eliminate input subsidies:

Fertilizer accounts for most of the input subsidy program and is intended to benefit mainly wheat farmers. This plan calls on the MOA to gradually reduce both the quantity of subsidized fertilizers and the rate of subsidy. During the transition period, the government should announce the quantity to be subsidized at the beginning of each season. This would enable the private sector to assess the unmet demand and make the necessary financial and logistical commitments to fill the gap. Soil testing for optimal use of fertilizer is a service the MOA should continue to provide after fertilizer subsidies are eliminated.

Pesticide, herbicide, and fungicide. The quantity of subsidized agricultural chemicals is minimal. The objective is to remove all subsidies and leave supply to the private sector. The only definite exceptions will be the fungicide used to treat wheat seed against smut, and aerial spraying of pesticides for date palms.

Agricultural and irrigation equipment. The quantity of equipment currently being subsidized is minimal except for the supplies being brought in under the OFF program and stored in State Company of Agricultural Supplies (SCAS) warehouses. In the past, the main beneficiaries were wheat farmers who received tractors and combines at subsidized prices. Also, during certain periods, the government provided subsidized irrigation equipment. The goal will be to end all of these subsidies and leave equipment supply to the private sector. It should be noted that as these subsidies are removed, financing will become an issue. As discussed later in this plan, the MOA will take initiatives to make farmers better credit risks and assist lenders to become better underwriters and providers of agricultural loans.

Veterinary Medicines. Most veterinary-related subsidies are currently for vaccines. The MOA proposal is that vaccines remain fully subsidized and all other veterinary medicines become unsubsidized and left to the private sector. There are many more veterinarians in the private than in the public sector. The MOA should give private veterinarians access to vaccines against epidemic diseases and allow them to vaccinate animals.

REMOVING SUBSIDIES AND PRICE CONTROLS IN THE POULTRY, COTTON, AND SUNFLOWER INDUSTRIES

The previous government programs described above were successful in establishing a modern poultry industry in Iraq. The industry has been vertically integrated. The government provides highly subsidized imported inputs and domestically produced maize feed to poultry producers and controls the price at which poultry products are sold to consumers. During the past year, government support to the industry virtually ceased but, as described in greater detail in Annex 1, producers of eggs and broilers have managed to survive. Now, the State Company for Animal Resources (SCAR) is about to start distributing subsidized inputs received under the OFF program, which means that the industry may once again become dependent on subsidies.

In line with the vision for market-led agriculture, the government's strategic objective over the medium term should be to remove all subsidies and controls on the poultry industry. This means that poultry producers will purchase imported inputs from private suppliers instead of the SCAR and domestically produced maize feed from private feed mills and the Mesopotamia Seed Company at open market prices. They will sell their products at open market prices. Since most of Iraq's poultry meat imports are from countries that subsidize their poultry industries, Iraq may have to use WTO-approved import tariffs or domestic support prices to protect the domestic industry. The expected result of this proposed policy change will be a smaller but more competitive poultry industry, not dependent on subsidies and capable of self-sustaining growth in an open market environment.

The government has had similar subsidy programs for the sunflower and cotton industries. For cotton, the SCAS provided subsidized inputs to cotton growers and the State Company for Industrial Crops (SCIC) purchased the cotton crop at a guaranteed official price. The SCIC sold it to state-owned and private gins at a subsidized price. Most of the ginned cotton was exported last year. For sunflower seeds, the system was the same, except that sunflower oil is produced for the local market. The MOA proposal is to end these subsidies, price controls; and direct government purchases. The challenge will be to find ways of developing and supporting the market-based non-subsidized production and processing of these crops. This is especially important for cotton because private cotton gins interested in ginning local cotton for export already exist.

As administered price controls for maize and cotton are removed, the government should consider replacing them with floor prices set at a level close enough to average world prices to assure producers of a reasonable market yet low enough to ensure the government will not be accumulating stockpiles that will have to be sold at a loss.[14]

REMOVING ADMINISTRATIVE CONTROLS ON IMPORTS AND EXPORTS

In the past, there were embargoes on movement of agricultural produce between the north and central-south, and restrictions on all agricultural exports. In particular, as livestock numbers were reduced, there were legitimate concerns that a national resource was disappearing. Even as herds have regenerated, there remains a belief among many Iraqis that the government should prevent export of female sheep, and other agricultural products, while the country rebuilds.

In June, 2003, the CPA issued instructions in which female camels, goats, cows, sheep, buffalo, donkeys and horses, deer and mules were prohibited exports.[15] In February 2004, the CPA

[14] Floor prices for agricultural commodities have a long and undistinguished history, often becoming pawns in a political contest currying farmers' favor. There are two main theories: a) floor prices to stabilize a market, with prices set considering multiyear world price averages; and b) prices set to ensure that the farmer's crop, once planted, will receive a reasonable return even if there are large swings in international prices. In this latter case, a price would be established prior to planting each year, considering the price available at the time of harvest in the international futures market, discounted perhaps 15 percent.

[15] CPA/ORDANNEX/7June 2003, Trade Liberalization Policy.

revised its previous instruction to make wheat, wheat flour, and all animals restricted exports, requiring approval and a license from the MOT.

Iraqis have little experience working with the licensing system. Border crossings are a time-honored tradition among pastoralists, and high-grade wheat has had, prior to 2004, a far superior market in adjacent countries than under the government's purchase system. This leads us to believe that an informal trade network has been in operation. How and whether the formal system will adapt and allow exports of Iraq products that have markets abroad remains to be seen. Exports are vital as an important market that will help to commercialize the agricultural sector.

HALTING GOVERNMENT'S RE-ENTRY INTO COMMERCIAL ACTIVITIES

It is incorrect to believe the state controlled sector has disassembled in Iraq. Circumstances in 2004 have limited its commercial activities. But when opportunity allows, unless there is a strong policy favoring private business activities, the state will add to its inventory of businesses and enterprises.

The Grain Board, under the MOT, makes policy decisions on grain purchases, milling, and PDS flour distribution. The General Company for Grain Processing, also under MOT, owns flour mills. Most of the mills are in private hands, but the importation of milling equipment under OFF has offered MOT an opportunity to expand its milling activities. Three government-owned and managed mills have been placed in operation in the past few months and 21 more are scheduled to be in operation at the end of this year.[16] Although General Company for Grain Processing management says these mills will not seek PDS contracts, this milling capacity would equal half of the needed milling capacity of the country. Private millers are far less efficient, already suffering from overcapacity and unlikely to be able to withstand the challenge of government mills. The wheat support program described above depends upon actions by private millers. To ensure agriculture is led by the private sector, the introduction of new government milling capacity should be halted until such time as a privatization program for the new mills has been designed and approved.

CONCLUSION

The result of the improved policy environment described above will be two-fold. First, it will increase efficiency in the production of some of the crops that have been subsidized. Second, it will cause some shift in production from crops that have been subsidized to crops that have not. The net effect will be increased value added and competitiveness in the agriculture sector. It must be emphasized, however, that producers of "strategic crops" have become accustomed to close government support. The MOA will have a special responsibility to assist the most vulnerable farmers, although certainly not the rich ones who have been the major beneficiaries of

[16] See Annex 1 for a description of government-owned wheat flour milling activities.

these programs, as they learn to make production and marketing decisions in response to market signals.

The policy changes described above have important institutional implications for the MOA. First, some state companies under the MOA will have greatly reduced roles. This will include the State Company for Agriculture Supplies, State Company for Animal Resources, State Company for Industrial Crops, Mesopotamia Seed Company, and the State Company for Veterinary Services (SCVS). Second, the MOA will re-orient from production planning, input supply, price controls, and direct participation in commercial activities to providing policy, technical, and regulatory support for a market-based agriculture sector. This will include provision of soil testing and plant and animal disease diagnostic services. This necessary strengthening in the capacity of the Ministry to support these changes is discussed in the following section.

SECTION II
BUILDING CAPACITY IN THE MOA TO SUPPORT MARKET-LED AGRICULTURE

INTRODUCTION

The transition from central planning and commercial activities to a market-based agricultural economy has far-reaching implications for the MOA. Its functions will change to include new areas of work in economic and policy analysis and altered functions with respect to technical and regulatory tasks. These adjusted functions will require changes in the internal structure of the MOA, and different management systems to carry out these adjusted functions. Finally, staff must be redeployed and retrained to carry out their new functions.

The MOA has already confirmed its commitment to carrying out institutional changes needed to support a market-based economy. The MOA is committed to influencing the agricultural sector through world-class research and development, extension, and other important services such as soil testing and animal disease diagnostics. In turn, it will gradually reduce its control over commercial activities.

In the January 14-15, 2004 workshop in Baghdad, senior MOA managers defined a vision for an agricultural sector that is market-based and led by the private sector. The MOA sees its new role as one which:

> *Assists farmers with relevant research, extension, and demonstrations, and provides support to gain access to resources, modern techniques, and new markets.*

An additional MOA role will be to transfer responsibility for commercial activities, especially input supply, to the private sector. Establishing strong regulations to protect human health and the environment and to facilitate commerce will also be part of the MOA's mandate.

It is important not to underestimate the difficulty of institutional change of this magnitude, which must be systematic and phased. It is essential that all MOA employees—from senior managers to employees in field offices—buy into both the process and substance of change. We thus propose a ministry-wide consultative process to ensure all MOA levels, from the center to the districts, understand and are committed to the changes. This consultative process is described in Annex 3.

RESTRUCTURING PROPOSAL FROM THE MINISTRY OF AGRICULTURE

Even prior to the January workshop, the MOA recognized that its functions were changing and that this would require some structural revisions. In September 2003, the Minister of Agriculture proposed converting four State companies into State Boards. This includes the State Companies

for Industrial Crops, Animal Resources, Horticulture and Forestry, and Veterinary Services.[17] This would have the effect of converting these entities from income-generating, self-financing commercial enterprises to MOA departments responsible for technical or regulatory support to the agriculture sector. This is entirely consistent with the vision and role of the MOA put forward in January 2004.

The Minister's proposed plan would, however, leave two State Companies—Agriculture Supplies and the Mesopotamia Seed Company—operating as commercial entities. If the MOA proceeds with its plans to phase out of commercial activities, it will need to decide what to do with these two companies. In addition, it will need to determine the status of the commercial assets of the four State Companies converted to State Boards. The options are to transfer the non-commercial staff of these companies to the MOA and privatize the companies or to wind up operations and sell off the physical assets. However, the future of these companies will depend on the establishment of a national policy towards privatization, an issue beyond the purview of the MOA.

DISCUSSION OF MOA REORIENTATION

Table 1 presents an overall framework for MOA functions in a market-based agriculture sector. The table was presented and adopted at the January 2004 workshop, and constitutes the beginning of the change process. The rest of this section of the transition plan will focus on describing the capacity-building actions needed to strengthen the ability of the MOA to carry out these functions.

Table 1: MOA Functions in a Market-led Economy

Policy and Economics	Technical Support	Regulatory Support	Management
Policy analysis and formulation	Research and extension	Animal and plant quarantine	Planning
Data collection and dissemination	Plant protection	Seed certification	Finance and budgeting
Economic analysis	Animal protection	Pesticide controls	Human resources
International coordination	Animal health	Quality control	Legal affairs
	National Develop-ment Programs	Land tenure	Public awareness

Source: Proceedings of the *Workshop on Setting Agricultural Objectives: The Role of the Ministry of Agriculture*, Baghdad, January 14-15, 2004.

[17] *Ministry of Agriculture - The Present Situation, Constraints and Objectives*, Dr. Abdul Amir Rahima Al-Abood, Minister of Agriculture, September 2003.

CAPACITY BUILDING—POLICY AND ECONOMIC ANALYSIS

The MOA urgently needs increased economic and policy analysis capability. Currently, policy and economic analysis is the responsibility of the Agricultural Economics Department of the Planning Directorate. The MOA must take three actions to strengthen its policy and economic analysis capability:

Action 1: Create an agricultural statistics office that will collect, analyze, and disseminate data on the agriculture sector in Iraq. This will need to be done in coordination with the Central Statistics Office of the Ministry of Planning. The data to be collected should include area planted by crop; yields; farm gate, wholesale, and retail prices; and quantities processed. Data should also be obtained on farming systems, including farm budgets; the use of modern inputs and equipment; returns to labor; value of production per unit of land; and differences between irrigated and rainfed areas, and between winter and summer seasons. This is a large but necessary undertaking, requiring additional staff and funding to meet the data and information needs of the private sector and of government policy makers.

Action 2: Strengthen the economic analysis capacity in the Planning Directorate. The MOA now has three agricultural economists, only one with primary responsibility for economic analysis. The Planning Directorate should expand the functions and staffing of the Agricultural Economics Department to create a special studies unit, responsible for the analysis needed in agricultural strategy and policy formulation.

Action 3: Reorient the Planning Directorate from planning and controlling production and input distribution to formulating policy in support of a market-based agriculture sector. Most of the policy issues discussed in the transition plan involve more than just agriculture. For example, agricultural price policy is governed by the Ministry of Trade, while irrigation policy is the purview of the Ministry of Water Resources. As Iraq moves to a market-based economy, the MOA must develop the capacity to formulate and advocate policies within Iraq's government that are supportive of the agriculture sector. The more the MOA understands Iraq's market-based agriculture sector, the more effective it will be in helping assure the sector's long-term competitiveness in global markets.

Results: As a result of these proposed changes, the MOA will be able to provide accurate data and analysis on the market-based agriculture sector to meet the needs of management, policy makers, and the private sector.

CAPACITY BUILDING—TECHNICAL SUPPORT FUNCTIONS

The MOA's technical support functions center on research and extension. At present, there are State Boards for Agricultural Research, Extension and Agricultural Cooperation, and Plant Protection. There are also three State Companies that perform research and extension functions in the subsectors for which they are responsible: Industrial Crops, Animal Resources, and Horticulture and Forestry. In addition, the MOA has eight "National Development Programs"

that provide the full range of technical-support services focused on specific crops or development issues identified as requiring priority attention.

The MOA has substantial capacity in place to meet the technical support needs of a market-based agriculture sector, but these capacities presently exist in half a dozen different organizations. Whatever the final outcome of the restructuring, technical support must be actively coordinated and must cooperate in providing services to farmers. We propose four actions to achieve this coordinated capacity:

Action 1: Develop new management systems. The State Boards must redefine their missions, set new goals, revise their programs, reorganize, and change job descriptions. For some State Boards the changes will be more significant than others.[18] Improving horizontal and vertical linkages within the MOA will be especially important. The most important links are those between all of the State Boards involved in research and extension and between the State Boards at the center and the field staff at the governorate, districts, and section levels.

Action 2: Reconstruct and re-equip research and extension facilities. The facilities that have been damaged and looted have been identified. In addition, there is a need to upgrade and modernize equipment across all State Boards to close the 15-year science gap, especially in computer technology and the Internet.

Action 3: Redeploy, retrain, and refocus staff. As the functions of the various organizations involved in technical support are clarified and new job descriptions written, staff must be redeployed and retrained, and their work must be refocused. In many cases, the training will emphasize directing work from tasks such as input distribution and farm-level inspections to meeting the technical support needs of farmers making production decisions based on market conditions. Given that 6,000 of the MOA's 14,000 employees are in the State Companies and another 6,000 in the governorates, the importance, magnitude, and difficulty of this task is not to be underestimated.

Action 4: Close the science gap. Discussions with technical support staff reveal they have been isolated from scientific and technological advances for 15 years. This gap can be closed with training, new equipment, and study tours to countries facing technical issues in agriculture similar to those in Iraq. There is a strong human resource base in the MOA that would benefit quickly and significantly from these programs.

Results: These efforts will create an MOA research and extension program that identifies and promotes new technologies and markets to farmers and the private sector.

[18] Annex 4C presents the missions and programs of the State Boards, State Companies, and National Development Programs in the MOA, and identifies some of the changes needed in their organizational and management structures.

CAPACITY BUILDING—REGULATORY SUPPORT FUNCTIONS

As noted in Table 1, the main MOA regulatory functions will be:

- Plant and animal disease control;
- Seed testing and certification;
- Pesticide controls (including regulations related to food safety);
- Quality control (grades and standards for agricultural products); and
- Land tenure.

With the exception of quality control, the MOA already performs these functions.

Within the broad area of regulatory functions the most urgent capacity-building needs relate to plant and animal protection and food safety programs and technologies. Largely because of the gradual decline in the implementation of these programs during the sanctions period and the damage to quarantine facilities during and after the war, these measures no longer adequately protect Iraq's animals and plants. They also do not meet the disease protection standards of countries that might import agricultural products from Iraq. The specific next steps the MOA must undertake to strengthen its capabilities in animal and plant protection and food safety are:

Action 1: Re-establish plant and animal protection facilities. Especially important are quarantine facilities destroyed during and after the war.

Action 2: Review and revise plant and animal protection policies and regulations. The review and revision will ensure regulations provide adequate oversight of private sector service providers and farmers, meet current international standards, and take account of regional developments and those of other trading partners. In addition, the regulations should not hinder private sector development. Rather they should facilitate private sector participation.

Action 3: Undertake a staff awareness and skills development program. This program will be based on a training needs assessment to identify regulatory-related training opportunities. The assessment will provide the basis for designing comprehensive training to develop the capacity of staff in new regulatory technology and approaches.

Action 4: Redevelop plant and animal protection knowledge. Much of Iraq's base of knowledge was lost during the sanctions and in the looting following the war. It is essential that this knowledge be re-established.

Action 5: Review land tenure regulations and systems. The other regulatory area requiring attention is land tenure. Only a small percentage of agricultural lands are privately owned. There are four different categories of tenure for agricultural lands and, although the registration system is quite thorough, the security of tenure for lands not privately owned is inadequate for a market-based agriculture sector. Specifically, the legal and institutional framework for the purchase and sale of agricultural lands is inadequate. Further, the forms of ownership do not easily allow land to be used as collateral for loans, nor do they provide sufficient tenure security to encourage

long-term fixed investments. Annex 10 discusses this matter in detail and recommends a program to correct these problems over the medium term.

Results: These actions will generate an effective plant and animal protection capability that protects national plant and animal resources, ensures food safety and security, and conforms to international standards. Progress on land tenure issues will permit owners to capture the benefits of investments and form the basis for a land market in rural areas.

CONCLUSION

The objective of the program described above is to support the reorientation of the MOA from central planning, market controls, direct distribution of inputs, and direct participation in commercial activities to providing policy formulation, technical, and regulatory support for a market-based agriculture sector. Indicators that the MOA is achieving this objective include:

- The MOA is successfully advocating policies supportive of market-based agricultural growth in inter-ministerial policy deliberations;
- The agriculture sector achieves self-sustaining growth based on undistorted market forces;
- There is a strong link between research and extension; farmers receive sound and relevant information on new technologies and markets;
- The MOA designs and implements market-based development programs to take advantage of Iraq's comparative advantages and to address development constraints;
- The private sector provides unsubsidized inputs and equipment to farmers, and mechanisms have been developed to meet farmers' financial needs; and
- Regulations relating to plant and animal protection, pesticide control, seed certification, grades and standards, and land tenure are responsive to the needs of farmers and agribusinesses and meet international standards.

After years of neglect and market distortions, there are opportunities for the oriented and strengthened MOA to undertake new initiatives. These initiatives will leverage Iraq's comparative advantages in agriculture and lead to market-based and therefore sustainable growth in agricultural production, employment, and incomes.

SECTION III
NATIONAL AGRICULTURE PROGRAMS

INTRODUCTION

This section deals with three main topics:

- Coordination of donor-funding, budgetary processes within the MOA, and the informal cooperation between the MOA in Baghdad and regional local ministries in the northern governorates, Erbil and Sulaymaniyah;
- National programs for wheat production, small-scale sheep production, date palm restoration, and pilot projects in on-farm soil-water management; and
- Agricultural sector support programs for rural liquidity, land tenure, and vulnerable groups.

COORDINATION OF DONOR-FUNDED AGRICULTURE DEVELOPMENT PROJECTS

One of the new functions of the MOA should be coordination of international donor-funded projects to ensure they are in line with the overall goals or work of the MOA.[19] First, the MOA should be able to assist donors that wish to contribute to agricultural development with project designs that integrate with existing MOA staff and organizational arrangements. In the past, national programs have been staffed and funded separately, with vehicles and budgets that by passed the governorate structure. If the donors could work within the structure and staffing of the MOA and its governorate and section offices, then new programs would support retraining and re-equipping new ministry functions, rather than be a temporary diversion into short-term donor-funded activity.

Second, the MOA should be able to design pilot programs—such as those proposed below—to establish technical and organizational solutions prior to large-scale implementation. Modest pilot testing with well-designed controls and data captured on the treatment, results, costs, and benefits of an intervention, gives donors confidence that their money will be well-used in supporting the extension of a proven new technology.

Third, the MOA must design into new governorate staffing the ability to respond to external funding of local projects. In the south-central region, CPA funds were available for small projects ranging from mushroom farms to dairy herds, including small egg producers, tahina production, soil testing laboratories, animal feed, date processing, and so on, with funding of $2,000 to $500,000 for individual sub-projects. These well-intended initiatives will require technical support to ensure success. The MOA should be able to support these mini-projects by increasing flexibility and staff deployment at each governorate agricultural office.

[19] See Annex 3 for examples of an internal structure of a ministry in a market-based agricultural economy.

While minor projects will serve local constituencies, major donors will support national programs and the rehabilitation and strengthening of the MOA. An October 2003 assessment of needs in agriculture, water resources, and food security began the process of identifying major funding requirements.[20] The establishment of Iraq Trust Funds under the auspices of the World Bank and the UNDP, with international donor funding, allows countries without bilateral programs to contribute to Iraq's rehabilitation.[21] To access these funds, the MOA sent a request for assistance to the donors' conference, held in Amman in mid-February. The request, taken from the UN/World Bank's Joint Needs Assessment, totaled approximately $1 billion. The outcome was a Bank memo saying that $100 million over 3-4 years had been approved for selected disadvantaged population programs, starting in June 2004. The MOA was invited to submit another project for an Iraq Framework for Agricultural and Rural Policy and Institutional Development.[22] For a second donors' conference in Abu Dhabi at the end of February 2004, the MOA requested $318 million for projects. Unfortunately, no projects were selected from the MOA list.

The Iraq Trust Funds are major donor initiatives on which the MOA should try to capitalize, perhaps by improving the design and increasing the detail of proposals submitted in funding requests. The MOA should maximize its ability to draw upon those bilateral programs and international donor agencies willing to assist Iraq.

ESTABLISHING BUDGET PROCESSES TO SUPPORT AGRICULTURAL DEVELOPMENT

As of early 2004, there are five funding sources available to the MOA. These are: a) the annual MOA budget generated by the CPA, totaling approximately $35 million for 2004; b) a supplemental line item of $200 million held in the Ministry of Finance for agricultural subsidies for 2004, and a similar amount for each of the next two years; c) recovery of funds from the sale of OFF commodities, with some uncertainty over which agency will have decision authority over the expenditure of these return-flow funds; d) the Development Fund for Iraq (DFI), where confiscated and illegal funds and returns from OFF contracts let (but not activated or implemented) are captured; and e) donor funding to support the agricultural sector.

Of the five potential funding sources, the annual budget for the MOA is most certain. As of April 2004, the CPA Senior Advisor for Agriculture was assisting in the programming of the $200 million held by Ministry of Finance, because these monies are released only with CPA agreement. Return flows from the sale of OFF commodities are more complicated and less likely to be fully retained with the MOA. The Administrator of the CPA, Ambassador L. Paul Bremer, told the Minister of Agriculture that $100 million of these funds would be returned

[20] United Nations/World Bank, *Joint Iraq Needs Assessment for Agriculture, Water Resources and Food Security*, October 2003.
[21] World Bank, *Interim Strategy Note of the World Bank Group for Iraq*, January 14, 2004.
[22] Letter from Kutaiba Mouhammad Hasan to the Minister of Agriculture, on the subject of Attending Financial and Private Sector Development Conference and Meeting with the World Bank Representative, Amman, February 14-16, 2004.

to agriculture, but the processes of accounting and disbursement are as yet unclear, particularly as many of the sales will post-date the departure of the CPA. The DFI funds have been programmed by CPA advisors and agriculture has not been well gifted: only $15-20 million was authorized by CPA for a special fertilizer purchase—to be contracted by MOA—but no contract has been consummated for the importation of fertilizer and thus no monies from DFI have been released.

Agricultural input subsidies are declining and near-zero subsidies should be achieved in three years. In 2004, large purchases of subsidized fertilizer are expected.[23] The $200 million set aside for agricultural subsidies in future years will not be needed for this purpose. But the MOA is advocating the setting of floor prices for a series of strategic commodities—wheat, maize, cotton—that could, under unusual but conceivable circumstances, call for the government to purchase commodities or pay the difference between pegged floor price and international market prices. Such expenses might fit under the general subsidy budget. There are also insurance schemes, mentioned in Section I of this transition plan, that would protect the MOA against large outlays should international prices turn against Iraq. This insurance would also require a budget.

A MOA finance department that deals with budget requirements should be part of the MOA's reorientation. A finance department should work toward ensuring that funding is aligned with the new promotion, oversight, and regulation functions assumed by the MOA in a market-led agricultural sector. It should harmonize requests to each of the funding sources and direct donor funding to the sector's most pressing and least supported development needs.

IMPLEMENTING NATIONAL PROGRAMS WITH REGIONAL LOCAL AUTHORITIES IN THE NORTH

This transition plan supports the Baghdad-based MOA which has direct authority over 15 governorates and some level of responsibility for the three northern governorates of Erbil, Sulaymaniyah, and Dahuk.[24] The agricultural policy issues in the two regional local authorities[25] in Erbil (which includes Dahuk) and Sulimaniyah are similar, although the climatic circumstances are not. For historical reasons, these three governorates have been semi-autonomous, governed by Kurdish leaders, with past embargoes on movement of agricultural products to and from regional local authorities and the south-central region. In this transition period between CPA and local Iraqi jurisdiction, the relationships between the

[23] The Ministry of Finance agricultural subsidy budget is intended to cover the difference between market purchase prices and subsidized sales prices to Iraqi farmers. However, there is a float required between purchase and sale that will consume a great deal of the $200 million, with a many-month wait before sales allow repayment to the Ministry of Finance. This is the first time this process has been applied. New procedures may need to be established to ensure smooth purchase transactions, sales, and reflows.

[24] Annex 6 provides an organization chart of the Regional Local Authority Ministry of Agriculture and Irrigation in Erbil.

[25] This language is borrowed from the UN, which supported the three governorates with separate OFF funding and Food and Agriculture Organization offices.

Baghdad-based and the Regional Local Ministries of Agriculture and Irrigation in Erbil and Sulimaniyah are unclear. While some problems will be addressed at national levels, the similarity of issues facing the parties and the potential for mutually beneficial action suggests that an informal dialog between the areas should be started immediately.

Informal cooperation could be initiated in several ways. First, USAID/ARDI will offer to collaboratively support and sponsor seminars in both the north and in Baghdad. These seminars will bring agricultural planners and technicians together to discuss technical issues. Common experiences can be profitably discussed at such seminars. For example, there are numerous commonalities and lessons to be learned in the history of distribution of subsidized inputs and gifting of OFF equipment between the regions. Similarities are likely to emerge in discussing new approaches to promote private sector development while protecting vulnerable groups. Second, the Wheat Production and the Sheep Production Programs discussed below are tentatively scheduled to be tested in central and northern regional governorates, calling for cooperation in planning and implementing pilot tests of new technology.[26]

Introduction to Programs to Support Agricultural Sector Development

Agriculture development in Iraq calls for policy reform, institutional development, specific projects in information collection and policy analysis, training for staff, rehabilitation of facilities—the list continues. There are eight ongoing national MOA programs and a multitude of donor initiatives in the country. The World Bank plans to prepare an agricultural sector study from offices in Cairo and Amman, intended, we believe, to program Trust Funds committed by governments and placed under the auspices of the Bank and the UNDP.

In the midst of these many activities, most of them limited in scope, the sector needs country-wide programs that can be started now, tested in one or two governorates, and extended nationally as funds become available. These multiyear programs are intended to cover all of Iraq—the central 15 and the northern three governorates. They are designed to make a major contribution to agricultural employment and GDP through efficient import substitution (in the case of domestic, flour-quality wheat production) or export earnings (through date and small-scale sheep production).

In addition to increased production, the agricultural sector needs facilitating programs to halt a major environmental disaster—land loss from waterlogging and salinity—and to facilitate the transition to market-based production systems with special credit and land tenure programs. Prototype solutions for these sector support activities are provided below and given substance in the related annexes.

The new Iraq Government has a special responsibility for vulnerable groups and subsistence farmers who may be bypassed by market forces. While answers are not easily forthcoming,

[26] There is one existing joint research project between the center and regional local authority agricultural specialists: the Biological Control of the Sunn Bug on cereal crops project, a $200,000 three-year research undertaking in eight locations in the north.

for the welfare of the majority the movement to market-led production systems should not be impeded. However, there are ways to help those least able to make private investments in new agricultural production, and these methods should be identified and supported. Assistance mechanisms traditionally revolve around farmer organizations and rural communities. The prospects for enabling such support mechanisms are considered below.

PRODUCTION PROGRAMS FOR AGRICULTURAL DEVELOPMENT

These production programs are designed to work with the central MOA, through the agricultural structure at each governorate, down to district, sub-district, and section levels, as well as with the Colleges of Agriculture and Research Institutions.[27] Each program is intended to serve as a demonstration that supports the re-tooling and reorganization of technical support staff at each level of the government's three-tiered system as it contributes to increases in rural income through improved agricultural productivity. All three programs—wheat, sheep, and dates—are familiar to government staff, researchers, and farmers as they are ancient crops in Iraq. What is new will be modern technology infused throughout the system, modified and improved by adaptive responses from the farm level and feeding back through governorates to the agricultural ministry to improve the program's next phase.

The organization of each production program begins with a working committee composed of national and pilot-governorate agricultural staff from ministries, universities, and research centers. This committee would make technical decisions, sponsor a monitoring and evaluation unit to assess progress, and oversee funding decisions for each program. For example, in the wheat program, this committee—soliciting the advice of other experts—would decide which new varieties to import and test, how much of each approved variety to multiply in the coming year, and what special training is required for the seed certification board field staff, and it would address issues such as improvements to the seed cleaning, treatment, and storage facilities, distribution of the treated seed by location, price, and so on. Similarly, the working committee for small-scale sheep production will make decisions on new cross-breed requirements, improved veterinarian services, proposed changes in cropping systems to ensure appropriate fodder crops, and farmer organizations to connect to marketing channels.

Date palms existed before written history in Iraq. The palms were severely damaged during the Iraq-Iran war and the following embargo, losing much of Iraq's international market to newly-emerged date exporters. The working committee must continue the rehabilitation already started on date palm replacement, while initiating an in-depth marketing and comparative advantage study of Iraq's potential for date sales in the region and internationally. Based on the results of the study, decisions will be made on how to promote special varieties from the hundreds that exist and on how to develop production, post-harvest handling, and packaging specifications. This will enable Iraq to engage in international marketing to contest for export sales.

[27] See Annex 6 for a description of a typical agriculture ministry staff organization for governorate and section levels.

Each working committee will have a monitoring and evaluation unit that will collect field data on the inputs, outputs, and impact of each program, and report back through each level to the committee, particularly noting program changes dictated by farmer response to the new production opportunities. This is an excellent opportunity to marry research and extension, field and headquarters staff, in a newly emerging, market-based, government-promoted agriculture sector.

The three production programs—wheat, small-scale sheep, and dates—and the pilot projects for on-farm soil-water management are described below.

WHEAT PRODUCTION PROGRAM DESCRIPTION[28]

Wheat is the staple crop of Iraq, grown for thousands of years. Wars, embargoes, and the disincentives of the OFF/PDS distribution have combined to reduce overall yields to less than a ton per hectare of often low-quality smutty wheat. For 2002-2003, output was estimated to be between 1.2 and 1.8 million tons, of which perhaps 50 percent was flour-quality wheat.[29] To feed the population, the PDS purchases approximately 3.2 million metric tons of flour-quality wheat a year, in recent years importing 3 million tons of Australian or U.S. wheat.[30] Total Iraq consumption of flour is reported to be 3.6 million tons of wheat, but this estimate may be as flawed as others in the agricultural sector.

Northern Iraq has temperatures and rainfall patterns suitable for wheat production. Wheat programs sponsored by commercial companies in the 1980s produced three tons of flour-quality wheat per hectare in areas near Erbil with rainfall exceeding 400 mm per year. This is far higher than the 1.2 tons mixed-quality wheat yield reported in 2003 for Erbil, where 55 percent of the districts/sub-districts report 400+ mm of rainfall, and 27 percent report between 250 and 400 mm.[31] In drier locations, moisture retention technology—no tillage, fallowing, retained crop residue, herbicide application—has allowed Australian producers to obtain 3 metric tons per hectare in areas with 350 mm (14 inches) of rainfall.

In addition to yields per hectare, wheat is measured by protein and gluten content. Anything less than grade 1 wheat cannot be used for flour production without mixing with higher-gluten varieties. Grade 1 is determined by variety (wheat seeds that provide high percentages of protein/gluten), by cultivation practices, and by the cleanliness of the harvest. Only 10 percent of Iraqi wheat is estimated to have been grade 1 in 2003. MOA is now conducting winter wheat demonstrations with seed provided by the International Center for Agricultural

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[28] See Annex 5 for a full description of the Wheat Production Program.

[29] See Annex 5 for a discussion of wheat production in Iraq and the potential confusion that results from very different estimates of yields and total wheat produced, including FAO estimates of 2.5 million tons and MOA estimates of 3.3 million tons in 2003.

[30] See Annex 2 for a description of the PDS program that provides 9 kilos of flour per person per month and Annex 1 for a discussion of wheat grades and flour-milling activities in Iraq.

[31] And the total wheat production estimates from the two reporting regional ministries add up to far more than was actually produced by any other estimate. Ministry of Agriculture and Irrigation, Agriculture in Iraqi Kurdistan Region, Erbil, 2003, pages 5,10.

Research in the Dry Areas (ICARDA). The most prominent local variety is a cross developed from earlier CYMMIT releases. Iraq needs upgraded wheat varieties, but there is also much to be improved in the rest of the production chain.

The wheat varieties and production technologies that produce high yields of grade 1 wheat in high rainfall and dryland wheat are known. What has not been available is a country-wide program to introduce new technologies that farmers can adopt. As prices of inputs and outputs change rapidly, there is uncertainty concerning the price point for wheat at which the various technologies, including supplemental irrigation, are appropriately applied. One major output of the project will be economic models of various technologies related to the cost of inputs and the output price of wheat.

The Wheat Production Program is designed to modernize the wheat industry, including breeding and testing of new high-gluten wheat varieties; certified seed multiplication; cleaning, treatment, bagging, and redistribution for sale to farmers; land preparation and planting; input application; harvesting; transportation and storage; and flour milling. Most wheat is grown in the north, estimated to be 80 percent rainfed, with most production in rainfall areas between 350 mm and 1,000 mm. The growing area spans seven governorates, including three Kurdish regional local authorities.[32]

This program requires the resolution of several thorny policy issues. Past subsidization of agricultural inputs combined with low output prices removed decision responsibility from individual farmers and greatly reduced quality incentives. Administrative decisions taken to increase prices for the 2004 wheat crop are married with agreements to eliminate, over four years, input subsidies. The government should exit wheat production decisions in the next few years, continuing only to set a floor price to stabilize farmer returns. Policy recommendations earlier in this transition plan proposed allowing the mills to purchase wheat from any source—domestic or international—and sell milled flour to the PDS program. The freeing of the wheat market would not only increase the price of flour-quality wheat—closing the $70 per ton gap between domestic and imported wheat in 2004—but increase the gap between first- and last-quality wheat, increasing farmers' incentive to adopt modern production technology. One component of the policy change is to commercialize, or privatize, MOT grain storage, and ensure the prevalence of privately-owned flour mills.[33]

Wheat Production Program Objective

The Wheat Production Program is a national effort designed to increase production to 2 million tons per year of flour-quality wheat. This represents an increase of 1.5 million tons and will reduce imports by 1.5 million tons, representing foreign exchange savings in 2004

[32] See the maps in Annex 5 for the most promising wheat growing areas. Wheat is and can be grown in irrigated conditions south of Baghdad. Until proven otherwise, irrigated wheat in very hot climates is unlikely to have long-term comparative advantage over crops, such as cotton, more naturally suited to the environment. However, irrigated wheat grown in a rotation with fodder and high-value crops can be profitable.

[33] Annex 1 reports on the potential backsliding from a commitment to a market-based agricultural sector inherent in the establishment of new government-operated flour mills.

relative prices of $105 million per year, every year.[34] Wheat farmers will maximize their income from the wheat crop by finding the right mix of technology for their land and rainfall conditions. The government will have updated facilities for wheat seed breeding and testing, seed multiplication, treatment and distribution, soil testing, and disease identification. The private sector will supply the inputs and equipment at market prices. Transportation and storage will move to private sector control. The government should establish special programs to assist those unable to take advantage of market prices without credit or input support from farmer associations or cooperatives, as described below.

SHEEP PRODUCTION PROGRAM DESCRIPTION[35]

Livestock play an essential role in the lives of Iraqi farm families. Much of small-holder family income currently is derived from the sale of livestock. Within the livestock sector, the sheep subsector is considered to be the most economically important. Estimates for 2003 indicate there are almost 7 million sheep in central-south Iraq and roughly 4 million sheep in the north over two years old. Central flocks are reportedly small, with 10 sheep per household on average. Northern flocks are larger, with estimates of between 200 and 5,000 per family, although observation verifies there are smaller flocks of 20.

The price of live sheep in neighboring countries is consistently reported to be higher than the price in Iraq. This suggests there is an export market to exploit. Improving sheep flocks offers opportunities to strengthen sheep farmers' relative position in the transition to a market-led economy. In addition, sheep farming is one potentially economically viable activity in which women may well participate. Finally, there may be opportunity for inter-regional cooperation, as summer is a time of relatively plentiful feed in the north, with winter a time of more plentiful feed in the central-south.

The pilot program, to be implemented in the Wassit and Sulaymaniyah governorates, will champion small-scale sheep production systems in the central-south and small-scale pastoralist production systems in the north. Profitable sheep products and markets, as well as strategies for successfully marketing products, will be identified and promoted. The program will establish and/or strengthen producer groups to enable farm families to compete in a market-led economy. New and improved animal and crop technologies will be developed and disseminated to farm families. Technologies will increase the offtake of family flocks and tackle the issue of purchasing of supplementary feed. This will be achieved through improvements in flock genetics, nutrition, health, and management. The project will examine veterinary, research, extension, and training facilities and equipment to determine areas where program investments or equipment will be of most benefit. To strengthen the capacity of MOA staff to respond to the needs of small-scale sheep producers in a market-led economy, a multitiered program to retrain and retool MOA national-, governorate-, and agriculture section-level staff will be implemented.

[34] See Annex 5 for the calculations on present and potential flour-quality wheat.
[35] See Annex 6 for a full description of the Sheep Production Program.

In support of this pilot project, a critical policy issue must be resolved. Because of longstanding decline in the national herd, Iraq had banned exports of female sheep.[36] There appear to be two rationales for this policy. First, to maintain the national flock; second, to ensure availability of affordable meat for the domestic market. As we deepen and share understanding of the potential supply response to an increase in price, the rationale for export bans will weaken. Without the clear assurance of an export market, this pilot project will deliver far less benefit to Iraq and its sheep farmers.

Sheep Production Program Objective

The goal of the program is to double offtake and commercialize small-scale sheep production in Iraq, reorganizing and retooling small-scale producers and MOA/Agriculture College researchers and extensionists to support and promote the process.

A pilot program will result in the following:

- Increased sheep production for consumption and/or sale for domestic and export markets;
- Increased small-holder farmer incomes;
- Enhanced rural employment opportunities;
- Improved capacity of producer groups to compete in commercial sheep markets; and an
- Improved system for generating and delivering adoptable technologies.

DATE PALM RESTORATION PROGRAM DESCRIPTION[37]

The date palm—the nakhla, the tree of life—is the economic and symbolic foundation of Iraq's agricultural sector. For millennia, the date palm has been grown, marketed, and cherished by the people of Mesopotamia. It was the crop people could rely on during times of distress and famine. And in today's Iraq, restoration of this high-value fruit powerfully represents recovery of the entire country and economy from three decades of neglect and devastation.

In the early 1960s, Iraq had somewhere between 30 and 40 million date palm trees, but from this time forward, that number decreased precipitously. By the mid-1970s, the number of date palms declined to approximately 22 million, producing roughly 578,000 tons of dates. At present, Iraq has only 15 million trees, which produce some 250,000 tons annually. In the past, Iraq exported a large portion of its date production, and the country accounted for 30 percent of total global supply of dates. Iraqi dates are high-end varieties, demanded in markets around the world for their high sugar content and superb flavor and texture. During the period of sanctions, Iraq was not permitted to export, and it lost its valuable overseas markets to countries such as Tunisia, Saudi Arabia, and the UAE. Iraqi date growers and

[36] Although the CPA has lifted the export ban and made all animal sales abroad subject to a licensing procedure from the MOT, officials in the central and regional-local MOA believe such a ban remains in place.

[37] See Annex 7 for a full description of the program.

exporters made some international sales in 2003-2004, most of it poor-quality dates used for animal feed. To regain its position in the international date market, Iraq needs a coordinated effort among growers, processors, exporters, the MOA, and the donor community to improve and restore Iraq's competitive position in the international date market.

The Date Palm Restoration Program will tackle all links in the date palm value chain, beginning with revitalizing and protecting the date palm resource base and ending in export markets. The program will touch the lives of millions of Iraqi farmers. Date palm is the ultimate in scale neutrality; small-scale farmers with a few trees can participate in production, marketing, and export of this harvest as effectively as large-scale farmers. In addition, the crop is grown in 13 of the 18 governorates of the country. Thus, the income and employment effects of this program will be widespread and long-lasting.

The Date Palm Restoration Program will provide a model to show the benefits of cooperation between the government and private sectors to achieve competitiveness in a subsector where Iraq has an undisputed natural comparative advantage. This subsector is not faced with intractable policy issues such as price controls or PDS. It is relatively free from policies that might reduce the competitiveness of producers, processors, or exporters.

Date Palm Restoration Program Objective

The Date Palm Restoration Program is a national program to increase the date palm national resource base from 13 million to approximately 20 million trees in 10 years, doubling average date output per tree. As a private-public partnership, this program will emphasize private sector investments in tissue culture laboratories for the rapid reproduction of highly prized varieties, as well as public investments in research, extension, and varietal protection needed to sustain the program over the long term. The program will work with private companies in enhanced processing and packaging to recapture the high-end markets lost during sanctions. Successful implementation of this program will make dates the number one foreign revenue earner within five years.

ON-FARM SOIL-WATER-CROP PRODUCTION MANAGEMENT PROGRAM DESCRIPTION[38]

The irrigated agriculture sector has suffered substantially since the 1980s and is underperforming as a result of years of deterioration in the maintenance of irrigation systems and drainage networks, rising water development activities in Turkey and Syria, and increased soil and water salinity. More than half the irrigated area in southern Iraq, south of Baghdad, is affected by waterlogging and salinity, resulting in low crop production, poor quality of produce, and marginal farmers' income. The southern area is characterized by low rainfall (110-130 mm), mild winter, and extremely hot summer, and its agriculture depends

[38] See Annex 8 for a full description of the On-Farm Soil-Water-Crop Pilot Program.

almost entirely on irrigation. It comprises more than 40 percent of the arable land in Iraq, and produces most of the country's dates, vegetables, sunflower, rice, and cotton.

The planned rehabilitation of the major irrigation and drainage networks, hydraulic structures, and pumping facilities will only improve water supply to farm gates and will partially help on-farm waterlogging and salinity, but crop production will remain highly dependant on effective on-farm drainage and soil-water quality management practices. On-farm drainage is only part of the solution. Drainage helps the discharge of the irrigation leaching requirement in areas with saline soil/water, and controls waterlogging, but does not solve all water and soil salinity issues related to crop production. Iraq requires an integrated soil-water-crop production management that combines best practices related to: 1) irrigation techniques (flood, drip, sprinkler, and so on) and irrigation scheduling; 2) saline soil/water control; 3) waterlogging control; and 4) salt-tolerant crops and varieties, with progressive reintroduction of select date palms.

During the last two decades of isolation, Iraqi professionals had limited access to advances in water management and crop production practices. Data for crop water requirement, tolerant salt crops and variety, and soil salinity are inadequate. The MOA research and extension programs are limited to crop inputs and production and suffer from the limited number of qualified staff and a lack of strategy and linkages between extension and research institutions. MOA is responsible for estimating crop water requirements and also initiated in 2000 a National Program for Irrigation Technology, introducing sprinkler and drip irrigation in various parts of the country. The Ministry of Water Resources (MWR) is responsible for off-farm irrigation and drainage networks, and for land reclamation including land-leveling and installation of on-farm drainage networks. There is no on-farm water management program. MOA and the MWR have recently signed a Memorandum of Understanding that should lead to collaboration on on-farm water management.

USAID/ARDI began assisting MOA in December 2003 with crop technology demonstrations and management programs under a grant activity. In February 2004, ARDI began assisting the MOA national program for the propagation and improvement of date palms in Iraq. The crop technology program includes 123 demo sites that cover rainfed, supplemental irrigation, and fully irrigated farms, with emphasis on wheat and barley. The irrigated demo sites include eight reclaimed from salinization and seven on saline soil. ARDI date palms grants support the purchase of date palm offshoots for mother date palm orchards designed to preserve varieties, create a gene bank, and produce new offshoots for regeneration.

Building on the above irrigation and crop improvement programs, MOA will establish an integrated soil-water-crop production management pilot program. This will be carried out in collaboration with the MWR, farmers, and community groups and in synergy with other related national and donor programs. The pilot program will field test best irrigation, soil, and crop production practices to control soil salinity and waterlogging in southern Iraq, restore date palms, and improve varieties and yields for major crops in the region.

On-farm Soil-Water-Crop Production Management Program Objectives

- Establish demonstration sites (MOA in collaboration of MWR) to introduce integrated on-farm soil-water-crop production management good practices to control soil salinity and waterlogging in southern Iraq;

- Strengthen the national date palms production program and use water management techniques to support improved varieties for two major crops, preferably maize and forage, to foster poultry and livestock production;

- Build capacity in MOA, MWR, private sector, and farming communities, and strengthen coordination among these stakeholders to improve water allocation and on-farm soil-water-crop production management; and

- Replicate good practices and results to other farms.

AGRICULTURAL SECTOR PROGRAMS TO SUPPORT MARKET-BASED AGRICULTURE

The wheat, sheep, date palm and on-farm soil-water programs are directed at specific commodities and growing conditions. The transition to a market-led agricultural sector will also require three sector-level programs, in agricultural sector liquidity and credit (taking the place of government-provided inputs) land tenure (enabling investment in land resources), and support for vulnerable groups(ensuring that some Iraqis do not regress under market conditions).

Agricultural Sector Liquidity[39] The transition from government-directed, input-provided, output-determined agriculture to a market-led sector requires liquidity. Farmers must pay up front to take advantage of market opportunities, first buying equipment and inputs and later selling crops and animals. The funding of the investments (equipment, land-leveling, storage facilities, breeding animals, and so on) and working capital (such as seeds, planting, fertilizer, chemicals, harvesting, and veterinarian services) can be privately managed by some farmers. Others, perhaps the majority of smaller farmers in the present circumstances of Iraq, will be unable to fully participate.[40]

There are three opportunities for increasing agricultural sector liquidity, reaching three different groups of rural entrepreneurs and farmers:

- *Enterprise credit and leasing,* for larger loans to private businesses that support a modern agriculture sector: for example, providers of farm machinery, transportation, custom planting and harvesting, land-leveling, fertilizers and chemicals;

[39] See Annex 9 for descriptions of the various options for rural financial liquidity.

[40] Surveys of farmers in the south showed monthly expenses exceeding income. Annex 11 provides details on large and small credit programs and a survey of likely credit users in an area near Basrah.

- *Microcredit,* for two groups of borrowers: a) often unincorporated smaller traders and businesses: machinery repair facilities, fodder pellet processors, input application contractors, and so on; and b) farmer groups who accept joint liability for the unsecured loans made on the basis of knowledge of individuals' reliability;[41] and

- *Input provision* to farmers' societies or associations (cooperatives, producer associations) that receive and distribute inputs to members on credit, collect repayment at harvest or animal sale, and repay the input supply source.

All three options could be very useful. In the current situation in Iraq, financial institutions have the following opportunities to provide liquidity in the rural sector:

Upgrading the capacity, equity base, and management of the Agricultural Cooperative Bank (ACB).[42] As with all legacy financial institutions in Iraq, the ACB has many weaknesses and liabilities. These include a lack of lending procedures, over-reliance on collateral, and a negative net worth on its balance sheet caused by uncollectible loans made at the direction of the Ministry of Finance. There are significant strengths, however, including 40,000 savings and current account clients, 30,000 loan private (that is, not made at the direction of the government) clients, 42 branch offices, in-place management, and a functioning internal information system, albeit in need of upgrading.

The ACB is the obvious candidate to be re-capitalized, assisted in upgrading management and procedures, and charged with becoming a profitable agricultural sector financial institution. When this is accomplished, the bank can be privatized and managed as a commercial bank specializing in agricultural sector loans.

There are several different interpretations of the capital position of the bank. CPA reviewers of the bank categorized ID 37.9 billion in term loans from the government to ACB as an Other Liability. These loans from the government funded the directed loans from ACB to favored clients. If these loans are capitalized, as an independent reviewer believes should be the case, then the capital position of the bank is only $3.7 million negative. This is not a substantial amount considering the infrastructure of the bank and its capacity to provide liquidity in rehabilitating the agricultural sector.

Liquidity requirements for Iraqi financial institutions will require new capital of approximately $11 million for the ACB by the end of 2004. Since money-centered commercial banks are rarely interested in or able to lend to agriculture, the continuation of the ACB is important to the sector's modernization and growth. The ACB should be subject to a detailed and thorough assessment of needs and conditions—paying particular attention to the information systems between branch and head office—and we should determine from on-site inspection the costs of upgrading and then managing the bank. Then the appropriate resources and management should be identified to provide the support, if that is the judgment, to make the ACB a cornerstone of agricultural development in modern Iraq. An independent commercial bank lending to enterprises, farmer cooperatives, input suppliers and

[41] Called Village Banking in the vocabulary of FINCA, one of the more successful rural microfinance lenders.
[42] See Annex 9, Section B for a description of the ACB and recommendations for its revitalization.

output purchasers would provide the necessary financing to facilitate the transformation to market-based agriculture.

USAID's Development Credit Authority.[43] USAID has established the Development Credit Authority (DCA), a credit-enhancing mechanism in which USAID and a private lender each take 50 percent of the risk of any loss. The mechanism is flexible and can be applied on any kind of credit, such as loans, bonds, letters of credit, or other credit guarantees.

There are major difficulties, at this time, in using a DCA guarantee in Iraq. DCA is designed to leverage private sector funds. At present, the banking system is virtually all state-owned and could not be given a DCA guarantee without a waiver. Additionally, money incoming from such donors as the International Finance Corporation for on-lending does not qualify as private sector for DCA's purposes.

Over the medium term, however, there are ways in which this program could benefit Iraq's agriculture. One possibility is privatizing the ACB and making it eligible for DCA guarantees. More likely is a loan portfolio guarantee for an equipment manufacturer or seller to provide equipment finance, either as loans or leases. Farm equipment such as tractors, harvesters, trucks, and processing machinery could be guaranteed under DCA once an Iraqi government is established. DCA can also be used to guarantee sub-sovereign debt; that is, to enhance municipal credit, including for irrigation and potable water projects. This is a complicated procedure, but with the services of other USAID agencies providing assistance to municipal governments, it is a realistic option to be explored later in 2004.

Microcredit for small producers and entrepreneurs.[44] Microfinance offers the capacity to service small lenders at reasonable administrative cost, generally far below the per-loan charges of larger financial institutions. At their best, microfinance institutions are effective local lenders, gaining the confidence of small businesses, traders, and farmers in an area, then using this knowledge to grow into a savings deposit role, thereby mobilizing rural savings to re-lend into more productive uses. In some countries, commercial banks open special microfinance windows. In Iraq, where the formal banking system is in disarray, the CPA has funded several microcredit programs.

The Community Habitat Finance (CHF) nongovernmental organization (NGO) was awarded a $10 million grant, working in Baghdad and southern governorates. It does not target agriculture, but approximately 10 percent of the portfolio is connected with agricultural enterprises. ACDI/VOCA has received a USAID grant to allow on-lending. The program is just starting, with approximately $200,000 in outstanding portfolio as of February 2004. The program's target area includes agricultural processing and production. CPA South has established a $10 million pilot credit scheme working through the ACB. This is an example of a microfinance window in a commercial bank, with loans for working capital between $100 and $2,000, for up to 12 months. Here the lending target would be connected with the usual clients of the bank. To assist the program, CPA South is refurbishing four ACB branches. The CPA is directly administering a microfinance program with two private banks,

[43] See Annex 9 Section C for a description of the DCA.
[44] See Annex 9 Section D for a description of microcredit programs in Iraq.

the Bank of Baghdad and the Middle East Bank. Loans are up to $15,000 and the banks must add matching funds. This program is not focused on agriculture.

Microcredit targeted at rural producers would greatly add to the liquidity of the agricultural sector. These programs can be supported by many different donors, requiring an on-the-ground institution experienced in microfinance operations. A half-dozen well established microfinance NGOs could participate if the capital is provided by an international donor. Such a program would add significantly to the pace of agricultural modernization.[45]

Land Tenure Arrangements.[46] The State Board for Agricultural Land, within the MOA, holds land tenure records for agricultural land. The Ministry of Justice records land ownership rights. Because of the convoluted history of the ownership of agricultural land, beginning well before the Ottoman Empire, and the many different land reform programs—some dividing land into smaller parcels, some aggregating land into large holdings—the land tenure situation is less than straightforward.[47] These parameters seem to apply:

- *Owned land,* with deeded title and registration, constitutes a small percentage of total agricultural land. The State Board believes that figure is approximately 2 percent. The Agricultural Ownership Survey of 2001 set the number at 30 percent. The vast difference seems to be in confiscated lands that were "sold" to new owners, who may believe they own the land, but the titles apparently remained registered to the government.

- *Leased land,* is held by the MOA and leased to farmers on 25-year agreements, with rent negotiated every five years. This category of land, when added to the "distributed" category, which is land allocated to individuals or groups, but with conditions that allow the land to become "owned" or revert to the government, may total 66-90 percent of the total.

- *Records for agricultural land* are well documented using traditional methods by the staff of the State Board, and provide the basis for modernizing the records and accurate mapping using graphic information systems (GIS) technology.

MOA land is leased with requirements to grow strategic crops. The land tenure agreements thus provide the legal basis for insisting that government cropping orders be followed. There is documented evidence of farmers being removed from their land when they did not follow the crop production requirement of the government.

There is general agreement that privatizing government agricultural leasehold lands and "free distribution" lands would be a positive step. A market-oriented agricultural system must have clear land ownership, allowing the value of improvements to be captured by those who invest. The effort to complete a modernization plan for land tenure records, with privatization, is extensive but necessary. The land tenure legal expert who completed the paper in Annex 10 will return to create consistency among the various land tenure reports,

[45] See Annex 11 for a field survey of potential credit users near Basrah.
[46] See Annex 10 for a description of the land tenure system.
[47] See Annex 10 Section B for a U.S. Library of Congress historical perspective on land tenure in Iraq.

complete a field survey of land record documentation, and prepare a comprehensive plan for modernizing agricultural land tenure using GIS applications to demarcate holding boundaries. He would work with the MOA to prepare a proposal for land privatization with schedules and estimated costs. This program is a necessary foundation for the transition from state-led to private sector-led agriculture in Iraq.

Helping Farm Communities Make the Transition to Market-Led Agriculture. To create a butterfly (private-sector agriculture) from a caterpillar (state-controlled agriculture), in an environment where many are subsistence farmers, requires a transition period and deliberate programs to assist those unable to respond to market signals. This transition plan offers the following assistance to farmer decision makers as the state exits production control:

- Four-year transition for subsidies on fertilizer, allowing farmers to benefit from lower-than-market prices for a critical input;

- Government floor prices on principal crops, set before the planting seasons, allowing farmers to know minimum prices of output when making planting decisions; and

- Subsidies for national resources held by farmers:

  - Vaccination for livestock against epidemic diseases;
  - Soil laboratory testing facilities to customize fertilizer applications;
  - Aerial spraying of date palms against the red weevil; and
  - Fungicide treatment of certified wheat seed against smut.

This plan proposes two extensive programs to assist farm producers:

- Rural enterprise, farm producer, and farmer producer organization credit, from the ACB, multiple microcredit lenders, and guarantees for equipment and machinery leases; and

- Privatization of agricultural land so owners have registered collateral to use in obtaining formal credit.

There remains a need for directed assistance that will help farmers access services and inputs from private sector suppliers, most easily obtained through group cooperation. Two different kinds of organizations could be used to support farmers:

Farmer Organizations. Although burdened by a disastrous history in Iraq as a political arm of an unpopular government, farmers' organizations, correctly chartered and assisted rather than directed, can support those in need as government participation declines and farmers respond to market forces in their agricultural production decisions. The institutional base for farmers' economic associations—cooperatives, producer associations, marketing associations, input supply associations, and so on—remains weak to non-existent.

Existing organizational structures include the General Union of Iraqi Farmers, which has a national structure and chapters in governorates, districts, and sub-districts.[48] This organization, although chartered with the objective of assisting the marketing, buying, and selling of agricultural inputs—in addition to organizational and information dissemination activities—does not appear to be organized to sign binding contracts or handle money collected from farmers for the purpose of obtaining economies of scale in input purchases. This newly emerging organization is not directly subordinate to the MOA, and as a new entrant into rural society, its roles, functions, and utility are still uncertain.

Other USAID and military programs have created local organizations to mobilize farmers, one using the legal supra-structure of an NGO, the other forming a joint stock company. Both are innovative solutions to a local problem, but they do not meet the need for a legal structure that supports country-wide economic organization of farmers.

A Farmers' Cooperatives Law—established in 1977 and amended in 2001— is still, so far as can be determined, the prevailing legal basis for cooperatives.[49] This law is filled with revolutionary rhetoric but contains damaging conditions that place the cooperative under the direct control of the MOA. Under the law, the MOA was the guarantor for cooperative loans drawn from the ACB and could defer loan payments for up to two years. While the MOA has officially withdrawn from oversight of cooperatives, no new or revised law allows for the independent formation of producer groups with the right to perpetuate legal contracts, borrow money, and otherwise serve farmers' economic interests.

This is unfinished business: a supporting institutional system within the agricultural sector must be established immediately to allow farmers' groups to organize and gain support, in the interests of modernizing the sector.

Community Organizations. A social structure in Iraqi communities designates a Sheikh as leader and representative of a defined group of villagers/farmers. Sheikhs have authority from tribal and familial lineage and are charged with ensuring that individuals under their auspices benefit from development projects. Although this power can be abused, it represents a potential avenue for assisting those farmers who, independently, will be unable to approach lending organizations, input suppliers, and custom machinery operators to obtain competitive prices, credit, or other contracted services.

CPA South/Central in Hillah has assisted in forming the Farmer Societies of Sheikhs, with representation at district, governorate, and regional levels. This organization is impressive and its leaders represent many thousands of farmers within this traditional social structure. CPA has empowered this group to accept funding and to participate in development programs. It is an excellent model to test—that is, to provide assistance to a population

[48] General Union of Iraqi Farmers, By-laws (Rules of Procedure)

[49] A separate Cooperative Law under the purview of the Ministry of Interior corresponds closely to what is needed, but a provision in the law allows specialized laws already on the books to supercede this more general law. Thus, the Farmers' Cooperatives Law is the legal basis that governs cooperatives at this time in Iraq.

through the organizational leadership of Sheikhs while monitoring the results to ensure benefits flow to those most in need.

Before farmer cooperatives are established as independent vehicles for collective action supporting farmers' interests, a community development program should be begun and tested in the 15 governorates where this social structure operates. These pilot projects could be run in the same locations as the on-farm water management pilot tests to see that the benefits from improved water management and crop production flow all the way to the bottom of rural society. Success in a pilot test could lead to the design of a major rural development program directed at agricultural production but implemented through a more traditional community structure.

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