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AGRICULTURE RECONSTRUCTION AND DEVELOPMENT PROGRAM FOR IRAQ

ASSISTANCE TO THE GOVERNMENT OF IRAQ: INFORMATION AND STATISTICS

November 2005

This publication was produced for review by the United States Agency for International Development. It was prepared by Development Alternatives, Inc.

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I. Introduction

Iraq's transition from a centrally-planned to a market-based economy has changed the role of the Government of Iraq in the economy. The Government is reducing its direct intervention into commercial activity, and instead is working to promote private enterprise through the creation of an environment that will permit the growth of a stable and transparent market. The role of individual economic agents (producers, buyers and sellers) is also changing; instead of following direction from the Government to conform to a central plan for the economy, producers, buyers and sellers must make business decisions based on economic factors.

Although the Government of Iraq has reduced significantly its direct intervention in commercial activity, it nonetheless has an important role to play to ensure the health of its economic sectors, including agriculture, which is the second largest contributor to Iraq's GDP after oil and the largest economic sector by employment. In order to promote the agriculture sector, the Government must maintain an efficient market in which private business, including farming, can flourish; provide assistance to economic agents, including producers and consumers of agricultural products, to help them make good business decisions based on economic factors; and provide assistance to the agricultural sector to promote and support agricultural production when necessary.

This report will discuss ARDI's assistance to the Government of Iraq during the transition to a market economy, including the promotion of a stable, transparent and efficient market; assistance to individual economic agents; and planning assistance programs to ensure the health of Iraq's agricultural sector.

II. Collection and Dissemination of Economic Agricultural Data

The availability of market data to all economic agents is an important element of a stable, efficient market. Asymmetrical possession of market information by those who have the means to collect it through private networks leads to market distortions and failures. A public system of collection and dissemination of market data prevents such asymmetrical possession, and also reduces the cost of multiple private networks of data collection.

In the agricultural sector, information on market prices and production is used by farmers, consumers and traders to make business decisions. A public system of data collection and dissemination ensures that all economic agents have access to these data, so that the market will work efficiently.

A public system of data collection also provides the government with the data necessary to assess the health of economic sub-sectors and plan assistance programs. In the

agricultural sector, the collection of data about prices, production, land-use, crop suitability, and other factors that affect agricultural production are useful in planning efficient and effective assistance.

Market Price Surveys

Price information is an essential factor in the business decisions made by producers, buyers and sellers in a market economy. The Government of Iraq does not yet have a mechanism to collect and disseminate market price information. ARDI is implementing a project to create an infrastructure for price monitoring to fill this information gap. ARDI currently sponsors two market price surveys:

- A daily report of origin and price for 65 types of fruit and vegetable prices in 14 governorates;
- A weekly report of dry goods in 13 governorates. The dry goods report includes the origin and price of meat, fish and poultry; grains, including maize, wheat and barley; and agricultural inputs such as fertilizers. The report also includes price information for items in the Public Distribution System sold in the market, including cooking oil, sugar, flour, chickpeas and rice.

The main target of these price reports are producers, buyers and sellers. Currently the report is disseminated by email, and hard copies are disseminated in the wholesale markets by the price monitors the day after publication. In order to increase access to the price reports, ARDI is considering other means of distribution, including a website, text messaging to mobile phones, and a telephone hotline.

Crop and Sub-Sector Surveys

Information about aggregate production of crops and sub-sector production such as poultry and livestock is a primary factor in the determination of prices, and is therefore valuable to economic agents in making decisions about the production, sale and purchase of agricultural products. Thus, a public system for the collection and dissemination of data about agricultural production is essential to ensure that all producers, buyers and sellers can make sound business decisions based on economic information. Data on crop and sub-sector production is also valuable to the Government of Iraq to assess the health of the agricultural sector.

In 2003, the Government of Iraq had little capacity to acquire or analyze data about the production of crops, poultry and livestock. Since then, with some assistance from ARDI, the Ministry of Agriculture in Baghdad has set up a Statistics Unit for the purpose of collecting and analyzing agricultural production data through crop surveys. ARDI collaborates with the Statistics Unit, as well as with the Ministries of Agriculture and Irrigation in Erbil and Sulaymaniyah, to carry out a range of crop surveys. ARDI has provided training for 250 staff members from the Ministries to learn how to carry out the surveys. ARDI has also provided resources for data entry and data analysis.

To date, ARDI and the Ministries have collaborated to conduct the following surveys:

Winter Crop Surveys

Winter crop surveys for the 2004/2005 season have been conducted in Sulaymaniyah, Dahuk, Erbil, Diyala, and Babylon. The surveys determined accurate estimates of area, yield, and cost of production for the main winter field crops and vegetables: wheat, barley, winter vegetables, as well as fallow and pasture land.

Summer Crop Survey

A summer crop survey for the 2005 season is in progress in Sulaymaniyah. The survey will determine accurate estimates of the principal crops grown during the summer months, including melons, watermelons, rice, maize, and cotton, as well as fruit tree orchards.

Poultry Surveys

Poultry surveys have been completed in four governorates: Baghdad, Sulaymaniyah, Erbil and Dahuk. The surveys determined basic information about poultry farm production, including ownership, production inputs and capacity, and problems and potential of the poultry industry.

Livestock Surveys

A livestock survey is currently underway in Sulaymaniyah to determine the number and location of cows, buffalo, sheep and goats in the governorate. This inventory will be used by the Ministry of Agriculture and Irrigation in Sulaymaniyah to plan the 2006 Animal Health Program, including vaccination campaigns against infectious diseases such as Foot and Mouth and Brucellosis.

In addition to the inventory, a smaller survey of dairy cows is being conducted. The survey is being conducted on Freisian cross-bred cows and local cows to determine the impact of breed on levels of milk production.

2007 National Agriculture Survey

ARDI is also working with the Ministries to prepare for the National Agriculture Survey of 2007. This comprehensive survey will collect information on many agricultural sub-sectors, including crops, livestock, poultry and agricultural machinery. The Ministries have requested ARDI's assistance in procuring and using new technologies to conduct the survey, such as efficient area sampling methods, remote sensing and satellite imagery, internet communications capabilities, Global Positioning Systems (GPS), data processing with desktop computers, and Geographical Information Systems technology.

In preparation for the 2007 National Agriculture Survey, ARDI is working with the Ministries to conduct Winter Crop Surveys for the 2006 season in twelve governorates: Ninewa, Tameem, Basrah, Wassit, Thi-Qar, Erbil, Dahuk, Sulaymaniyah, Diayala, Babylon, and two that will be determined. ARDI will assist in training Ministry staff as enumerators to carry out these surveys; these enumerators will be prepared to conduct the National Agriculture Survey in 2007.

III. Use of Advanced Technology for Agricultural Planning

Agro-Ecological Zone Mapping

In order to maximize its capacity to assess the health of the agricultural sector and plan and allocate assistance resources to support the agriculture sector, the Government of Iraq must utilize advanced technology such as remote sensing and Geographical Information Systems (GIS) for data collection, presentation and analysis. The Government has initiated a new program for Agro-Ecological Zone (AEZ) mapping, which utilizes these technologies for the collection and manipulation of data relevant to agricultural production. The program is an inter-ministerial effort involving the Ministries of Agriculture, Water Resources, and Transportation.

The Ministries are in possession of satellite imagery showing areas of agricultural production in Iraq. Using AEZ technology, this satellite imagery can be combined with such inputs of raw data as soil, climate and socio-economic data to generate multi-layered views, or maps, that illustrate ecological conditions, land-use, and other factors that impact agricultural productivity. This information is valuable for agricultural planners, who can use these data to make assessments about the agricultural sector in Iraq, including crop suitability for different agro-ecological zones in Iraq; water management and use; and water and soil requirements for different crops. These types of assessments will help the Ministry of Agriculture allocate assistance resources and design effective support for farmers, including advising on proper cultivation methods and other practices to help farmers maximize yields and income from agricultural production.

ARDI is cooperating with the Ministries to provide support for the Agro-Ecological Zone program, including an AEZ facility equipped with the hardware and software necessary to create AEZ maps, and the training necessary to prepare Ministry officials to implement the program. Fourteen officials from the participating Ministries have received training in GIS technology, and thirteen officials from the Ministry of Agriculture have been trained in Remote Sensing.

Currently, AEZ professionals are working full time at the MOA/ARDI AEZ facility to create the first land cover maps of the program, which show the extent of arable land in Iraq. Data obtained from satellite imagery are used to differentiate between healthy and unhealthy vegetation, barren and productive land, and dry and moist soil. Eventually this satellite imagery will be combined with such data collected on the ground as crop type, incidence of pests, and proximity to roads and markets to create land suitability maps in different regions of Iraq. Using remote sensing, the AEZ program will be able to capture data from large areas over consistent periods of time, providing highly accurate data and enabling the calculation of the growing season length and phenological patterns.

National Agriculture Information Center

In order to maximize the long-term usefulness of agricultural sector data collected through market price surveys, production surveys, and the Agro-Ecological Zone program, the Ministry of Agriculture has proposed a National Agriculture Information Center (NAIC) in

which agriculture information will be organized and stored. The NAIC will utilize some of the principles of the AEZ program to tag data with location coordinates to facilitate geo-referencing and the creation of maps. The data stored in the NAIC will be used by the Ministry of Agriculture to make decisions about the agricultural sector at a national level, including decisions about production, marketing, and exports.

Land Registration

Government registration of land ensures that land ownership is clearly defined, which is essential for continued sustainability and growth in agricultural production. The distribution of State-owned agricultural land to farmers in Iraq is governed by laws that register and document use rights, inherited rights, and rights to rent out agricultural lands owned by the government to individuals and the private sector. It is the responsibility of the Government to maintain a system to record land registration in order to enforce these laws.

The State Board for Agricultural Lands, part of the Ministry of Agriculture, previously kept a system of paper records of land registration, but these were damaged in 2003. A new, secure system for parcel-based land registration in Iraq is necessary to enable the State Board for Agricultural Lands to follow up on contractual commitments, re-organize agricultural lands after reclamation, register owner's rights, allocate lands for state projects, provide legal opinion in state courts concerning disputes between individuals and the State, monitor payments associated with rented State lands, and conserve historical sites in agreement with existing laws. A standardized, parcel-based land registration system can also be adapted should the Government of Iraq choose to transition to a system of private land ownership.

ARDI is assisting the State Board for Agricultural Lands to create a secure electronic system using Geographic Information System (GIS) technology. ARDI has granted the State Board the equipment necessary to create a new lands and property registration system, including computer work stations, digital mapping equipment, satellite imagery and software. In addition, staff of the State Board for Agricultural Lands have been trained in remote sensing and GIS technology. Using this equipment and training, the State Board will create a standardized land registration system that will clearly delineate the outline of each parcel of land. Staff of the State Board will capture old files, convert microfilm records to digital files, and create a database for cadastral maps and survey plans. They will also verify exiting maps and surveys and conduct new field surveys to gather additional data and ensure that the new digital system contains complete information.