

SEMI-ANNUAL REPORT

March 31, 1991

Integrated Agricultural Development Project:
Maryut Agroindustrial Complex in the
Western Desert of Egypt

Submitted to the
Agency for International Development

by the
San Diego State University Foundation

In cooperation with the
Albert Einstein Peace Prize Foundation

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OVERVIEW

The Integrated Agricultural Development Project: Maryut Agroindustrial Complex in the Western Desert of Egypt (Maryut Project, Contract Number: ANE-0158-G-SS-9006-00) has become a major research and development center for a large agricultural and reclamation effort underway in Egypt's Western Desert.

This project is supported through the Regional Cooperation Program initiative by the Bureau for Europe and Near East of the Agency for International Development. As such, the Maryut Project is a trilateral cooperative program involving participants from the Arab Republic of Egypt, the State of Israel and the United States. The Regional Cooperation Program, since its inception, has essentially been a program to bring together Arab (exclusively Egyptian), Israeli, and American universities, government ministries and other institutions and individuals in joint activities that promote cooperation in scientific and technical fields of mutual interest. The Maryut Project exemplifies the spirit of such cooperative initiatives.

Research and development work is being carried out by Egyptian and Israeli scientists in the two corresponding countries, with consultation from their American counterparts. To support this work in Egypt, a research and development site was constructed alongside the Alexandria-Cairo main desert road, some 100 kilometers south of Alexandria. Work on the site began in October 1989. The project work in Israel is being conducted at three sites: The Volcani Center of the Agriculture Research Organization, the Faculty of Agriculture of the Hebrew University of Jerusalem in Rehovot, and the Institutes for Applied Research of the Ben-Gurion University of the Negev in Beer-Sheva.

This Semi-Annual Technical Report of the initial activities of the **Integrated Agricultural Development Project: Maryut Agroindustrial Complex in the Western Desert of Egypt** was prepared by the San Diego State University Foundation utilizing input from individuals from the Arab Republic of Egypt, the State of Israel and the United States of America.

PROGRESS IN COMPARISON WITH GOALS AND WORK PLANS

Progress in comparison with goals and work plans established for the period and with those stated in the proposal upon which the program has been based, has been excellent. An overview follows:

At the Maryut site, second-year project research activities are concentrating upon three areas of intensive agriculture: vegetables, fruit trees and ornamentals. The performance of five major vegetable crops--tomatoes, peppers, eggplants, melons and cucumbers--are being studied in walk-through tunnels, low tunnels out-of-doors, and in open field. The objective of this work is to optimize the out-of-season production of these crops in an area which is climatically suitable for such production. Also during the second year at Maryut, four new crops are being introduced: squash, green beans, watermelon and artichoke. The first three under plastic protection; the final two crops are grown under open field conditions.

In addition, a number of agromanagement trials are underway. These include: the effects of various sources of organic materials and their rates of application; fertigation trials, and post-harvest studies. During the second year of studies the plantation of fruit tree cultivars and species was nearly completed.

Floriculture trials are being conducted with greenhouse-planted roses and flowers grown in open fields. A number of shrubs and trees for the production of decorative branches were planted at the Maryut site. Four varieties of lawn species are also being grown, as are a large variety of desert landscaping plants. These plantings are being introduced in preparation for the initiation of the desert landscaping garden.

Other major activities at the Maryut site are the installation of a buried drainage system, and the construction of a nursery for vegetables and annual flowers. This nursery is designed to supply the research site demands for high-quality seedlings, as well as a local demand for high-quality cultivars of promising species. Preparations have been underway for the connection of the site to the national electricity grid.

Some 30 graduate engineers are to be trained at the Maryut site and at the Do¹ Training Center in Cairo, on methods of intensive agricultural methods and techniques. This group will become the nucleus of a team of experts for

future extension work to farmers in the newly-reclaimed lands in Egypt's Western Desert.

In Israel, a survey is being conducted of native and domesticated flora to identify and collect propagation material suitable for the out-of-doors production of ornamentals and for desert landscaping. Propagation material of 600 potential species is being collected in other countries and sent to Israel for studies. Research continued on a grafting of selected cultivars from the protocacae family on rootstock tolerant to high pit. ? probably = pH

Other activities, include the introduction of ergugium plannum and lobelia fulgens, as well as studies on the use of annual native plants for environmental landscaping. Israeli scientists participating in the Maryut Project worked on the development of uncomplicated methods to assess the taste quality of tomatoes and melons. Studies also continued of the European market importation of out-of-season tomatoes from Mediterranean countries.

PERSONNEL CHANGES

There were no personnel changes during the reporting period.

MEETINGS AND COLLABORATIVE ACTIVITIES

A list of meetings and collaborative activities is included as Attachment 1. Also included in this list are individuals who attended, as well as the purpose, or title, of the meeting and the dates for such activities.

PROCUREMENT

Attachment 2 outlines procurement for the reporting period.

PUBLICATIONS AND INTELLECTUAL PROPERTY RIGHTS

No publications were reported during this period.

ATTACHMENT 1

MEETINGS AND COLLABORATIVE ACTIVITIES

SEPTEMBER 30, 1990 - MARCH 31, 1991

ATTACHMENT 2

PROCUREMENT

SEPTEMBER 30, 1990 - MARCH 31, 1991

136312	1/91	Wescor Scientific Products	1-Chlorophyll Meter SPAD-502	\$1,200.00
			Shipping charge	\$4.00
			Sales Tax	\$84.00
	1/91	Minolta	1-Chroma Meter CR-200	\$4,850.00
			3 ea. 4 Zone jumper cables	\$6.00
			20 ea. RA Irrrometer 12"	\$1,100.00
			10 ea. RA Irrrometer 24"	\$575.00
			5 ea. RA Irrrometer 48"	\$314.00
			10 ea. Watermark Sensor 5'	\$120.00
			Shipping Charge	\$17.00
136904	1/91	CID, Inc.	CI-350 Lab Gas Analyzer	\$4,920.00
			Shipping Charge	\$30.00
			CI-301 Gas Analyzer	\$5,880.00
			Shipping Charge	\$30.00
136905	1/91	EG & G Chandler Engineering	1-Gas Chromatograph/Series 400	\$14,500.00
			Transformer Installation	\$300.00
			Shipping Charge	\$500.00
136908	1/91	Turfco Manufacturing, Inc.	Pipe Piper 230A 12" depth	\$11,650.00
			Lost Motion device	\$24.00
			3/4"-1 1/2" Poly Grip	\$56.00
			Expanding collet grip for 1" PVC	\$102.00
			Expanding collet grip for 1 1/4" PVC	\$102.00
			Set wrench for collet grips	\$16.00
			Point for blade 2-1/4" diameter	\$43.00
			Blade - 12" depth	\$78.00
			Shipping Charge	\$387.00
136910	1/91	P.K. Morgan Instruments, Inc.	P-100 Temperature Logger	\$1,950.00
			P-102 Temperature Probe Sensor	\$495.00
			C-100 Leaf Area Meter	\$3,950.00
137036	2/91	Agricultural Supply, Inc.	3 ea. Lakos 30 mesh screen	\$4,065.00
			3 ea. Flange Adapter 4-10"	\$468.00
			1 ea. PC242SS 18 Mesh/Lakos	\$1,725.00
			1 ea. Flange Adapter 10-12"	\$305.00
			Shipping Charge	\$40.00
	3/91	Inter. Fruit World, Agropress Ltd.	2 ea. Fruit World Maps	\$100.00

		1 ea. Hanna Digital Therm.#EITH	\$30.00
		1 ea. Hanna Digital Therm.#ERCOLE	\$34.00
		Shipping Charge	\$4.00
136729	2/91	Linde Gases of Southern Calif.	
		1-Gas Detector	\$340.00
		1-Spare Parts Kit	\$25.00
		1-Ozone .025-3 tube	\$49.00
		1-Ammonia low range tube	\$40.00
		1-Carbon Monox Low Range tube	\$40.00
		1-Ethylene tube (50-800 ppm)	\$46.00
		1-Sulfur Dioxide High Range tube	\$46.00
		1-Sulfur Dioxide Med. Range tube	\$46.00
		1-Sulfur Dioxide Low Range tube	\$43.00
		1-Sulfur Dioxide SG4 5La	\$40.00
		1-Ethylene Low Range tube	\$46.00
		Shipping Charge	\$7.00
136730	2/91	Cole-Parmer Instrument Company	
		1 ea. LCD Hygrometer	\$290.00
		1 ea. 9V Battery 4/pack	\$9.00
		2 ea. Thermohygrographs	\$1,060.00
		5 ea. Chart Paper #CN-8368-10	\$62.00
		5 ea. Chart Paper #CN-8368-20	\$62.00
		5 ea. Blue Pens #CN-8368-75	\$70.00
		5 ea. Red Pens #CN-8368-80	\$70.00
		Shipping Cost	\$21.00
136737	2/91	Wescor Scientific Products	
		1-Th-65 Thermocouple Thermometer	\$695.00
		Shipping Charge	\$3.00
136742	2/91	Superior Controls Co., Inc.	
		2 ea. Sterling 18/Stat Controiler	\$734.00
		2 ea. Sterling Pedestal	\$204.00
		Shipping Charge	\$14.00
136768	2/91	Hydro Scape Products	
		2 ea. Nelson 8425 Controllers	\$130.00
		50 ea. 1" Globe Valve #7911	\$988.00
		18 ea. 1 1/2" Globe Valve #7937	\$693.00
		18 ea. 1 1/2" Globe Valve #7938	\$941.00
136825	2/91	Soil Measurement Systems	
		1 ea. Tensicorder	\$3,725.00
		Shipping Charge	\$22.00
136902	1/91	Tew Manufacturing Corp.	
		Tomato Packing Line	\$13,255.00
		2 ea. Pails of wax	\$140.00
		Boxing & Crate Charge	\$510.00
		Shipping Charge	\$2,040.00
136903	1/91	Irrrometer Company Inc.	
		10 ea. RA Irrrometer 12"	\$550.00
		10 ea. RA Irrrometer 18"	\$563.00
		5 ea. RA Irrrometer 36"	\$300.00
		10 ea. Watermark Sensor 10'	\$140.00

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EQUIPMENT	1/91	ECHO (Video series)	1-Intro. to Tropical Fruit	\$50.00
136671			1-1-Mangos/ II-Papaya, Coconut	\$50.00
			1-1-Banana,Jackfruit/II-C.Campbell	\$50.00
			Shipping Charge	\$2.00
136672	1/91	United Fresh Fruit/Veg. Assoc.	1-A Fresh Look at Fruits	\$40.00
			1-A Fresh Look at Vegetables	\$40.00
			Shipping Charge	\$8.00
136673	1/91	Visual Media	1-Postharvest Cooling of Hort Crops	\$52.00
			1-Posthar Care & Handling-Flowers	\$51.00
			1-Main Trans Temp. in Trucks/perish	\$45.00
			1-Packaging Horticultural Crops	\$52.00
			State Tax	\$14.00
136727	2/91	McCormick's Fruit Tech. Co.	1-ATC1 Refractor	\$210.00
			1-FT-0-500 Tester	\$155.00
			1-FT-0211 Fruit Tester	\$135.00
			1-FT-3-27 Fruit Tester	\$135.00
132638	11/90	Aztec Book Store	1-Crop Loss Assessment & Pest Mgmt.	\$28.00
135613			1-Apple and Pear Diseases	\$20.00
			1-Citrus Diseases, 1988 Edit.	\$20.00
			1-Grape Diseases, 1988 Edit.	\$20.00
			1-Rose Diseases, 1983 Edit.	\$20.00
			1-Genetic Basis/Bio.Mech./Plant Dis	\$24.00
			State Tax	\$9.00
01-177287	11/90	Dr. Awad Hussein	Reference P.O.# 127280	
			Reimb for purchase of seedlings	\$972.00
136126	12/90	AGRI SUN NURSERY	1,000 Red Globe Grapes	\$1,446.00
			Inc.Export Doc, Air freight	