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Report Name: Food for Progress Jordan Success Story - Where Harvesting Every Drop of Water Counts

Country: Jordan

Post: Amman

Report Category: Agricultural Situation, Agriculture in the Economy, Policy and Program Announcements, Agriculture in the News, Climate Change/Global Warming/Food Security, Grain and Feed, SP1 - Expand International Marketing Opportunities, Country/Regional FTA's, SP3 - Build Demand in Developing Countries through Trade Capacity Building

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Report Highlights:

Since fiscal year (FY) 2012, the U.S. Department of Agriculture's (USDA) Foreign Agricultural Service (FAS) and the Hashemite Kingdom of Jordan's Ministry of Planning and International Cooperation (MOPIC) have agreed to the supply of U.S. agricultural commodities under the Food for Progress Program (FFPr). Three separate U.S. agricultural commodities donations, benefiting U.S. farmers, total $54.2 million. These FFPr program allocations have strengthened the relationship with a strategic ally, and free trade agreement partner, in the politically tumultuous Middle East. The FFPr Badia Water Harvesting project ($4 million) is making a positive return on investment; at 60 percent complete, water is already being collected in the volume of millions of cubic meters.

GENERAL INFORMATION

The U.S. Department of Agriculture's (USDA) - Foreign Agricultural Service (FAS) Food for Progress (FFPr) program helps developing countries and emerging democracies modernize and strengthen their agricultural sectors. U.S. agricultural commodities donated to recipient countries are sold (i.e., monetized) on the local market and the proceeds are used to support agricultural, economic, and or infrastructure development programs. Food for Progress has two objectives: 1) to improve agricultural productivity and 2) expand trade of agricultural products.

In an effort to use the food resources of the United States in support of countries that have made commitments to introduce or expand free enterprise elements in their agricultural economies through changes in commodity prices, marketing, input availability, distribution, and private sector involvement, the U.S. government, acting through the USDA's Commodity Credit Corporation (CCC), and the Government of Jordan, acting through the Ministry of Planning and International Cooperation (MoPIC) have agreed that the donated agricultural commodities are to be used in accordance with agreements and projects identified by the different Jordanian government agencies (such as the Ministries of Agriculture and of Water and Irrigation, as well as the Jordan Food and Drug Administration).

A key component of these agreements is that Jordan commit to and implement policies that promote economic freedom; private, domestic production of commodities for domestic consumption; and the creation and expansion of efficient domestic markets for the purchase and sale of agricultural commodities.

FOOD FOR PROGRESS IN JORDAN

Since 2012, the USDA has provided Jordan project financing through the Food for Progress program. Monetization of USDA donations of U.S.-origin hard red wheat in the amount of 300,000 metric tons (MT), valued at $54.3 million, have funded 12 agricultural development projects in Jordan; including drilling the Shedeyyeh-al-Hasa 1,500 meter deep wells, the al-Karak dam, the Na'our wastewater treatment facility's sewer networks that facilitate wastewater reuse for agricultural purposes, and Badia water harvesting ponds).

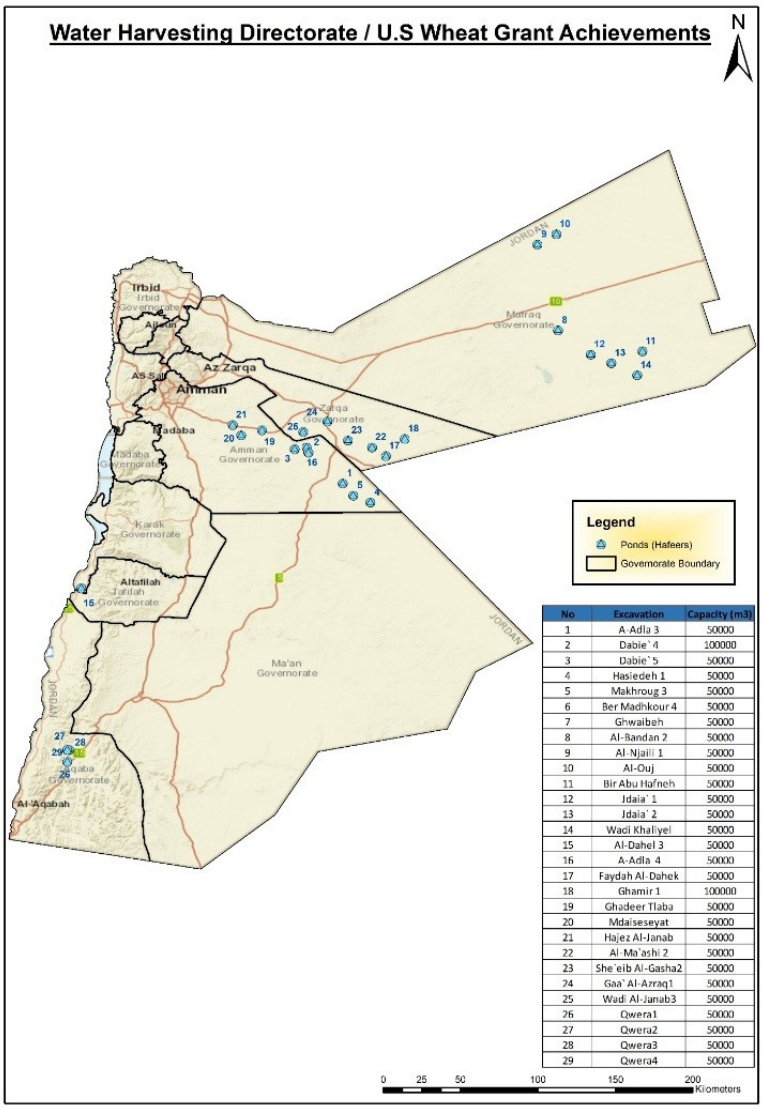
The Food for Progress projects with Jordan – FY 2015 contains priorities identified by the different Jordanian government agencies and coordinated through the Ministry of Planning and International Cooperation. FAS Amman\Cairo (Post) have looked into the feasibility and sustainability of the projects, ensuring that the following criteria are met: soil, water, and or environmental conservation; strengthening Jordan's sanitary and phyto-sanitary (SPS) and reporting capabilities as stipulated in the U.S.-Jordan Free Trade Agreement) and enhancing trade enabling activities. A number of these programs are aimed at improving the availability of water for agriculture. The Badia Water Harvesting project ($4 million) is making a positive return on investment; at 60 percent complete water is being collected in the volume of millions of cubic meters.

FFPR – BADIA WATER HARVESTING PROJECT (FY 2015 FUNDING

The Jordanian Badia (dry rangelands) is a region of desert, semi-desert, and steppe that accounts for 85 percent of Jordan's land area (or some 75,482 square kilometers). With open, rocky, or gravelly desert

pavement, cut with occasional *wadis* (dry river valleys, channels), rainfall in the Badia drains quickly into gullies and out of the watershed, before flooding and evaporating. It receives less than 150 millimeters (mm) of water per annum (normally flash floods of 50 mm) but constitutes an important source of grazing for livestock breeders. Severe water shortage and excessive grazing has led to soil erosion and land degradation.

The Food for Progress Badia Water Harvesting project envisions the construction of 50 large-scale earthworks (i.e., ponds) with a total planned volume storage capacity of 10 million cubic meters of water – 29 sites to date have been constructed. Its objective is to retain greater amounts of water in the watershed and release it slowly into the ground where it can be utilized over prolonged periods, charging the aquifer. The project recreates the natural hydrologic function of the area, capturing runoff into the ground. Water that is slowed and stored upstream is already having a positive impact on the overall ecosystem and downstream, harvesting more water and promoting vegetation (used for grazing) growth.



No	Excavation	Capacity (m3)
1	A-Adla 3	50000
2	Dabie`4	100000
3	Dabie`5	50000
4	Hasiedeh 1	50000
5	Makhroug 3	50000
6	Ber Madhkour 4	50000
7	Ghwaibeh	50000
8	Al-Bandan 2	50000
9	Al-Njaili 1	50000
10	Al-Ouj	50000
11	Bir Abu Hafneh	50000
12	Jdaia` 1	50000
13	Jdaia` 2	50000
14	Wadi Khaliyel	50000
15	Al-Dahel 3	50000
16	A-Adla 4	50000
17	Faydah Al-Dahek	50000
18	Ghamir 1	100000
19	Ghadeer Tlaba	50000
20	Mdaiseseyat	50000
21	Hajez Al-Janab	50000
22	Al-Ma'ashi 2	50000
23	She`eib Al-Gasha2	50000
24	Gaa`Al-Azraq1	50000
25	Wadi Al-Janab3	50000
26	Qwera1	50000
27	Qwera2	50000
28	Qwera3	50000
29	Qwera4	50000

Source: Ministry of Agriculture\Water Harvesting Directorate (U.S. Wheat Grant), FAS Amman office research.

Table 1: Badia Water Harvesting, Pond Sites and Capacity

Excavation No.	Excavation Name	Governorate/ Directorate	Capacity m^3	Coordination (X)	Coordination (Y)
1	A-Adla 3	Amman	50,000	36.9043	31.4256
2	Dabie` 4	Amman	100,000	36.6929	31.6391
3	Dabie` 5	Amman	50,000	36.6188	31.6293
4	Hasiedeh 1	Amman	50,000	37.0596	31.3202
5	Makhroug 3	Amman	50,000	36.9550	31.3638
6	Ber Madhkour 4	Aqaba	50,000	35.2637	30.36.38
7	Ghwaibeh	Karak	50,000	30.7474	35.3905
8	Al-Bandan 2	Mafraq	50,000	38.1511	32.3248
9	Al-Njaili 1	Mafraq	50,000	38.0344	32.8201
10	Al-Ouj	Mafraq	50,000	38.1362	32.8796
11	Bir Abu Hafneh	Mafraq	50,000	38.6449	32.2041
12	Jdaia` 1	Mafraq	50,000	38.3393	32.1833
13	Jdaia` 2	Mafraq	50,000	38.4605	32.1286
14	Wadi Khaliyel	Mafraq	50,000	38.6052	32.0631
15	Al-Dahel 3	Tafila	50,000	35.3799	30.8217
	Nmaim	Tafila	50,000	35.749	30.8826
16	A-Adla 4	Zarqa	50,000	36.7008	31.6087
17	Faydah Al-Dahek	Zarqa	50,000	37.1476	31.5860
18	Ghamir 1	Zarqa	100,000	37.2626	31.6932
19	Ghadeer Tlaba	Amman	50,000	36.4297	31.7404
20	Mdaiseseyat	Amman	50,000	36.3133	31.7052
21	Hajez Al-Janab	Amman	50,000	36.2592	31.7708
22	Al-Ma`ashi 2	Zarqa	50,000	37.0725	31.6413
23	She`eib Al-Gasha2	Zarqa	50,000	36.9300	31.6796
24	Gaa` Al-Azraq1	Zarqa	50,000	36.8082	31.7868
25	Wadi Al-Janab3	Amman	50,000	36.6676	31.7326
26	Qwera1	Aqaba	50,000	35.3142	29.8792
27	Qwera2	Aqaba	50,000	35.3033	29.8813
28	Qwera3	Aqaba	50,000	35.2959	29.8843
29	Qwera4	Aqaba	50,000	35.2979	811229.
		TOTAL:	1,600,000		

Source: Ministry of Agriculture\Water Harvesting Directorate (U.S. Wheat Grant), FAS Amman office research.

With the construction of 29 water harvesting ponds completed, rain runoff water capture storage capacity now already amounts to 1.6 million cubic meters; 1.2 million cubic meters were captured in during the winter of 2019. In comparison, the al-Karak dam ($10.4 million) when filled at capacity holds 2 million cubic meters of water (with an inflow and outflow of 4 million cubic meters).

Source: Ministry of Agriculture\Water Harvesting Directorate (U.S. Wheat Grant), FAS Amman office research.

Jordan's Ministry of Agriculture aims to restore sites in the Badia to provide increased vegetation for livestock and capture more water for communities in the area. To ensure the project's success, the ministry is focusing on sites that directly benefit underserved communities. The project encompasses the construction of 20 kilometers of alignment and paving of canals and dry river valleys and channels. The main beneficiaries are herders and rural communities of marginal lands where sheep and goats are the main source of income.

Tendering for construction of the remaining 21 planned water harvesting ponds is subject to the Ministry of Finance allocating funds through the national budget as approved by the parliament. According to the

Jordanian procurement law, it is unlawful to tender out a budget allocation without it being included in the parliamentary approved budget law.

Source: Ministry of Agriculture\Water Harvesting Directorate (U.S. Wheat Grant), FAS Amman office research.

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JORDAN'S DIMINISHED WATER SUPPLIES

Jordan with a population 10.8 million (Central Intelligence Agency, July 2020 estimate), neighboring Israel, the West Bank, Syria, Iraq, and Saudi Arabia, is confronting serious water challenges. It is a water poor country, characterized by the scarcity of renewable freshwater resources. Located in an arid to semi-arid region, it receives scant rainfall (on average less than 120 mm per annum of rain); only 1.3 percent of the land receives rainfall more than over 500 mm (in the highlands). By century's end, Jordan will receive 30 percent less rain than today. Well water depth currently ranges between 400 to 600 meters. The Ministry of Water and Irrigation indicates that the changes since 1995 in groundwater flow patterns, declining water levels, and the extent of the dried-up areas are significant and, particularly in the northeastern and central part of the country, highly alarming. Water level drawdown increases energy consumption for raising water, increasing farmer's operational costs.

Climate change has led to diminished rainfall and increased temperatures in Jordan, with precipitation levels dropping by 5-20 percent over the past four decades. It has become one of the top-10 most water-scarce countries in the world. The country's renewable water supply currently only meets about half of the population's water demands, with groundwater being used twice as quickly as it can be recharged. A high rate of population growth and the influx of refugees from regional conflicts are putting additional strain on an already diminished water supply.

Safe drinking water and proper sanitation services are fundamental to the health and wellbeing of the people of Jordan, and water is a central component of food production and economic growth. Sustainable and inclusive access to water is critical for the country's long-term stability and prosperity. To ensure the supply of water to the capital city of Amman (4.3 million), the government is increasingly diverting water from the Jordan Valley, the country's most productive agricultural production area,

which is unsustainable. Jordan is a net food-importing country, purchasing approximately 96 percent of its requirements from abroad.

Prior to 2012, Jordan had a population of 6.2 million (and it is thought that then already 65 percent of Jordanians were of Palestinian origin). The Syrian conflict resulted in the influx of over 650,000 UN-registered refugees (80 percent live in Jordan's urban areas). However, the latest census figures put the numbers of Syrian refugees at about 1.3 million (2016). The country has also seen an influx of Egyptian, Yemeni, and Libyan nationals in recent years; estimates put the total number of refugees in Jordan at 2.9 million.

Attachments:

No Attachments.