

USAID - TUNISIA  
COMPLETED PROJECTS  
1957 - 1970

The attached (revised) compilation represents an effort to provide a brief summary and evaluation of all projects initiated and completed by USAID (and its predecessor agencies) in Tunisia between 1957 and 1970. Every effort has been made to describe as accurately as possible the various projects undertaken during this period on the basis of the files currently available at USAID/Tunisia.

In most cases, the information provided under "Evaluation" is based on reports prepared at the time of the projects' completion or in 1966, when the initial effort was undertaken to prepare a comprehensive listing of all completed projects. Comments under the "Review" section are based on actual site visits or meetings with appropriate GOT officials during the latter part of CY 1968.

MEO/GSchwab  
October 1970

## Completed Projects - USAID/Tunisia

1957 - 1970

664-11-180-001	Aid to Commercial Fisheries
664-11-260-003	Marketing Survey
664-11-420-004	Workers Training for Key Skills
664-11-790-005	Training in Public and Business Administration
664-15-230-006	Ceramic Development & Demonstration
664-11-990-007	Audio-Visual Equipment
664-11-110-008 A-C	Agricultural Extension (Strengthening Agricultural Services)
664-11-330-009	Training in Railroad Repair Shops
664-11-710-010	Public Safety Program
664-11-620-011	Rural Teacher Training
664-11-920-013	Industrial Loan Fund Advisor - STB
664-11-130-015	Banana Demonstration
664-11-330-017	Advisor to Tunisian National Railroad
664-51-120-018	Watershed Planning and Management
664-11-120-019	Assistance to Irrigation Crops
664-11-130-020	Crop Production Improvement
664-11-660-021	Tunisian University Study Team
664-11-770-022	Government Manpower Survey
664-11-410-023	Trade Union Leadership Training
664-11-110-024	Agricultural Leader Team
664-11-960-025	Audio-Visual MEDIA Center
664-11-130-026 A&B	Strengthening of Animal Production
664-11-130-027	Poultry Improvement
664-11-260-028	Fresh Fruit & Vegetable Marketing
664-11-420-030	Key Skills Training
664-11-720-031	Training in National Planning
664-11-290-032	Industrial Development Service
664-11-450-033	Training of Social Security Specialists
664-15-690-034	English Language Training (Bourguiba School of Languages)
664-11-260-035	Industrial Crafts Center
664-12-120-036	Water Resources for Drilling 50 Wells
664-11-130-037 A-C	Fruit & Vegetable Production
664-11-130-038	Insect Control
664-11-110-039	Agricultural Survey Team
664-11-130-040	Grassland Improvement
664-11-110-041	Support for the Superior School of Agriculture
664-11-460-045	Manpower Information & Employment Services
664-11-730-046	Improvement of Government Budgeting & Accounting
664-11-730-047	Assistance to the Fonction Publique
664-11-960-048	Technical Film Library

664-11-270-050	Management Services Center
664-15-270-051	Industrial Management Training
664-15-280-052	Participant Training for Industry
664-11-250-054	Desalination of Brackish Water
664-11-370-057	Civil Aviation Improvement
664-11-120-059	Improvement of Oued Elili Dam
664-12-120-060	Nefzaous Irrigation
664-12-120-062	Irrigation of the Kairouan Plain
664-12-120-063	Drainage of El Azid Plain
664-51-610-064	Ariana Occupational Training Center
664-11-420-065	Establishing Workers' Education Center
664-12-830-067 A&B	Rural and Urban Housing
664-12-690-069	Construction of Scientific, Tech. & Vocational Trg. Bldgs.
664-11-640-070	Assisting Tunisian Textbook Preparation
664-11-640-072	Elementary School Assistance
664-51-660-073	University of Tunis
664-11-650-075	Strengthening Secondary Technical Education
664-12-310-078 A-H	Road Improvement Project
664-12-120-079	Drainage and Improvement of the Plain of Selmini - La Merdja
664-11-280-080	Specialized Training of Electrical Engineers
664-12-120-081	Drainage of the Sidi Magdour Region
664-12-120-082	Drainage of Bou Arada Plain
664-12-120-083	Drainage of Souk Es Sebt Plain
664-12-120-084	Drainage of Bled El Ghorfa
664-11-120-085	Provision of Equipment for Maintenance of Primary Drainage Canals
664-12-120-986	Irrigation of Oued Boul Perimeter
664-12-120-087	Irrigation of Sidi Bou Zid Plain
664-12-690-088	Equipment for Scientific, Technical & Vocational Training Institutions
664-12-120-089 A-E	Exploration & Proving of Underground Water Resources
664-12-170-090	Supplying Tree Watering Equipment
664-11-120-092	Drainage of Sebkhah Farjouna Plain
664-12-520-093	Improving Water Supply for Domestic & Animal Use
664-11-120-094	Equipment of Small Water Wells in Central & Southern Tunisia
664-11-120-095	Flood Control of the Bayach River
664-11-520-096	Improving Djedaida Water Supply
664-12-120-097	Exploration of Underground Water Resources of the Gabes Area
664-12-120-098	Irrigation of the Sbiba Region
664-12-120-099	Manzel Bou Zelta Irrigation Project
664-12-120-101	Drainage of the Soliman Plain
664-11-120-102	Improvement of Irrigation Facilities of Presqu'île of Kebili
664-12-120-103	Development of Small Water Sources

664-12-490-104	A&B	Economic Development Through Work Relief
664-12-120-105		La Soukra Irrigation
664-11-225-106		Extension of Tunis-La Marsa Telephone Lines
664-11-220-107		Three Hydro-Electric Surveys
664-12-120-108		Bardo Flood Control
664-11-690-109		Montfleury School Dormitory Project
664-11-120-110		Acquisition of Hydraulic Equipment
664-11-520-111		Improvement of Monastir Water Supply
664-15-280-112		Practical Experience for Engineering Graduates
664-12-220-113		Electrification Program for Six Areas in Tunisia
664-11-120-114		Flood Control for the Village of El Djem
664-12-170-115	A-G	Reforestation of Selected Areas
664-11-120-116		Soil Surveys of Selected Areas
664-12-590-117		National Blood Bank
664-12-120-118		Development of Enfidaville Domain
664-12-120-119		Development of Private Wells and Cisterns
664-11-170-120		Expansion of Forest Nurseries
664-11-120-121		Medjerda Valley Development
664-11-225-122		Improvement of Regional Telephone Networks
664-11-660-123		Teacher Training
664-11-990-124		Hotel Training/Tourism Development
664-12-120-125		Development of Oued Melah Basin
664-11-170-126		Reforestation of the Mogods
664-12-120-127		Sfax-Water Supply
664-12-520-128	A-E	Urban Water & Sewage System
664-12-690-129	A-H	Tech. & Professional School Construction & Equipment
664-11-290-130		Modernization of Topographic Services
664-11-790-131		Assistance to Tunisian Government in Recruitment of Technical Personnel (Ladgham Plan)
664-12-220-132	A-E	Electrification Program
664-12-250-133		Flood Protection of Moknine
664-12-520-134		Improving Water Supply of the Central Sahel
664-11-390-135		Engineering Studies - Public Works
664-11-120-136		Land Boundary Studies
664-11-660-137		Training for Business Careers
664-12-340-138		Port Improvement - Mahdia
664-11-225-139		Communications Improvement - P.T.T.
664-12-840-141		Housing Loan Program
664-11-120-142		Agricultural Studies & Engineering Plans
664-12-120-144	A-H	Combined Small Irrigation & Land Development
664-12-110-145	A&B	Agricultural School Development
664-11-310-146		Transportation (Road Construction Equipment)
664-11-190-147		Agricultural Support Equipment
664-12-130-148		Crop Development Assistance
664-12-120-149		Diversion Dam for Water Spreading - La Matbasta

664-12-120-150	Supplemental Water Supply (Kasserine)
664-11-660-153	U.S. University Education
664-12-170-157	Fixation of Sand Dunes
664-12-520-159 A-C	Improvement of Domestic & Rural Water Supply
664-12-120-160 A,B,C&E	Combined Flood Control & Drainage
664-11-830-161	Stabilized Soil Demonstration
664-11-750-166	Improvement of Accounting Procedures (UTIC Business Center)
664-51-620-169	Chott Maria Agricultural College
664-11-140-170	Assistance to Cooperatives
664-52-330-171	Societe de Fonderie et de Mecanique (SOFOMECA)
664-11-260-172	Increased Agricultural Utilization of Phosphate Fertilizers
664-11-720-173	Economic Development Planning Assistance
664-56-230-174	Sfax Gafsa Company
664-11-710-175	Public Safety/Police Training
664-12-995-176	Emergency Relief <sup>2</sup>
664-11-990-177	Disaster Relief
664-22-120-179	Oued Nebaana Dam and Irrigation
664-12-420-180	Occupational Training Centers
664-12-110-182	Agricultural School Construction
664-52-230-184	Societe Nationale Tunisienne de Cellulose (SNTC)
664-11-690-185	Primary and Secondary School Construction
664-52-230-186	El Aouina International Airport (Loan A-006)
664-12-820-187	Algerian Refugee Relief (Title II)
664-22-120-193	Deviation of Oued Gabes
664-22-120-194	Soil and Water Conservation
664-26-220-200	STEG I (Loan H-021)
664-12-170-201	Reforestation Program
664-22-830-203	Rural Cooperative Housing
664-22-190-204	Agricultural Equipment
664-12-330-214	Tunisian Disaster Relief
664-23-950-216	Societe Tunisio-Americaine de Developpement - Cooley Loan
664-11-460-225	Manpower Supply and Demand Analysis
664-22-620-226	Agricultural Vocational Training Institutions
664-22-310-227	Road Construction and Improvement
664-22-370-235	Tunis/Carthage Airport - Fire/Crash, Rescue & Service Equipment (Loan H-028)
664-22-370-236	Tunis Carthage Terminal Building (Loan H-027)
664-21-120-238	Groundwater Development Drilling Training Program
664-26-995-240	Non Project Loan (H-026)
664-22-660-243	Teacher Training Schools
664-22-290-244	School Construction and Equipment
664-42-120-245	El Mahrine Perimeter - Medjerdah Valley
664-21-290-248	Harvard Research Project
664-26-230-250	Mendustrie Millwork Plan - Cooley Loan
664-26-830-251	Maisons Tunisiennes Carnoy - Cooley Loan
664-22-120-252	Reforestation Program

\* The Mission's files no longer contain any materials on this project; as a consequence, no report could be prepared.

664-22-120-253  
664-21-120-254

664-24-950-259  
664-22-660-262  
664-22-820-265  
664-21-995-269

Soil Conservation Program  
Trg. of Well Drillers & Impr. of Well Drilling  
Techniques  
Watkins Salt. Co. - Cooley Loan  
Faculty of Medicine  
National Committee  
DDT for Flood Disaster

Project No.: 664-11-180-001

Project Title: Aid to Commercial Fisheries

Project Dates: 6/29/57 - 8/23/63

<u>Contribution:</u>	U.S. (TC/DG)	\$126,000
	(Counterpart/Grant)	370,000
	GOT (Dollar equiv.)	\$171,000

### Objective

The target of this activity was to improve fishing methods, expand existing fisheries to include new areas and/or species, and improve the processing and distribution methods as a means of improving the Tunisian diet, providing increased seasonal employment for a large number of workers, and contribute to the generation of foreign exchange.

### Results

Under the project, a U.S. Fisheries Advisor and a third-country fishing expert were provided, assistance was given in the design and installation of a fishmeal plant in Mahdia to utilize fisheries industry waste materials, and the use of new equipment such as mechanical net haulers, echo sounders, etc. was introduced. In addition, U.S. and GOT funds were utilized for the procurement of a dredge to maintain adequate depths in the lagoons, a sardine vessel and four trawlers.

### Evaluation

The project was successful in demonstrating that offshore trawl fishing was more productive than in-shore fishing, new types of underwater lights were superior to the old types, the introduction of mechanical net haulers improved operations, and increased catches of sardines became possible through the introduction of the echo sounder.

### Review (October 1968)

The four trawlers, sardine vessel and dredge are operating well and serve the purposes for which they are intended. The trawlers Hached and Tahrir are stationed in Bizerte, the Jalla is in Tunis and the Thameur is being used at Salambo as a fishing research vessel. The sardine vessel Karim operates out of Bizerte, while the dredge is working at Porto Farina.

The fishmeal plant processes offal from tuna canning operations. However, due to the construction of a fishmeal plant at Monastir by the "Office National de Pêche", the supply of fish available for processing at Mahdia has been curtailed substantially and the plant's production is considerably below its capacity.

Project No.: 654-11-200-003  
Project Title: Marketing Surveys.  
Project Dates: 1/23/58 - 2/1/59  
Contribution: U.S. (TC/DG) \$22,000  
GOT (Dollar equiv.) \$11,000

### Objective

As a newly independent nation, Tunisia faced the problem of developing its commercial and industrial economic base. The purpose of this project was to provide the Tunisian Government with the services of a U.S. specialist to make a survey of the Tunisian marketing and distribution system, including agricultural and industrial products.

### Results

This project was executed in 1958 and 1959.

The specialist conducted a study, including a comprehensive survey of Tunisian products and of foreign and domestic markets for these products, to ascertain current and potential requirements. Procedures were recommended for establishing marketing centers through which products could be channelled from producer to purchaser. A Tunisian counterpart was trained to continue the work.

### Evaluation

This survey was one of the first undertaken by the Ministry of National Economy. It was extremely helpful in guiding the Ministry in establishing programs for developing the commercial sector of the economy. Also, the increased knowledge of the country's marketing and distribution system that resulted has been valuable in the development of both the public and private sectors of the economy.

Project No.: 664-11-420-004  
Project Title: Workers Training for Key Skills.  
Project Dates: 10/1/57 - 8/1/58  
Contribution: U.S. (TC/DG) \$24,000

Objective

The objective of this project was to provide specialized training to two groups of key skills, vital to the functioning of Tunisian economy.

Results and Evaluation

Third country training was provided for 10 specialists for a 10-month duration: 6 participants in diesel maintenance and repair and 4 participants in electric motor, alternator and transformer maintenance. One participant is now director of a private company, another is working as an industrial designer. The objectives were met and the project satisfactorily completed.

Project No.: 664-11-790-005

Project Title: Training in Public and Business Administration

Project Dates: 6/28/57 - 6/9/65

Contribution: U.S. (TC/DG) \$360,000  
(Counterpart/Grant) 86,000

### Objective

The primary objective of this project was to provide interim specialized training for Tunisians in finance, commerce, insurance, statistics, municipal management and other administrative disciplines pending the establishment of local training institutions. Subsequently, objectives of the project were limited to training in public administration, with business administration training shifted to separate projects for this purpose, such as Training for Business Careers (Project 664-11-660-137) and Participant Training in Industry (Project 664-15-280-052).

### Results

A total of 124 participants completed training under the project; 57 studied in the United States, 56 in Europe and 11 in Lebanon. A total of 939 man-months of training was completed.

### Evaluation

Judging from the list of participants who now occupy positions of considerable responsibility, it can be said that the project succeeded in its objective of helping to train urgently required manpower for governmental and banking institutions responsible for financial management. The project was also successful in materially strengthening the executive cadre to Tunisia's major insurance company (S.T.A.R.) and in providing a nucleus of trained statisticians in the Ministry of Plan. As of May 1967, 42 of the 124 participants were working in government positions, 48 worked for public enterprises and 24 were working in government positions.

While there is some question how much genuine professional improvement can be achieved through short-term training (the average length per program was 7.5 months), the results appear to have been good for those who went to Europe, where they received intensive on-the-job training. Due to the language barrier, genuine on-the-job experience was not planned for the short-term participants who went to the United States and, while useful impressions and insights were presumably gained, there is little evidence that this type of training improved development and professional status. On the other hand, several of the participants studied for longer periods at American institutions of higher education with considerable success.

Project No.: 664-15-230-006

Project Title: Ceramic Development and Demonstration

Project Dates: 6/27/57 - 12/31/61

Contribution: U.S. (TC/DC) \$186,000  
(Counterpart/Grant) 1,000  
GOI (Dollar equiv.) \$ 26,000

### Objective

The intent of this project was to provide, for purposes of demonstration, a modern ceramics plant at Nabeul and the services of a U.S. ceramics technician in order to assist the economic development of the area.

### Location

Nabeul.

### Results

A complete pilot plant (including shuttle and tunnel kilns, jiggering and jettling machines, a tile press and a de-airing extruder), designed to meet the demonstration objectives of the project, was erected at Nabeul. Equipment was installed under the technical guidance and supervision of a U.S. ceramics expert. In addition, this expert trained workers, developed better clay mixes, and performed research in ceramic aggregates. Six Tunisian ceramic craftsmen were sent to Europe for three months training during 1969.

### Evaluation

The ceramics plant at Nabeul employed over 100 workers in 1966. It was producing and supplying to local artisans from two to twelve tons of prepared clay per month. The plant was also producing a very high grade of ceramic tableware which was being sold throughout Tunisia. All the purposes for which the project was established appear to have been fulfilled.

### Review (November 1968)

The ceramic plant appears to be well organized and operated. The shuttle and tunnel kilns were operating well and in good condition. All other equipment was also being utilized for the purposes intended.

Project No.: 664-11-990-007  
Project Title: Audio Visual Equipment  
Project Dates: 11/31/56 - 1/1/60  
Contribution: U.S. (TC/DG) \$58,000

### Objective

To provide a limited amount of audiovisual equipment and supplies to strengthen programs in such fields as agriculture, health, education and natural resources development, and, by initially placing this equipment and supplies in the Ministry of Education, to foster the establishment of an audiovisual center.

### Results

Supplies and equipment were provided as planned.

### Evaluation

Availability of audiovisual equipment and supplies made possible through this project facilitated subsequent projects in communications media, and contributed to the use of audiovisual techniques by GOV agencies.

An audiovisual unit was developed later at the Ministry of Education with assistance from UNESCO. The project, therefore, met its objectives.

Project No.: 664-11-110-008 A-C

Project Title: Agricultural Extension  
(Strengthening Agricultural Services)

Project Dates: 7/31/58 - 12/31/64

Contribution: U.S. (Counterpart/Grant) \$1,173,585  
(TC/DG) 430,000  
GOT (Dollar equiv.) \$ 503,505

### Objective

The objective of this activity was to assist the GOT in the establishment and effective implementation of its rural development program, directed mainly at the agricultural production cooperatives, through the establishment and development of an agricultural extension system.

### Results

Among the accomplishments of the project were the following:

1. Assistance, through the assignment of USAID technicians, participant training, and the provision of equipment, toward the development of a modern agricultural extension service.
2. Support to three "Animateur" training centers (located at Sidi El Hani, Ebba Ksour and Fl Bathan) through participant training, provision of equipment and the services of USAID technicians.
3. Providing equipment for the laboratories and experimental farms of the GOT Service Botanique.
4. Assistance in enlarging and improving the training facilities at the Sidi Thabet Agricultural School, the Secondary School for Agriculture at Moghrane and the Horticultural Extension Training Center at La Soukra. (Additional assistance in this connection was provided under Project 664-12-110-182, Agricultural School Construction.)

### Evaluation

Considerable progress was made during the life of the project in connection with support to training centers, laboratories and agricultural schools (items 2-4 above). However, primarily due to fragmentation of responsibilities and serious rivalries within the Ministry of Agriculture of the EVCA

(Education, Vulgarization, Cooperation Agricole), the PAVA (Production Animale & Vegetale Agricole) and the Division Economique for control of the agricultural extension work, relatively little progress was made toward the achievement of the primary objective of creating a viable and unified National Extension Service. Upon the closing out of the project, parts of the objective were combined under Project 664-11-110-205, Agricultural Production Research and Marketing.

Project No.: 604-11-350-00y  
Project Title: Training in Railroad Repair Shops  
Project Dates: 5/58 - 12/61  
Contribution: U.S. (TC/DG) \$32,000  
(Counterpart/Grant) 3,000  
GOT (Dollar equiv.) \$30,000

Objective

After Tunisia's independence, the railroad repair center was faced with two difficult and related problems: a) increased maintenance and repair requirements for a not-too-modern railroad network, and b) the training of more than 200 Tunisians, skilled and semi-skilled workers, to fill the gap left by the departure from Tunisia of French technicians. This project provided the services of an American technician to assist the Tunisian National Railroad in developing and carrying out shop training programs involving several hundred young Tunisians, and in properly organizing the repair center.

Results

The technician assisted in the organization of a training program for the shops which included instructor training for repair skills and apprenticeship training for mechanics. In addition, a participant team of shop supervisors was sent to the U.S.

Evaluation

The implementation of this project permitted a more efficient and effective operation of the Tunisian National Railroad.

Project No.: 664-11-710-010  
Project Title: Public Safety Program  
Project Dates: 9/12/58 - 6/30/65  
Contribution: U.S. (IC/DC) \$1,453,000  
GOT (Dollar equiv.) \$ 19,000

### Objective

To assist the Sureté Nationale and the Garde Nationale to improve their capability in the maintenance of the internal security of Tunisia; to provide technical assistance, training, and equipment for these internal security forces.

### Results

A total of \$1,261,000 in police equipment consisting of vehicles and spare parts, photographic equipment, arms and ammunition, airplanes and spare parts was supplied to the Sureté and the Garde.

Seventy-six (76) participants were given training, 72 in the U.S. and 4 in Europe. A complete radio communications and teletype system was procured and installed, thus providing a police communications system linking all 13 Gouvernorats of Tunisia with the city of Tunis. Equipment and training aids were supplied and technical assistance was given in the establishment of a radio training center in Tunis.

Two U.S. Police advisors were supplied to the GOT for 2 years; they provided technical assistance and training in police work and use of equipment. One U.S. communications advisor was provided for 4 years and designed the police communication system, gave technical assistance in its installation and trained operator and maintenance personnel.

### Evaluation

In 1966, a representative of OPS reviewed the accomplishments and determined that the objectives of the project had been met and that it could be considered as having been satisfactorily completed. The one major problem encountered to this date had been the fact that the airplanes were being utilized by other GON activities; in response to Mission representations, Letter #1630 reimbursement in the amount of \$76,335 was issued by the GOT in 1964.

Review (Fall 1968)

The recent review of the project has revealed some problems in connection with the AID-provided communications equipment, some of which can be attributed to the age of the equipment, problems of local maintenance and spare parts procurement.

Arrangements have been made for an OFS telecommunications advisor to visit Tunis on TDY to determine the extent of the radio communication problem and attempt to rectify it.

Project No.: 664-13-620-011  
Project Title: Rural Teacher Training  
Project Dates: 1/58 - 6/59  
Contribution: U.S. (Counterpart/Grant) \$17,000

Objective

To strengthen rural schools by providing participant training for three Tunisian teachers in methods and techniques for rural areas.

Results

Three participants received training, first at Kansas State Teachers College, and subsequently at Ohio State University.

Evaluation

Participants considered that some of the methods learned were too sophisticated for immediate application to Tunisia. They believed, however, that their experience would be beneficial in the long run. All participants returned to their previous teaching posts to apply, as far as possible, the methods they had learned. This project, therefore, met its limited objective.

Project No.: 064-11-920-013  
Project Title: Industrial Loan Fund Adviser "STB".  
Project Dates: 1/1/58 - 6/30/64  
Contribution: U.S. (TC/DG) \$144,000  
(Counterpart/Grant) 1,000  
GOT (Dollar equiv.) \$ 12,000

### Objective

The purpose of this project was to provide for two investment advisers, one in industrial finance and the other in industrial engineering, to advise the Société Tunisienne de Banque on industrial development loans to smaller and medium sized enterprises. The project was an integral part of the Special Revolving Loan Fund (SRLF) which provided 1,248,000 dinars to the Société Tunisienne de Banque for sub-loans to industry.

The lack of Tunisians trained and experienced in industry and banking was a barrier to the successful use of this fund. The furnishing of the two experts under this project was intended to help the STB begin immediately using the SRLF to assist private industrial projects, and to provide training for Tunisians who would ultimately be able to perform the function of the experts.

### Results

The two experts set up procedures for the examination of loan applications, assisted in the processing and administration of loans, and trained Tunisians to take over these functions. They also assisted loan recipients in improving the financial and technical operations of their businesses. In summary, these experts helped the SRLF get off to a good start, and through their training of Tunisian counterparts assured the continuity of the Fund's operation after their departure.

### Evaluation

This project, together with the Special Revolving Loan Fund, was designed to help revive private investment which was at the time at a very low level. The basic premise was that a relatively small amount of counterpart, if used properly, could generate additional new investment by mobilizing private capital. The work of the two experts under the project is considered to have made a significant contribution to the successful operation of the SRLF and to the achieving of the above purpose.

Project No.: 664-11-130-015  
Project Title: Banana Demonstration  
Project Dates: 4/4/58 - 12/31/58  
Contribution: U.S. (TC/DC) \$1,000  
(Counterpart/Grant) 3,000  
GOT (Dollar equiv.) \$5,000

Objective

The purpose of this project was to demonstrate the feasibility of producing new and better grade bananas in Tunisia, to increase the quantity of disease-free bananas, to increase local food-stuffs for domestic consumption and to provide a demonstration in certain governorates of improved agricultural education using experimental banana plots.

Results and Evaluation

This project provided \$1,000 worth of banana shoots which were planted in sixteen demonstration sites located in the more promising areas of Tunisia.

The objectives of this project were not met at the time because of limited available supplies of water for banana production in Tunisia and consequent lack of GOT interest in the distribution of banana plants on a nationwide basis.

Project No.: 604-11-350-017

Project Title: Advisor to the Tunisian Railroad

Project Dates: 6/58 - 5/31/60

Contribution: U.S. (TC/DG) \$0,000

GOT (Dollar equiv.) \$3,000

### Objective

A more efficient operation of the national railroad (SNCFT) was of vital importance to the Tunisian economy. With this objective in view, the SNCFT management and the GOT requested AID to supply a top flight railroad engineer to act as personal advisor to the Director of the SNCFT on problems of organization, management and administration, and to advise on programs to improve efficiency and safety.

### Results

The project as originally conceived was never implemented. The \$6,000 that were spent were used to procure equipment for the SNCFT shop repair school which trains personnel for the company's needs for mechanics, welders, etc..

### Evaluation

With the successful implementation of the project called "Training in Railroad Repair Shops" (Project 604-11-350-009) and with the equipment provided under this project, the SNCFT authorities are now able to operate the railroad without further technical assistance. Today, the SNCFT handles the major portion of freight and traveller transport in Tunisia.

Project No.: 664-51-120-018  
Project Title: Watershed Planning and Management  
Project Dates: Funding: 5/15/58 - 12/31/69  
Physical Work: 5/15/58 - 6/30/70  
Contribution: U.S. (TC/DG) \$2,039,000  
(104 (f) Loan) \$1,043,000

### Location

The Oued Marguelli watershed area of central Tunisia.

### Objective

In its early phases (late 1950's and early 1960's) the GOT looked at the activities under this project as being primarily concerned with flood prevention. As the flood prevention studies progressed, it was shown that flood control dams would fill rapidly with sediment. Technicians on the 1962 TDY team proposed that a general conservation plan for the watershed be prepared and implemented before any dams are constructed.

Physical activities under the project were initiated in FY 1962; its stated objectives were to (1) demonstrate through actual planning and implementation of sound soil and water conservation practices, as well as flood retardation structures, on 388,000 ha of the semi-arid Oued Marguelli watershed of central Tunisia, that good management of soil and water resources will enhance the economy of the watershed area, and (2) assist in developing a stable agricultural economy in the watershed area. The project was designed to serve as a demonstration and training ground for Tunisian technicians, with the practices employed in the project to be adapted to other parts of the country.

### Project History

#### Study Phase

In March 1962, a Soil Conservation Service (SCS) technician under a PASA agreement was assigned to the Mission to give direction and assistance to a Watershed Management Project. The watershed selected for study was the Oued Marguelli which lay between Kairouan and Maklar and consisted of 157,000 hectares, being over a hundred kilometers in length. It was determined that a study of the flooding hazards and the conservation needs of the watershed would be prepared.

During the fall of 1962 and the first five months of 1963, eight SCS technicians on TDY assignments (1.7 man years) assisted the PASA member in preparing a Oued Margue!!! Watershed Plan. They were also supported by GOT technicians and Mission direct-hire personnel.

The conservation needs of the watershed as shown in the plan were based on intensive studies of 28 areas one kilometer square and 74 areas one-half kilometer square scattered at random throughout the watershed. The pilot sub-watershed (M'Silah 4,276 acres) was also studied intensively. The findings in these areas were projected to all the land in the watershed.

The team also examined potential sites for storing water and determined the feasibility of a flood control project. Several sites were studied in detail and a detail plan was prepared for the M'Silah Dam.

The findings and recommendations of the study team were documented (in both English and French) and were the basis for the decision to proceed with detailed studies by sub-watersheds and to perform field operations based on the sub-watershed plans. This decision was reached in June 1963 at a meeting held in the SCS office of the U.S. Department of Agriculture, Washington, D.C., with both Mission and GOT representatives present; it was at the time agreed not to initiate a flood control program until after much of the conservation work had been established on the watershed.

#### Post-study Phase

Because of the November, 1964 flood in the Oued Margue!!! watershed, the GOT asked that the SCS study team return to Tunisia to evaluate the damage and to consider other alternatives for flood control in the valley. For three weeks in December, 1964, an SCS hydrologist and two engineers studied the flood and its damages. The following April through July, other SCS technicians assisted the GOT in studying in detail the Shrira Dam site, a site which had the potential for replacing nine smaller dams and of storing 70 Mm<sup>3</sup> of water. By the end of 1965, a 200-page document in French and English had been prepared. It contained findings regarding the flood damages, intensive studies of the Shrira site, general plans for four alternative structures for the Shrira site and the benefit-cost studies for each.

In August, 1966, USAID asked SCS to prepare detail plans, specifications and bid documents for the Shrira site using the Alternate IV Phase I structure as shown in their report. The plans, specifications and bid documents were presented to the GOT in January, 1968.

### Demonstration Phase

After the decision in June 1963 to proceed with sub-watershed planning, followed by field operations, USAID, working with SCS, proceeded to staff the PASA field operation with technicians. In the summer of 1964, three new positions were added to the PASA. Immediately following, soil surveying and sub-watershed planning were started. Several miles of terraces and waterways were staked. However, since the GOT failed to provide any funds, CY 1964 passed without the installation of any conservation practices.

Funds were made available by the GOT for CY 1965 and some heavy equipment was assigned to the Project. Basic training of operators and "adjoint techniques" was accomplished through the construction of a limited number of terraces and waterways. Approximately 20,000 hectares of tabias were repaired with hand labor. As many as 1,600 laborers worked at tabia repair. Soil surveys continued at a rapid pace and counterparts were trained to assist in land planning. The training received by counterparts (3 professional and 5 sub-professional), equipment operators and crew foremen during 1965 was an important factor in the production of CY 1966 and thereafter.

During late 1965 and early 1966, four new positions were added to the PASA Team - an engineer, a soil scientist, a range conservationist and a soil conservationist.

By May 1966, Project inputs such as funds, equipment, counterparts, PASA technicians, and other elements of field operations seemed to "take shape". Field operations started moving on all fronts and in general continued to do so at an accelerated pace.

### Results

By the end of the project, accomplishments included the establishment of a Seed Production Center at El Grino, soil surveys covering approximately 70,000 ha., the establishment of over 5,000 ha. of terraces, and the completion of almost all the conservation practices on the cropland area (3,000 ha.). As a result of having been planted to forest, approximately 3,000 ha. were protected, and 5,000 ha. of range and watershed protection land were deferred from grazing. Fifteen participants departed for the United States for training between March 1967 and January 1968; they are due to return to Tunisia between July 1970 and December 1971.

### Evaluation

The extent to which the project has accomplished its goals remains to be seen, although present indications are not too hopeful. If the Shira Dam is built and the plans prepared by SCS are utilized, this phase of the project will have been worthwhile. The major weakness of the project have been in its training and

demonstration phases, due presumably in large part to the fact that the GOT continued to look upon the project as part of the original flood control activity while in USAID (and SCS) eyes it became a soil conservation activity. Over the life of the project, a total of three "ingenieur agronomes", one "ingenieur hydraulique" and 15 "agents techniques" have received on-the-job training in carrying on the planning and field operations of the project, a totally inadequate number in the light of the number of U.S. technicians involved. There have not been any counterparts assigned to the project with sufficient experience or training to learn the civil engineering aspects of the operation. Under the circumstances, any long-range effect of the project must of necessity depend on the future use made of the participants returning from training in the United States. In retrospect it would appear that the demonstration and training aspect could have been carried out far more effectively and at a considerably lower cost if a smaller watershed and one containing greater agricultural resources had been utilized.

Note: For further details on the project, see USAID/T Evaluation Report 69/1 (July 1968) and PARs prepared as of 1/1/69 and 12/31/69.

Project No.: 664-11-120-019

Project Title: Assistance to Irrigated Crops

Project Dates: 5/58 - 6/30/60

Contributions: U.S. (TC/DG) \$75,000

GCF (Dollar equiv.) \$28,000

Objective

1. To test and demonstrate the yield of certain intensive crops;
2. to train participants in irrigation practices and technique;
3. to establish small pilot farms to demonstrate tillage, quick drainage and other practices, including low cost and efficient use of water, and
4. to assist the GCF in developing the proper administrative organization to carry out the above demonstration program.

Results and Evaluation

This project met its objectives and is considered satisfactorily completed.

1. A U.S. direct hire technician was assigned to study and demonstrate irrigation crops and production methods.
2. Nine participants were sent to the U.S. to study all phases of irrigation farming.
3. Commodities including seeds, seed germinator, grain thrasher, motor vehicles, engines and parts were purchased to assist the GCF in developing its demonstration program.

Project No.: 664-11-130-020

Project Title: Crop Production Improvement

Project Dates: 4/8/58 - 7/15/63

Contribution: U.S. (TC/DG) \$104,000  
(Counterpart/Grant) 213,000  
GOT (Dollar equiv.) \$425,000

### Objective

The objective of this project was to assist the GOT in increasing crop yields on the more productive lands, in order to permit the retirement of marginal lands to permanent range and other protective vegetation, through applied research, training of participants, and demonstration.

### Results

1. Four pilot farms located at Medjez El Bab, LaKef, Sbeitla, and Enfidaville, were selected to demonstrate stubble mulch tillage, use of fertilizer, crop rotation, testing of new varieties of cereals, forage crops, and sugar beets.
2. Two U.S. agronomy advisers were assigned to the project.
3. Four participants received training in the practical aspects of sugar beet culture, for a period of nine months in Italy.
4. The following equipment and supplies were provided: two tractors, two seed and fertilizer drills, one trailer, one sprayer, two vehicles, four mulch trowsers, twenty animal-drawn drills, plus selected barley, wheat and oat seeds.

### Evaluation

The project objective was met and the project is considered satisfactorily completed.

Project No.: 004-11-660-021

Project Title: Tunisian University Study Team

Project Dates: 0/58 - 12/31/58

Contribution: U.S. (TC, DG) \$9,000

GOT (Dollar equiv.) \$1,000

Objective

To help the GOT develop plans for the establishment of a national university by providing the services of a team of three consultants for a period of approximately thirty days.

Results

The three consultants envisioned - two recruited from Johns Hopkins University and one under contract from the European Productivity Agency - came to Tunis late in August 1958.

Evaluation

The findings of the above team of 3 consultants were, for the most part, included in a comprehensive plan for the University prepared by the Ministry of Education. This report, in turn, has been the basis for subsequent planning regarding the development of the University of Tunis. The project, therefore, fully met its objectives.

Project No.: 664-11-770-022  
Project Title: Government Manpower Survey  
Project Dates: 5/58 - 2/59  
Contribution: U.S. (TC/DG) \$12,000  
GOT (Dollar equiv.) \$ 2,000

Objective

Assist the GOT in conducting a survey to determine government manpower requirements, available manpower resources and recommend actions to meet short-term and long-range government manpower deficiencies.

Results

The services of a consultant from the National Science Foundation and three AID technicians were provided for a period of five months to conduct the study. The team's report contains recommendations for strengthening the GOT personnel system and for in-service training.

Evaluation

While recommendations, as stated, were not adopted by GOT, the team's report served as a basis for subsequent USAID projects in Public Administration, and was therefore instrumental in the development of the National School of Public Administration. The project, therefore, may be considered as partly successful.

Project No.: 664-11-410-023  
Project Title: Trade Union Leadership Training  
Project Dates: 2/59 - 5/64  
Contribution: U.S. (ED/DG) \$13,000  
GOT (Dollar equiv.) \$ 6,000

Objective

To establish friendly relations and exchange of ideas between the "Union Generale de Travailleurs Tunisiens", (UGTT) - the national Tunisian Labor Union - and the cooperative and trade union movements in the United States, as a possible basis for future assistance activities in the cooperative and labor fields.

Results

Two consultants came to Tunis for a short visit (4 weeks). As recommended, two groups of six participants each were sent to the United States for short observation tours (six and eight weeks respectively). One group consisted of young people occupying secondary positions, while the other was formed by UGTT leaders of long standing.

Evaluation

The second recommendation - that USOM/Tunis have on its staff a cooperatives adviser - was not adopted. While participants found it difficult to apply to Tunisia what they learned, due mainly to the wide differences in the economic situation of the two countries, they gained a better understanding of the American Trade Union movement. The project may be termed moderately successful.

Project No.: 004-11-110-024  
Project Title: Agriculture Leader Team  
Project Dates: 7/58 - 10/58  
Contribution: U.S. (TC/DG) \$7,000  
GOT (Dollar equiv.) \$6,000

Objective

To send 7 participants to the U.S. in 1959 for one month to study extension service, agriculture research, and agriculture production in dry farming, dairy, irrigated farming, soil and water conservation and relate their findings to Tunisian agriculture.

Results

These men are now (1966) leaders in the following fields:

1. Haouat, Mohamed - Chief of "Production Agricole" - Ministry of Agriculture
2. Ben Mahmoud, Moncef - Director College Moyen - Boucherie at Grombalia
3. Sebbach, Salaheddine - Director, SOCBLE (Wheat Cooperative)
4. Tarzi, Mahmoud - Administrator, Affairs Fonciers (land office)
5. Djellouli, Sadok, Div. Chief in Ministry of Agriculture.
6. Hamza, Mohamed El Hachemi - Principal Engineer Forestry Service
7. Gara, Abdelmajid, Director of Research and Education, Min. of Agric.

Evaluation

The men hold very responsible positions, are capable and cooperate closely with USAID in a number of important projects such as Oued Nebaana irrigation development, Chott Maria College, agricultural secondary schools, reforestation and soil and water conservation.

Project No.: 664-11-960-025

Project Title: Audio-Visual Media Center

Project Dates: 6/27/58 - 6/30/65

<u>Contribution:</u>	U.S. (EC/DG)	\$228,000
	(Counterpart/Grant)	30,000
	GOP (Dollar equiv.)	\$204,000

### Objective

The project objectives were to develop the facilities and personnel capable of providing audio-visual materials and services to all agencies of the GOI, to support USAID technical assistance operations, and to provide an audio-visual center with a substantial amount of equipment and printing materials as well as suitably trained personnel.

### Location

Ministry of Information, Tunis.

### Results

The project led to the establishment of an audio-visual center. Eight participants received training, one in the United States, five in third countries and two both in United States and third countries. A total of \$112,000 was utilized for the purchase of audio-visual equipment, materials and supplies, including a linotype machine, a roll-fed single color offset printing press, photo-engraving equipment, etching equipment, silk screen materials, projection equipment as well as related materials and supplies. By the end of the project, the Printing Section was able to make up to 1,700,000 impressions per month. It was doing good color printing and producing materials for several government agencies, including all printed materials for the literacy program and a substantial number of textbooks for the Ministry of Education. During FY 1965, it printed 450,000 textbooks and 250,000 publications for adult education.

### Evaluation

The intent of the project was to assist the Government of Tunisia in developing its communications materials production facilities. In this, the project was successful. On the other hand, the project did not develop fully, as anticipated, into a central production facility to meet the needs of various ministries due to a variety of reasons, such as the natural tendency of the agency housing the facility to assign higher priority to its own requests for services, the inability of the central facility - at least during the formative period - to meet all requests for services, and the desire of each agency to have its own facilities. On the other hand, the project was instrumental in creating several other similar institutions which can contribute materially to any public education activity that the GOI may wish to undertake.

Review (October 1968)

The Center now employs some 80 persons, including 15 technicians. The maintenance service is efficient and the finishing department, which according to Technical Assistance Project History and Analysis Report at the time of the closeout of the project was the weakest part of the organization, now is well equipped and operating satisfactorily.

Project No.: 664-11-130-026 A & B  
Project Title: Strengthening Animal Production  
Project Dates: 6/58 - 12/63  
Contribution: U.S. (TC/DG) \$ 82,000  
(Counterpart/Grant) 118,000  
GCE (Dollar equiv.) \$118,000

Objective

The purpose of this activity was to train Tunisian technicians and to develop a program that would increase livestock production through better feeding, better breeding, disease and parasite control.

Results and Evaluation

The USAID provided the services of one Livestock Adviser, participant training, and such commodities as artificial insemination supplies, one vehicle, dairy and silage preservation equipment, plastic hay and silage cover and miscellaneous livestock items.

The participant training element consisted of sending fifteen trainees to the U.S. for training in livestock management; one of these participants is now (1966) in charge of the Livestock Section of the PAVA Service.

Counterpart funding was used for disease and parasite control equipment, construction of livestock housing and an artificial insemination center.

This project met its objectives.

Project No.: 654-11-130-027  
Project Title: Poultry Improvement  
Project Dates: 3/25/58 - 9/30/65  
Contribution: U.S. (TC/DG) \$476,000  
(Counterpart/Grant) 122,000  
GOY (Dollar equiv.) \$445,000

### Objective

The target of this activity was to encourage the development of an enlarged and commercially viable poultry industry through the establishment of government demonstration, breeding and training centers.

### Location

Sidi Thabet, 15 miles n.w. of Tunis.

### Results

This activity has involved the establishment of a GOY demonstration, breeding and training center at Sidi Thabet and the creation of six substations in Bizerte, Le Kef, Beja, Kairouan, Sfax and Gafsa.

The Sidi Thabet station is probably the largest modern government poultry breeding station and training center in the Middle East and Africa. It consists of 14 buildings (more than 4,500 m<sup>2</sup>) and encompasses complete facilities for implementing the demonstration and training programs as originally planned at the beginning of the project in 1959.

The U.S. contribution to this activity, in addition to the poultry specialist assigned, consisted of financing participant training for 29 persons in the U.S. and third countries (France, Italy, Lebanon), purchasing breeding stock and various types of equipment and financing local costs for the construction of six substations.

### Evaluation

The implementation of the project has been successful. It is estimated that, through its demonstration and promotion activities, egg production had increased some 20% by the time the project had been completed; also as a direct result, commercial broiler

production had been initiated on two large farms.

Review (October 1968)

The Sidi Thabet Center is still the main breeding and training center for poultry. The Bizerte and Beja substations are now run by the Gouvernorats. The substations at Le Kef, Kairouan and Gafsa were turned over to the respective "Coopératives Régionales d'Élevage" on October 1, 1968. The stations are in satisfactory condition and are being used for the purposes intended. Since the termination of the project, new poultry substations have been constructed by the GOT at La Rabta/Tunis, Tabarka, Gabés, Nabeul and La Soukra.

Project No.: 664-11-260-028  
Project Title: Fresh Fruit and Vegetable Marketing  
Project Dates: 3/11/59 - 12/31/60  
Contribution: U.S. (TC/DG) \$96,000

### Objective

At the time this project was undertaken European importers were hesitant to import alimentary products from Tunisia due to the lack of experience of Tunisians in this field, and to the lack of proper classification, processing and packaging standards.

The purpose of this project was to provide the services of two fruit and vegetable marketing technicians whose functions were to work with the Ministry of Agriculture, with fresh fruit and vegetable growers, with exporters, and with manufacturers and importers of cartons and crates in order to establish a modern system of classification, standardization and packaging of fresh fruit and vegetables for export.

### Results

Working with the Ministry of Agriculture, the technicians developed data on varieties and types of fresh fruit and vegetables most suited to the European market. They advised the Ministry on the establishment of an organization for quality control of exports. They trained growers and exporters in the requirements of the European market, and they advised them on the packaging, processing and preservation methods to meet minimum standards.

### Evaluation

The understanding on the part of Tunisians of the need and methods for improving their fruit and vegetable marketing techniques has been considerably increased. This has opened large foreign markets and has resulted in increased foreign currency gains for the country.

Project No.: 664-11-420-030  
Project Title: Key Skills Training  
Project Dates: 9/58 - 9/59  
Contribution: U.S. (Counterpart/Grant) \$23,000

Objective

The objective of this project was to provide skilled workers in critically short supply categories, by training abroad twenty (20) participants in electric motor and Diesel engine repair and maintenance.

Results

Two groups of ten participants each were sent to France and Belgium for training. Other than two trainees from the first group, who were repatriated because of misconduct, all participants successfully completed their training.

Evaluation

Since eighteen out of twenty participants completed their training or returned to Tunisia to work in the field in which they were trained, it can be said that the project met successfully its limited objective.

Project No.: 664-11-720-031

Project Title: Training in National Planning

Project Dates: 8/58 - 11/59

Contribution: U.S. (Counterpart/Grant) \$3,000

Objective

Objective of this project was to provide participant training in the techniques of national planning to officials of the Tunisian Planning Agency.

Results

Two participants were sent to the United States and Puerto Rico for a two-month visit. Their program included consultations with faculty members of the University of Tennessee and with Bureau of the Budget and other government officials, and a one-week visit to the Puerto Rican Planning organization.

Evaluation

Both participants returned to their former positions and expressed satisfaction with their observation tour. However, since the project envisaged one year of training combining academic studies and practical experience, the project should be considered as partly successful.

Project No.: 664-11-290-032  
Project Title: Industrial Development Services  
Project Dates: 6/23/58 - 11/30/64  
Contribution: U.S. (TC/DG) \$257,000  
GOF (Dollar equiv.) \$ 33,000

### Objective

The purpose of this project was to assist the GOF by providing technical services for the development of information on the possibilities for the creation of new industries. It was considered that significant additional industries probably were feasible in Tunisia and that it was important to the developmental aspirations of the country to examine this potentiality in some depth in order to single out areas where new plants might be profitable.

### Results

This project was implemented through two contracts with the Wolf Management Co. The first of these was conceived in two parts. The first part consisted of a preliminary evaluation of all the industrial possibilities that might exist. It was accomplished by analysing the possible applicability to Tunisia of the industries in the United States as listed by the U.S. Department of Commerce. The result of this analysis was a development in a priority arrangement of industrial activities that look to have some promise for Tunisia. Among these were the manufacture of asbestos cement, caustic soda, sanitary ware, etc. The second part of the Wolf Management contract consisted of feasibility studies of the following industries: Nitrogen fertilizer, textiles, petroleum refining, pulp mill, salt and potash and beet sugar.

One of the recommendations of the report of the Wolf Management Team under the first contract was for the creation of an industrial development center. This recommendation resulted in the GOF asking AID to finance the services of the foreign technicians necessary for the successful implementation of this recommendation. A second contract with Wolf Management was signed in April 1961. Work under this second contract was never successfully completed due to the fact that the GOF did not proceed with the creation of the contemplated industrial development center.

Within the framework of the second contract with Wolf Management, a technician was brought to Tunisia to assist in implementing the creation of the asbestos cement plant recommended under the first contract. This plant came into production in December 1963.

### Evaluation

While the industrial development center, which it was hoped would emerge from this project, never came into existence, significant positive results were realized. Principal among these was the development of essential basic data concerning Tunisia's industrial potential. A list of industries that could be feasible in Tunisia was developed. In addition, complete feasibility studies on a number of actual projects were made and the groundwork in some degree laid for an eventual improvement in the private investment climate.

Project No.: 664-11-450-033

Project Title: Training of Social Security Specialists

Project Dates: 6/58 - 5/59

Contribution: U.S. (TC/DC) \$ 5,000

Objective

To provide participant training for two officials to study the U.S. social security system, unemployment insurance, workmen's compensation, private pension plans and similar programs, as part of research desired for the establishment of a social security system in Tunisia.

Results

Two officials of the Ministry of Health and Social Affairs spent six months in the United States, as planned.

Evaluation

Both participants returned to work in their field of training. One still works in the Tunisian Social Security administration, and the other transferred in 1962 to a government sponsored insurance company. The project met its objectives and can, therefore, be termed successful.

Project No.: 664-15-690-034

Project Title: English Language Training (Bourguiba School of Languages)

Project Dates: 6/30/58 - 12/30/64

<u>Contribution:</u>	U.S. (TC/DG)	\$193,000
	(Counterpart/Grant)	211,700
	GOT (Dollar equiv.)	\$ 70,000

### Objective

The initial objective of this project was to assist the GOT in developing its facilities for the teaching of English by :-

- a) providing and installing electronic language laboratory equipment, and
- b) providing part of the operating costs of the Bourguiba School.

A second objective was added in 1962, when the project was retitled "English Language Training". It was to provide short-term training in the teaching of English and in American methods of education to second-year English language majors preparing themselves at the University of Tunis to become teachers.

### Results

USAID provided a 24 position electronics teaching laboratory and an American technician to install the equipment and to instruct the Tunisians in its use. As of October 1966, 2004 Tunisians were enrolled in the School; of this number 1305 were studying English. 61 English language majors were sent as participants to the U.S. in FY 62, 63 and 64. 42 of this group are working as English teachers.

### Evaluation

Good results were obtained in achieving the objective of developing an English language training facility. The Bourguiba School is a going concern and now has established branches in Sfax, Bizerte and Sousse.

Review (October 1968)

Due to lack of space at the Tunis school, the 24 position electronics language laboratory has been exchanged with the Sousse branch for a smaller unit. Both laboratories (as well as the other 10 set up throughout the country) are operating an average of 6 hours a day. The equipment is in good condition, maintenance crews are efficient and spare part stocks adequate.

Note: USAID/T Audit Reports 17-62 and 24-62 apply to this project.

Project No.: 664-11-260-035  
Project Title: Industrial Craft Center  
Project Dates: 6/23/58 - 6/30/61  
Contribution: U.S. (TC/DG) \$86,000  
(Counterpart/Grant) 9,000  
GOT (Dollar equiv.) \$21,000

### Objective

The purpose of this project was to assist the Tunisian handicraft sector by providing funds for the establishment of an Industry and Crafts Design Center. The function of the center was to help the handicraft sector by providing the services of a technician skilled in industrial design. Through design and quality improvement it was contemplated that the world market for Tunisian handicraft products would be expanded.

### Results

A U.S. expert specialized in industrial design was provided to the GOT Ministry of Industry and Transport. He supervised the establishment of the Industry and Crafts Design Center and trained local operating personnel. The Center accumulated representative samples of Tunisian handicraft and other products, provided assistance to a number of small industries in product design and assisted with the development of product catalogues. It also sent samples of handicraft products to the United States in order to evaluate the potential of the American market. In 1960, the Center was transferred from the Ministry of Industry and Transport to the Office National de l'Artisanat. This new organization groups all Tunisian artisans and craftsmen and assists them in improving and marketing their products.

### Evaluation

The activities carried out under this project contributed to the development of the handicraft industry in Tunisia in general. It has resulted in a considerably enlarged degree of activity in the local handicraft sector.

Project No.: 664-12-120-036

Project Title: Water Resources Development for Drilling Fifty Wells

Project Dates: 7/23/63 - 3/31/68

Contribution: U.S. (TC/DA) \$2,045,000  
(Counterpart/Loan) 866,000

### Objective

The objective of this activity was to increase the production of groundwater for agricultural and livestock purposes by:

1. demonstrating the efficiency of modern drilling techniques,
2. training Tunisian well drillers and crews,
3. accumulating cost data for drilling, developing and equipping wells under local conditions, and
4. improving the supply of available water through a program of drilling fifty wells in various parts of Tunisia.

An amendment to the original Pro/Ag provided for the expansion of the well drilling work being conducted under this project in the Upper Medjerda Valley to include a detailed inventory of the ground water resources in that area.

### Results

The following can be attributed directly to this project:

1. Forty-three (43) wells with a total production of 35,000 gpm were constructed.
2. Thirteen students successfully completed a one-year drilling school program, consisting of both classroom work and practical field training.
3. Five students received formal three-months training in groundwater fundamentals from the project hydrogeologist.
4. On-the-job training was given to a large number of field personnel in all aspects of drilling, developing and maintenance of wells.
5. The supply and field support organization of the GOF is being sub-divided into one central procurement and major maintenance and repair group, plus three sub-depots located in Tunis, Kairouan and Gabes. This hopefully will result in better all-around support to GOF drilling activities and substantially reduce "stand-by" time.

6. The average time for drilling a "typical" well was reduced from ninety to sixty days.
7. A system for keeping actual well costs was established, taking into consideration such factors as labor and material costs, overhead, operational costs and repair and maintenance expenses.

In addition, a report entitled "Preliminary Study and Recommended Groundwater Investigations, Upper Medjerda Valley, 1965" was issued.

#### Evaluation

It would appear that the project has made a substantial contribution towards increasing Tunisia's groundwater production. The Mission is currently in the process of preparing a formal evaluation of this program.

Project No.: 664-11-130-037 A-C  
Project Title: Fruit and Vegetable Production  
Project Dates: 3/29/59 - 6/3/66  
Contribution: U.S. (TC/DG) \$ 348,000  
(Counterpart/Grant) 495,000  
GOT (Dollar equiv.) \$2,500,000

### Objective

The project was designed to contribute to the strengthening of the Horticultural Section of the Ministry of Agriculture's Division of Animal and Plant Production (PAVA) in order to assist the Government of Tunisia's efforts to increase the country's agricultural production as a means of stabilizing the rural economy, reduce fruit and vegetable imports, increase their production for domestic consumption for an increasing population and growing tourist trade and permit their export to the expanding European markets.

### Results

The following accomplishments can be attributed to the project:

1. Establishment of ten fruit tree nurseries, twelve vegetable nurseries and five demonstration stations with an annual distribution of 2.5 million fruit tree stock and 50 million vegetable stock to farmers.
2. Short-term training of 109 participants in fruit and vegetable nursery production in the United States and third countries.
3. Introduction and development of improved varieties of adapted fruits and vegetables.
4. Demonstration of modern methods of cultivation applicable to Tunisian conditions.
5. Training and demonstration in insect and disease control, fertilization and pollination.
6. Training and demonstrations in crop preparation for market.

### Evaluation

At the time of the completion of the project, it was estimated that it had made unnecessary the expenditure of the one million dollars worth of foreign

exchange which had previously been spent annually on the importation of fruit trees from abroad, a large percentage of which were lost due to drying out on arrival or because of disease or unsadaptability to the Tunisian climate. Furthermore, an estimated \$14 million worth of foreign exchange previously spent on fruit and vegetable crop imports were saved through the elimination of certain fruit and vegetable imports due to local availability.

Since the termination of the project, Tunisia's fruit and vegetable production has continued to thrive, with imports reduced to a minimum and the exports of certain fruits and vegetables continuing to expand.

NOTE: USAID/T Audit Report 28-62 applies to this project.

Project No.: 664-11-130-038  
Project Title: Insect Control  
Project Dates: 6/30/61 - 6/28/63  
Contribution: U.S. (TC/DG) \$13,000

Objective

The purpose of this project was to assist Tunisia in the suppression of insects and diseases that annually cause extensive losses to crop production.

Results and Evaluation

The U.S.G. assistance consisted of purchasing and granting commodities as follows:

1. Twenty complete sets insect and plant disease collection and identification equipment, insect storage cabinets, and binocular microscopes.
2. Two portable trailer-mounted fumigation chambers.
3. Agricultural pesticides and attractants for demonstrational purposes.

This project met its objective.

Project No.: 664-11-110-039  
Project Title: Agricultural Survey Team  
Project Dates: 2/13/59 - 6/30/61  
Contribution: U.S. (TC/DG) \$5,000

Objective

To send four GOT technicians to the U.S. in 1959 for one month to observe irrigation methods and water utilization, with particular reference to high and medium salinity, crop varieties and methods of erosion control.

Results

The four men who made the trip have apparently utilized the information in their respective positions with the GOT. They have all advanced in responsibilities as follows:

	<u>Position in 1959</u>	<u>Position in 1966</u>
1. Jeddi Mohamed	Chief Technician, Office of Medjerda Valley Authority	Under Sec. State for Agriculture
2. M'Hirsi, Salahedinne	Technician, Ministry of Agriculture	Engineer, Office of Medjerda
3. Zitoune, Boubaker	Engineer, Ministry of Agriculture	Chief Engineer, Office of Medjerda
4. Simda, Tacoufik	Student	Chief, Central Services, Office of Medjerda

Evaluation

Many U.S. methods in irrigation, soil classification and salinity control are now being practiced in the Medjerda Valley Project. In Mr. Jeddi's function as Under Secretary of State for Agriculture, as well as in his subsequent position as Secretary of State (Minister) for Agriculture, he was responsible for the national irrigation program and was in a position to utilize his experience in the U.S. and at the Medjerda for improvements in irrigated agriculture. Mr. Jeddi currently (1969) is Ambassador to Switzerland.

Project No.: 664-11-130-040  
Project Title: Grassland Improvement  
Project Dates: 10/28/59 - 6/19/63  
Contribution: U.S. (TC/DG) \$78,000  
(Counterpart/Grant) 30,000  
GOI (Dollar equiv.) \$396,000

Objective

The objective of this activity was to improve the rangelands of central Tunisia, by natural revegetation of the plant cover and reseeding where possible and economical.

Results and Evaluation

U.S. contribution to this project covered the costs of a Range Management Adviser and the following equipment and supplies:

Sudan grass seed, 2 grain drills, 2 disc harrows, 1 pickup truck, 1 vehicle, 2 trucks, wire and fencing supplies, 2 tractors and trailers and miscellaneous supplies.

During the course of the project several grass evaluation plots were seeded as well as fifty tons of sudan grass seeded in an attempt to alleviate a feed shortage due to drought conditions.

Project No.: 66k-11-110-041

Project Title: Support for the Superior School of Agriculture

Project Dates: 1/61 - 1/62

Contribution: U.S. (TC/DC) \$11,000

### Objective

To enroll three (3) participants in an agricultural college for undergraduate study leading to a B.S. Degree.

### Results

The three (3) participants:

1. Bouzaouche, Mohamed
2. Djerbi Larbe Grooz and
3. Khediya, Moneef

were enrolled at the Polytechnic Institute San Luis Obispo, California in January 1961 but after one scholastic year at Cali-Poly, they returned to Tunisia. In the fall of 1962 they enrolled at American University of Beirut. The first named participant dropped out for personal reasons after 1½ years at AUB. The other two participants were graduated from AUB in June 1965 with high scholastic records. Both men are now employed as full-time professors at agricultural colleges. Mr. Bouzaouche, the "drop-out", is employed as a translator for the Texas A&M professors at Chott Maria Agricultural College.

### Evaluation

The results from this project cannot be considered as being 100% successful for the reason that one participant did not complete his undergraduate studies. However, it is considered that the results are quite good for the reason that even the training gained by the "drop out" is being utilized in that he is working in a useful capacity for the Chott Maria project. The other two participants, Messrs. Djerbi and Khediya are employed by the GOI as professors of Animal Husbandry and Horticulture respectively.

Project No.: 664-11-450-045

Project Title: Manpower Information and Employment Services

Project Dates: 2/11/59 - 8/27/65

<u>Contribution:</u>	U.S. (TC/DG)	\$216,000
	(Counterpart/Grant)	140,000
	GOP (Dollar equiv.)	\$ 66,000

### Objective

The objective of this project was to develop a full-fledged manpower planning and employment service by the end of FY 1965. It was contemplated that this institution would have its headquarters in Tunis and ten local offices around the country and would provide services for recruitment and placement, labor market information, youth employment counseling and promotion of full employment.

### Results

The U.S. Government provided the services of one direct-hire U.S. technician who assisted in the development and analysis of statistical data and in attacking the manpower problem. He provided consultation and assistance in the operation of the Public Employment Office system and trained a Tunisian counterpart.

Eighteen Tunisians received third country training and two others received training in the U.S. The commodity element of the project consisted of books and demonstration material.

At the time of the close of the project, the headquarters office in Tunis and seven local employment offices were in operation.

### Evaluation

The project fell short of its goal partly because the goal encompassed some longer-range objectives which were not attainable with the limited resources provided and within the time-span allotted; due in part to the high casualty rate in the participant training element and lastly because of the absence of an effective manpower system and professional guidance to employment service staff.

Project Review (October 1968)

The Employment Offices established under the program are operating and the total number has been increased to 14. In addition, various facets of the broad manpower problem are being worked on systematically by USAID technicians (Project 664-11-460-225 Manpower Supply and Demand Analysis) and experts provided from other sources.

Project No.: 664-11-730-046

Project Title: Improvement of Government Budgeting & Accounting

Project Dates: 4/60 - 5/60

Contribution: U.S. (TC/DC) \$2,000

### Objective

The objective of this project was to provide an opportunity to the Tunisian Budget Director to see at first hand other governments' budgeting procedures for possible adaptation to Tunisian practices, and to stimulate training for other budget officials.

### Results

Mr. Abdesselen Ben Ayed spent six weeks in the United States and Canada. Though brief, this visit gave him an extensive insight into budgeting methods used at both state and federal levels.

### Evaluation

Mr. Ben Ayed returned to his post, which he held until 1964, when he was appointed Ambassador to the German Federal Republic. This visit did not result, as it had been hoped, in sending junior budget officials to the U.S. for more extensive training. The project may be considered as partially successful.

Project No.: 664-11-730-047

Project Title: Assistance to the Fonction Publique

Project Dates: 6/59 - 6/62

Contribution: U.S. (TC/DG) \$4,000

### Objective

To expose officials of the Tunisian Civil Service system to U.S. and Canadian civil service procedures for possible adaptation to Tunisian Government personnel management practices.

### Results

The Director of the Tunisian "Fonction Publique" (Civil Service system) and one of his principal assistants went to the U.S. for a period of six weeks to observe government personnel management procedures and to consult with public administration specialists, both in Canada and the U.S.

### Evaluation

Participants returned to their previous high posts, which they occupied until their demise in 1963. The observation period was too short to enable participants to obtain real insights into American and Canadian personnel management practices; hence, project should be considered only partially successful.

Project No.: 664-11-960-048  
Project Title: Technical Film Library  
Project Dates: 6/15/59 - 6/23/64  
Contribution: U.S. (TC/DG) \$69,000  
(Counterpart/Grant) 32,000  
GOI (Dollar equiv.) \$25,000

### Objective

To support development projects in agriculture, public health, industry, and adult education by establishing a centrally located film library from which educational and documentary films could be made available on a free loan basis throughout Tunisia.

### Location

Ministry of Information, Tunis.

### Project Results

The U.S. Government provided the services of one direct-hire technician to establish the National Film Library and procured projection equipment, recording equipment, films, scripts and mobile units. Among the major accomplishments were:

- establishment of a basic film library,
- establishment of a national distribution system and lending library operations,
- translation of English scripts into French and Arabic,
- production of sound versions of foreign films in French and Arabic,
- compilation and publication of a film catalogue, and
- establishment of regional information centers provided with reproduction equipment.

### Evaluation

The project was considered successful. The number of persons reached by film shows conducted or serviced by the library was estimated at 100,000 per month.

### Review (October 1968)

The film stocks in French and Arabic have been increased considerably. The library now has about 500 regular borrowers throughout the country and handles about 150 shows weekly. The main customers are schools and cultural committees.

Project No.: 664-11-270-050  
Project Title: Management Services Center  
Project Dates: 3/1/59 - 12/63  
Contribution: U.S. (TC/DC) \$2,000

### Objective

The purpose of this project was to establish an independent, non-profit management services center to stimulate business management. The center would provide training, courses and consulting services for management and supervisory personnel; disseminate technical information to business; and handle the organizational details for teams of Tunisian participants to the U.S. and other countries for management training. Accurate statistics were not available, but it was clear that an increased number of competent management and trained technical personnel were needed in Tunisia. This shortage of managerial and technical skills in industry had become acute with the departure of large numbers of trained French technicians, following the independence of Tunisia.

### Results

The implementation of this project was intended to occur in several phases. The first of these consisted of sending the future Tunisian director of the center to the U.S. for a two-month orientation training program. This individual had already received extensive training in Europe which had been formulated for the purpose of preparing him for assignment as director of the center to be created under this project. Midway through the training program that had been arranged in the U.S., the participant returned to France without consulting AID/Washington. After this event nothing further was done with the project and it was closed out.

### Evaluation

Participant abandoned his program before completion and without permission. The Management Services Center was never established, and the participant himself is not known to be in Tunisia. Project, therefore, is considered a failure.

Project No.: 664-15-270-051

Project Title: Industrial Management Training

Project Dates: 6/27/59 - 10/23/66

Contribution: U.S. (TC/DG) \$172,000

GOT (Dollar equiv.) \$ 12,400

### Objective

The purpose of this two-part project was to assist the GOT in training the operating and supervisory cadre needed for the starting-up, maintenance and operation of a new esparto pulp plant (SNTC) in Kasserine and in alleviating the shortage of trained management personnel in industry and government.

### Results

1. USAID/T contracted with Parsons & Whittemore of France and Gronzo de Nora of Italy to train for one year in their plants in France and Italy the operating and supervisory cadre needed for the SNTC plant in Kasserine. A total of 117 individual training programs (111 participants, 6 of whom received a second training program) were carried out under the project between Spring 1961 and August 1965. SNTC selected the participants, while USAID, through the two contractors, financed the living expenses of the trainees abroad. International travel was provided by the GOT through the Trust Fund.
2. USAID contracted with CEGOS, a French management-training firm, to conduct 38 one-week seminars in Tunis, covering such subjects as management controls, personnel administration, budgetary controls, organization, work measurement, etc.. A total of 850 individuals (an average of 22 per course), drawn from government and municipal departments, quasi-governmental institutions and private industries received short-term seminar training under this program.

### Evaluation

The SNTC project met the objective of helping the Kasserine plant by providing training to its operating and supervisory personnel so that they would be capable of setting up, maintaining and operating the plant in an acceptable manner. Observation of the returned trainees actually performing assigned jobs showed that they were confident in the performance of their responsibilities. Practically all reported after the plant start-up that they were satisfied with the training they had received. As of 1967, four years after the plant start-up, 70% of those participating in the project were still on the job. Those who had left had, on the average, remained with SNTC

for 2½ years after start-up.

The Office of Plan, which conceived and coordinated the program of short-term seminars for management personnel, was enthusiastic about the results. From every indication, it appears that considering the brief period of training involved, a significant upgrading of management talent was achieved.

Project No.: 664-15-270-051

Project Title: Industrial Management Training

Project Dates: 6/27/59 - 10/23/66

Contribution: U.S. (TC/DG) \$172,000

GOP (Dollar equiv.) \$ 12,400

### Objective

The purpose of this two-part project was to assist the GOP in training the operating and supervisory cadre needed for the starting-up, maintenance and operation of a new esparto pulp plant (SNIC) in Kasserine and in alleviating the shortage of trained management personnel in industry and government.

### Results

1. USAID/T contracted with Parsons & Whittemore of France and Oronzo de Nora of Italy to train for one year in their plants in France and Italy the operating and supervisory cadre needed for the SNIC plant in Kasserine. A total of 117 individual training programs (111 participants, 6 of whom received a second training program) were carried out under the project between Spring 1961 and August 1965. SNIC selected the participants, while USAID, through the two contractors, financed the living expenses of the trainees abroad. International travel was provided by the GOP through the Trust Fund.
2. USAID contracted with CEGOS, a French management-training firm, to conduct 36 one-week seminars in Tunis, covering such subjects as management controls, personnel administration, budgetary controls, organization, work measurement, etc.. A total of 650 individuals (an average of 22 per course), drawn from government and municipal departments, quasi-governmental institutions and private industries received short-term seminar training under this program.

### Evaluation

The SNIC project met the objective of helping the Kasserine plant by providing training to its operating and supervisory personnel so that they would be capable of setting up, maintaining and operating the plant in an acceptable manner. Observation of the returned trainees actually performing assigned jobs showed that they were confident in the performance of their responsibilities. Practically all reported after the plant start-up that they were satisfied with the training they had received. As of 1967, four years after the plant start-up, 70% of those participating in the project were still on the job. Those who had left had, on the average, remained with SNIC

for 2½ years after start-up.

The Office of Plan, which conceived and coordinated the program of short-term seminars for management personnel, was enthusiastic about the results. From every indication, it appears that considering the brief period of training involved, a significant upgrading of management talent was achieved.

Project No.: 664-15-280-052

Project Title: Participant Training for Industry

Project Dates: 2/24/59 - 6/68

Contribution: U.S. (TC/DG) \$280,000  
(Counterpart/Grant-Loan) 113,000

Objective

To assist the GOF in its industrial development, particularly in the promotion of private investment, through the provision of short term business and industrial training.

Results

Training was provided to 159 Tunisians (142 in the U.S. and 17 in other countries) primarily in the following fields:

- International Marketing
- Hotel Training (Cornell University)
- Hotel Equipment
- Hotel Administration
- Airport Maintenance and Repair
- Seaport Administration
- Textiles Industry
- Industrial Production
- Manufacturing Industries (Ferguson Seminar)
- Food Distribution

Evaluation

Many of the returned participants are making substantial contributions towards the achievement of the project objectives.

NOTE: The project was closed out in CY 1967. Participants still in the United States at the time were transferred to Project 664-11-690-229, General Training Program.

Project No.: 664-11-250-054

Project Title: Desalinization of Brackish Water - Zarzis

Project Dates: 9/17/58 - 12/16/60

Contribution : U.S. (TC/DC) \$ 85,000  
(Counterpart/Grant) 38,100

GOT (Dollar equiv.) \$ 2,000

### Objective

This project was developed to provide minimal potable water requirements in an area seriously handicapped by shortage. In addition, it was hoped that a successful demonstration of the use of a desalinization process for brackish water would lead to the improvement of the standard of living of many people.

### Location

Zarzis, southern Tunisia.

### Results

The city of Zarzis had, at the time the project was being implemented, a population of about 9,000 inhabitants. The only drinking water available was that collected in rain cisterns, and the city frequently had to import drinking water from 50 miles away.

The project consisted of the financing of procurement and installation of an IONICS "demineralizer" unit capable of desalinizing 25m<sup>3</sup> of brackish water per day, sufficient to provide water for the town's human consumption. After encountering and resolving some unanticipated problems, such as the presence of iron and hydrogen sulfide in the water, the unit went into operation late 1960, operating primarily during the summer droughts.

### Evaluation

The unit apparently provided satisfactory service, as evidenced by the fact that the GOT, on its own account, purchased a much larger IONICS unit in connection with the construction of a luxury hotel on Djerba. However, several years after the installation of the Zarzis plant, a pipeline was built to the city from a newly developed well at Medenine, about 40 miles away, thereby obviating the need for the plant.

Review (November 1968)

While still in operating condition, the unit no longer is being utilized on a regular basis due to the availability of water from the Medenine well. USAID is endeavoring to arrange with the GOF for the transfer of the unit to another location in Tunisia or, if this is not feasible, to make it available to another USAID Mission.

Project No.: 004-11-370-057  
Project Title: Civil Aviation Improvement  
Project Dates: 6/29/59 - 1/  
Contribution: U.S. (TC/EG) \$599,000 <sup>2/</sup>  
(Counterpart/Loan-Grant) 106,000

### Objective

The purpose of this activity was to improve and modernize the Tunis/Carthage International Airport by supervising the completion of facility installations being performed by FAA under Project 664-22-370-186, Tunis/Carthage International Airport, providing technical advice and assistance related to the establishment of these installations as operating facilities and training Tunisian personnel in their operation and maintenance.

### Results

Prior to FY 1963, AID financed under this activity several surveys for the preliminary planning of the GOT's Civil Aviation Improvement Program. This included services of FAA technicians in reviewing preliminary plans for the development of El Aouina (later Tunis/Carthage International) Airport which subsequently was financed with a \$5.1 million DLF loan, site determination and flight checking of navigational equipment and training in the United States of 13 Tunisian participants in air traffic control, airport management, airport engineering and aeronautical engineering.

A Civil Aviation Assistance Group (CAAG), consisting of a Chief, an Electronics Engineer and an Air Traffic Control Specialist (all FAA technicians), was established in June 1962 to provide technical assistance to the GOT Department of Civil Aviation and the Department of Public Works for the physical development of airports. By the end of the project, 14½ manyears of U.S. project personnel had been assigned to the program.

During their stay, the members of the group conducted on-the-job training for air traffic controllers and navigational equipment operating/maintenance personnel, installed and checked out navigational aids, served as consultants in the development of the Djerba International Airport, etc.

1/ While all physical activities on the project ceased as of 6/30/68 with the departure of the last member of the CAAG, the project close out entailed the discharge of all financial obligations.

2/ As of 12/31/68

By the time the last CAAG member left Tunisia in June 1968, the Area Air Traffic Control System and navigational aids (including Instrument Landing System, Very High Frequency Omnidirectional Range (VOR), Distance Measuring Equipment (DME)) and the Airport Traffic Control Tower were fully operational and in good working condition. A total of 47 Tunisians had, or were receiving, technical training in the United States in all phases of airport operation and the maintenance of navigational equipment.

#### Evaluation

The fact that the Tunis/Carthage International Airport is equipped with modern navigational aids and air traffic control equipment being operated and maintained by U.S. trained Tunisian technicians indicates that the program has been effective in meeting its ambitious goals.

Project No.: 664-11-120-059  
Project Title: Improvement of Oued Ellil Dam  
Project Dates: 7/20/59 - 12/31/61  
Contribution: U.S. (Counterpart/Grant) \$ 881,000  
GOT (Dollar equiv.) \$1,469,000

### Objective

Over 50% of the fresh water requirements of the metropolitan zone of Tunis is supplied by Ben Metir reservoir. This water is retained by a dam on the Oued Ellil and sent to Tunis by a pipeline. The purpose of the project was to assist in making improvements to the system.

### Location

Ben Metir, 160 km. west of Tunis.

### Results

This project provided for the following activities:

1. Extension by 10% of the watershed area by diverting two small tributaries of the Oued Zeen into the Oued Ellil basin, thus providing a larger and more dependable water supply.
2. Improving the efficiency of the production of electric power at the dam by constructing a 70,000 m<sup>3</sup> regulating storage basin between the power plant and the water treatment plant.
3. Construction of a pressure conduit between the upper and lower hydraulic plants.
4. Construction of a hardtop roadway parallel to the pressure pipeline.

### Evaluation

The work executed has provided Tunis with a more reliable and increased supply of water and electricity. In addition it is estimated that savings of over \$70,000 a year in operating costs of the treatment plant were realized

Review (November 1968)

An inspection tour was made of the Qued Ellil Dam site and the 70,000 m<sup>3</sup> regulating storage basin. The basin was not in use at the time of the visit because of the heavy silt content of the water supply due to the rains of the previous day. Also visited was the filtration plant where the engineer in charge stated that all work listed for the project under review had been completed and is in good operating condition. The hardtop road was in need of some minor repairs.

Project No.: 664-12-120-060  
Project Title: Nefzaous Irrigation  
Project Dates: 10/29/58 - 6/30/62  
Contribution: U.S. (Counterpart/Grant) \$381,000  
GOT (Dollar equiv.) \$742,000

#### Situation at Time Project Initiated

The Nefzaous underground water pool is an extensive pool of artesian water extending southeast from the Chott Djerid. The existing wells were utilizing the total potential artesian water supply of the pool. Around each well were irrigated areas of varying sizes, largely planted with dates. These irrigation systems were established several years ago and consisted mostly of dirt canals for distribution. The improvement of the irrigation system of the Nefzaous area to provide more efficient use of available water was thus an important project.

#### Objective

This project was designed to improve the water distribution system and increase the agricultural production in southern Tunisia.

#### Location

The work was performed at the following sites, all in the vicinity of Douz, southeast of Chott Djerid: Ghidma, Nakhla, Nouil, Tarfalet, El Kroub, Metouria, Kar Ghilane and Ben Zitoun.

#### Results

The construction and establishment of improved wellhead distribution weirs and primary and secondary distribution systems of concrete troughs to replace the earthen canals largely in use at the time and the clearing of about 400 ha. of desert lands about the irrigated areas. The provision of drainage and sand stabilization work required to place under cultivation these additional 400 ha. of land. The replacement of the common dates with improved varieties was also a part of the project. The GOT reported that all work had been completed by 12/31/60

Project No. : 664-12-120-062

Project Title: Irrigation of the Kairouan Plain

Project Dates: 8/29/58 - 7/31/62

Contribution: U.S. (Counterpart/Grant) \$1,095,000

GOT (Dollar equiv.) \$ 100,000

### Objective

This project, designed to irrigate about 2,000 ha. at 15 different locations with water from 22 wells, was part of a general overall program by GOT to improve agricultural production as a means of improving the standard of living and the economic condition of the country. It affected an area in the central sector of the country where agricultural production is difficult and the living standard of the people is low.

### Location

Kairouan area.

### Results

The project involved the following specific installations:

1. Pumping equipment, reservoirs, primary and secondary distribution systems and land leveling and development at Souassi No. 6, Bir Hadj Sadok, Zafrane No. 4, Souassi No. 7, Hadjeb No. 7.
2. Pumping equipment, reservoirs, primary distribution system and land development at Bir Boussari and Bir Djedid.
3. Pumping equipment, reservoirs, primary and secondary distribution systems and land development at Ain Baïda No. 2.
4. Primary and secondary distribution systems, land leveling and development at Hadjeb No. 3.

The various projects were completed in 1963, according to reports from the GOT.

### Evaluation

An estimated 650 families benefited from the project.

Review (November 1968)

The following irrigation perimeters were inspected; all are in good condition and operating as service cooperatives.

Bir Hadj Sadok originally covered 90 ha., but has recently been extended to 110 ha. There are 46.5 ha. of apricots, 8.5 ha. of intensive cultures, 48.8 ha. of forage crops and about 7 ha. of vegetable crops. The irrigation and drainage systems are well maintained. Irrigation ditches are concrete troughs or are concrete-lined.

Zafrane No. 4 was originally 80 ha. but recently has been extended by 40 ha., devoted to intensive cultivation of forage crops. There are 6 ha. of pistachios and 46 ha. of olives, plus areas of pomegranates and other intensive crops.

Hadjeb El Aïoun No. 7 has 93 ha. The perimeter contains 14 ha. of pistachios, 14 ha. of olives, 48 ha. of forage crops and 17 ha. of vegetables and other intensive crops.

Bir Boussari now has 79 ha. A 100m<sup>3</sup> water reservoir supplies the irrigation system. There are 35 ha. of pistachios, 9 ha. of olives, 25 ha. of forages and about 10 ha. of intensive crops and vegetables.

Bir Djedid contains 115 ha. There are 70 ha. of olives and pistachios inter-planted, 40 ha. of forage crops and 5 ha. of vegetable crops.

Ain Beida No. 2 irrigation perimeter has 102 ha. Originally, the perimeter covered only 75 ha. but 27 ha. are now being developed for forages. A stable for 40 dairy cattle has just been completed. There are also 75 ha. of apricots.

Hadjeb El Aïoun No. 3 originally had 60 ha. of apricots and some olives. Another well, Hadjeb El Aïoun No. 10, has been added to extend the perimeter to 120/150 ha. A study is now underway to determine what should be planted in the new area.

From an inspection of these wells and perimeters it is evident that an excellent job of development has been carried out by the H.E.R., P.A.V.A., and the cooperatives. The project can be considered to be an unqualified success.

Project No.: 664-12-120-063  
Project Title: Drainage of El Azib Plain  
Project Dates: 8/29/58 - 12/31/59  
Contribution: U.S. (Counterpart/Grant) \$119,000  
GOT (Dollar equiv.) \$ 24,000

### Objective

The objective of this local currency project was the drainage of about 1,100 ha. of the El Azib plain through:

construction of main drainage canals,  
excavation of secondary and tertiary ditches,  
construction of bridges, culverts, etc..

### Location

El Azib plain lies between the Lac of Dizerte on the west and a range of low hills on the east.

### Results

This project was started early in 1959 and was completed the same year.

### Review (November 1968).

This AID-financed drainage project has functioned well. The bridges, culverts, and drop-structures are in good condition. Drainage canals and ditches are open but some additional maintenance is needed. Agriculturally, the area is well developed. There are large plantings of citrus and tree fruits, as well as vegetables. There are cooperatives and private farmers.

Lack of funds on the part of the cooperatives and private farmers has prevented adequate maintenance of the two main drainage canals. Some silting has occurred and shrubby brush needs to be removed. The Government is planning to provide some money to help with this during the coming year.

This area is a very good example of what can be done agriculturally when proper drainage is provided.

Project No.: 664-51-610-064  
Project Title: Ariana Occupational Training Center  
Project Dates: 4/29/59 - 3/10/67  
Contribution: U.S. (TC/DG) \$540,000  
(Counterpart/Loan) 280,000  
GOT (Dollar equiv.) \$ 85,000

### Objective

The objective of the project was to provide facilities and staff to establish one of four advanced occupational training centers throughout Tunisia as a means of increasing the country's supply of trained technical personnel. The center in question was established to provide specialized training in all phases of automobile repair.

### Location

Ariana (Tunis)

### Results

Under the project, USAID, through contract with the Delgado Trades and Technical Institute of New Orleans, provided technical advisory services, as well as participant training for 19 persons in the U.S. and third countries, equipment such as shop machinery, motors, lathes, machine tools, electrical and diesel units and teaching aids. Furthermore, a loan of U.S. owned local currency was provided to finance the cost of constructing new facilities adjacent to the temporary building made available by the GOT.

### Evaluation and Review (December 1968)

The school is now called C.P.M.G. (Centre de Perfectionnement en Mécanique Générale) and is one of seven advanced occupational training centers throughout Tunisia. The other six include three centers specializing in shoe manufacture, electrical engineering and machine tools. The Center has separate sections devoted to mechanical engineering, light diesel, heavy diesel, automobile electrical engineering, car body repair and painting and farm machinery maintenance and repair.

Each section has an instructor and about 15 students. The instructors are assisted by two general subject teachers; all eight are Tunisian. All members of the staff hold BEI's (Brevet d'Études Industrielles) or CAP's (Certificat d'Aptitude Professionnelle), have had five years' experience in the automobile industry, training in the USA, France or Belgium, and have attended teacher training courses.

Students must be either Secondaire Professionnel grade (i.e. hold the Brevet de l'Enseignement Moyen) or be highly recommended by other occupational training centers. In the CPMG, there are in all 90 to 100 trainees this year, 65 of whom live at the school.

The course lasts eleven months at the end of which an exam is taken. The percentage of passes is 70 to 80. Placement is done through the "Office de la Formation Professionnelle et de l'Emploi" for about 90% of the students. So far the Center has trained 434 students, in addition to this year's trainees.

The Center's facilities are all operating satisfactorily. The CPMG is now organizing free evening classes for mechanics and there are plans to accommodate more students in the coming years.

Note: USAID/T Audit Report 26-62 applies to this project.

Project No.: 664-11-420-065  
Project Title: Establishing Workers' Education Center  
Project Dates: 6/59 - 12/60  
Contribution: U.S. (EC/DS) \$6,000  
GOT (Dollar equiv.) \$2,000

Objective

To assist in establishing workers' education center that would provide labor training courses of various kinds, conduct seminars on labor problems, and serve to hold conferences and meetings, by providing, as a first step, participant training to members of the Union Generale de Travailleurs Tunisiens, the Tunisian Labor Union.

Results

Seven participants were sent to the U.S. for a period of eight weeks, for observation of workers' education programs and consultation with leaders in the field of labor education.

Evaluation

All participants returned to Tunisia and are actively involved in the national labor movement. Their observation visit to the U.S., albeit too short, has been useful to them. However, the envisioned Workers' Education Center failed to materialize. The project, therefore, should be considered successful in a limited way.

Project No.: 664-12-830-067 A-B

Project Title: Rural and Urban Housing

Project Dates: 6/19/59 - 12/31/63

Contribution: U.S. (TC/DG) \$ 12,000  
(Counterpart/Grant) 2,992,000

GOT (Dollar equiv.) \$3,747,000

### Objective

As a result of poverty and unemployment, large slum areas had by 1959 developed around Tunisia's major cities and in other areas throughout the country. The objective of this project was to help the GOT in a program of slum clearance and the construction of low-cost "Melja" housing units to provide improved minimum housing for approx. 5,840 low-income families.

### Location

Gouvernorats of Kairouan, Le Kef, Tunis, Medenine, Kasserine, Sousse, Jendouba, Beja, Bizerte, Cap Bon, and the towns of Tozeur, Nefta, and Degache.

### Results

From October 1959 to December 1963, approximately 5840 houses (2 rooms, W.C., kitchen and a small courtyard) were constructed in various areas of Tunisia. As a result of this program, large numbers of families now have decent homes instead of their previous unhealthy and inadequate "bourbis" (mud houses)

<u>Gouvernorats</u>	<u>No. of Houses</u>
Tunis	800
Cap Bon	175
Gafsa	550
Medenine	100
Bizerte	300
Beja	250
Sfax	125
Sousse	840
Kairouan	650

<u>Gouvernorats</u>	<u>No. of Houses</u>
Tozeur	400
La Kef	1100
Sheitla	100
Jendouba	150
Kasserine	300

Evaluation

USAID financial support of this project was justified because the improved housing that was erected contributed not only to increased employment for the labor force, but complemented the objective of increasing industrial and agricultural productivity by improving the living conditions of the many families that benefited from this housing.

Review, (FY 1969)

While it was not possible to specifically identify those housing units which were financed jointly by USAID and the GOT, (the number built exceeds those financed in part by USAID - see also Project 664-22-830-203) the houses which were observed were generally well taken care of and in good condition.

Project No.: 664-12-690-069

Project Title: Construction of Scientific, Technical and Vocational Training Buildings, Technical and Professional School Construction and Equipment.

Project Dates: 8/30/58 - 12/31/61

Contribution: U.S. (Counterpart/Grant) \$548,000  
GOT (Dollar equiv.) \$ 95,000

### Objective

To provide additional educational facilities, through contribution of local currency, for the enlargement of a vocational school at Gabes and of a lycée in Tunis, and the construction of a new vocational school at Tozeur. (Enlargement of the National Technical School of Tunis, envisaged in the original project, was eliminated by an amendment to the project agreement dated May 22, 1959).

### Results

The following institutions were affected:

1. Lycée Zietounien Ibn Rachik, Tunis, (dormitory, dining room, library, laboratories, classrooms, administrative buildings.)
2. Centre de Formation Professionnelle - Gabes (refectory, kitchen, dormitory, infirmary)
3. Centre de Formation Professionnelle - Tozeur (classrooms, shops, administrative buildings, dormitory, staff housing.)

### Evaluation

Although construction schedules set forth in the original Project Agreement were not maintained, the project met its objectives and can be termed successful.

### Review (November 1968)

All buildings completed and being utilized for purpose intended.

Project No.: 664-11-640-070

Project Title: Assisting Tunisian Textbook Preparation

Project Dates: 6/11/59 - 8/62

Contribution: U.S. (TC/DG) \$22,000

GOX (Dollar equiv.) \$ 5,000

### Objective

To increase the capability of the "Office Pedagogique" (Ministry of Education) to write, prepare and produce textbooks for Tunisian schools, by providing the services of an American consultant, and participant training for a limited number of Tunisian participants.

### Results

Three participants were sent to the United States for a period of 20 months to train in printing, book binding and allied arts.

### Evaluation

The objectives of the project were not formally changed. However, training provided emphasized the physical aspects of book production, rather than writing and preparation of textbooks and educational materials, as originally intended. Upon return, participants were not employed by the Ministry of Education, which had no production facilities, but by the Printing Section of the Ministry of Information and Cultural Affairs. However useful it may have been to train technicians in printing and binding, this training did not measure up to project objectives. The services of the American adviser contemplated in original agreement were not provided. Therefore, this project did not meet its objectives.

Project No.: 664-11-640-072  
Project Title: Elementary School Assistance  
Project Dates: 4/29/59 - 12/31/61  
Contribution: U.S. (TC/DG) \$4,000

Objective .

To assist the GOT in developing low-cost school construction by providing the services of an American technician to train a group of instructors who would, in turn, guide self-help school construction in rural areas.

Results

The project was not implemented. Other than purchase of furniture and household furnishings for technician envisioned, no expenditures were authorized under this project. Commodities bought were used for technicians in other projects.

Project No.: 664-51-660-073  
Project Title: University of Tunis  
Project Dates: Funding: 12/60 - 12/70  
Physical Work: 1961 - 1970  
Contribution: U.S. (DL/H-015) \$1,950,000 (est.)  
(104 (f) Loan - Dollar equiv.) 1,624,000  
(TC/DG) 478,000  
GOT (Trust Fund - Dollar equiv.) 52,000

Location:

Tunis

Objective

The objective of this activity was to assist Tunisia in meeting the increasing needs of trained manpower through assistance in creating a Faculty of Law, Economics and Political Science (initially the School of Law, Economics and Business Administration - see Project History), one of several schools comprising the newly established University of Tunis.

Specifically, the loan financing portion of the project was in support of the physical construction of the school, while the grant financing provided the funds for technical assistance aspects.

Project History

On October 31, 1963, Loan Agreement 664-H-015 was signed between the Government of Tunisia and the Government of the United States, providing up to \$1,800,000 "to assist in financing the foreign exchange costs of goods and services" for the "construction and equipment of the faculté de Droit et Sciences Politiques et Economiques ("FDSP") of the University of Tunis".

The DL did not provide for preliminary architectural and engineering services, as well as final drawings, draft contracts and other bid documentation, which were prepared by The Architects Collaborative, Inc (TAC) and funded from prior year DG funds.

Progress in the initial engineering and architectural phase was slower than anticipated owing to certain design problems raised by university grading-plan changes, questions of architectural flavor, the necessity of a detailed study of earthquake factors, and changed capacity for production of certain local materials owing to the unanticipated departure of some skilled European technicians.

At the same time, given the comprehensive institution-building objectives of the project, USAID initiated an extensive program to provide training in appropriate areas of business administration to twenty-one Tunisian faculty and three supporting staff in order to provide that part of the school with a Tunisian faculty by the time the project was scheduled to be phased out.

Bids for the construction of the school were invited in the fall of 1965. In an effort to attract bidders, the University of Tunis project and the Chott Maria Agricultural School project (Loan 664-H-020) were combined for bidding purposes. Three bids were received in January 1966; these were approximately 65 - 80% in excess of TAC's final cost estimates. The GOT considered, and AID concurred, that all the bids received in response to the invitation to bid were excessive and all bids were rejected. The Franchi Construction Co., the low bidder, offered to negotiate the bid price with the GOT; after considering various alternatives, it was decided to offer all bidders the opportunity to negotiate.

After considering revised offers, the GOT and AID concurred in a bid award to Franchi. The final Franchi offer represented a total combined price reduction of about \$660,000, reducing from 65% to 55% the amount by which the total Franchi bid exceeded the construction cost estimates prepared by TAC in January, 1965. A contract was signed with Franchi in August 1966, with the University of Tunis share of the contract amounting to \$1,242,500. In approving the contract award, AID recognized that additional funds would have to be provided to cover non-construction costs (i.e. engineering supervision, equipment and books) and agreed to consider providing additional loan funds to cover non-construction foreign exchange costs when such costs were adequately determined. (An amendment to the Loan Agreement was signed on July 27, 1967, providing for an additional \$290,000 for the above purpose).

During the second half of FY 1966, the technical assistance portion of the project was substantially modified. Previously, it had been intended to enable the Faculty of Law and Economics of the University of Tunis to concentrate on the teaching of business administration at the undergraduate level. The emphasis now changed to economics. As a result of the recommendations of the Harvard Business School Survey Team (February, 1966), a separate

project on Management Education and Executive Development (Project No. 664-11-770-228) was conceived and developed. This project places emphasis on the teaching of business administration at the graduate level and (at the GOT's request) largely outside the Faculty of Law, Economics and Political Science. Participants who were sent to the U.S. for study when the concentration was on business administration are (or will be) assigned to the newly formed Graduate School of Business Administration.

On May 1, 1967, a contract was signed with the University of Minnesota to carry forward the objectives related to the strengthening and Tunisifying the University's teaching staff for economics and related subjects. This contract, which was initially designed to provide assistance to the Ministry of Agriculture (664-11-110-237) included technical assistance to the Faculty, including training of participants. The decision to cover both activities under one contract was made partly because of potential savings in contract administrative costs, but mostly to reflect a decision to avoid a major technical assistance commitment to the Faculty of Economics at that time.

With this change, two participants studying economics in the United States were transferred to Project 664-11-690-229, General Training. Subsequent trainees and teaching assistance were (and are being) covered under the University of Minnesota's Project 664-11-110-237, Agricultural Economic Research and Planning/University of Tunis.

### Results

The buildings which compose the Faculty of Law, Economics and Political Science were essentially completed and occupied by the GOT in Spring 1969. The Architects Collaborative is fully satisfied that all architectural, mechanical and electrical work has been completed, but due to the combined nature of the loan, a final certificate of completion cannot be issued until the outstanding work at Chott Maria has been completed. A final settlement is expected by the end of the current calendar year.

### Evaluation

While the construction phase of the project has been satisfactorily completed, a final evaluation of the project is not feasible until the completion of the technical assistance currently being provided under Project 237. However, it is a fact that the Faculty is operative and that thanks to the construction provided under this project, enrollment has been increased from 450 to approximately 2000 students.

Project No.: 664-11-650-075  
Project Title: Strengthening Secondary Technical Education  
Project Dates: 6/30/59 - 8/31/61  
Contribution: U.S. (TC/DG) \$4,000

Objective

To provide the Ministry of Education with the services of three instructors: one in secondary science education, one in radio building and repair, and one in automobile mechanics.

Results

Purchase of household furniture and furnishings for technicians envisioned was the only expenditure authorized under this project. Commodities were used for technicians in other projects.

Evaluation

Project was not implemented.

Project No.: 664-12-310-078 A-H

Project Title: Road Improvement Project

Project Dates: 2/2/60 - 12/31/63

Contribution: U.S. (Counterpart/Grant) \$1,724,000

GOT (Dollar equiv.) \$ 931,000

### Objective

The objective of this project was to provide a better road system through the construction of new primary and secondary highways, improvements to existing highways, and the construction of a number of new permanent highway bridges.

### Results

The project consisted of 17 sub-projects for hard surfacing, grading, and general improvement of various roads throughout Tunisia, building bridges and bypasses where necessary. The total project involved resurfacing or grading and surfacing of some 327 km. of roadway, building 4 bridges, one river crossing (river bed platform or ford) and one 10 km. bypass. It also involved enlargement and improvement of G.P. 1, covering 300 km. of the main road from Tunis to Sfax, particularly in and around principal cities on the route.

The following new highway bridges were built:

1. Avenue de Carthage (southern exit of Tunis, on road GP 1 Tunis to Sfax);
2. Qued Tessa (GP 5 between Le Krib and Le Kef);
3. Qued Miliane (GP 1 between Rades and Ez-Zahra);
4. Qued Sarrath (GP 18 Kalast Es-Senam area);
5. Qued Medjerdah (GP 17 at Jendouba).

New construction and highway improvements were accomplished on the following routes:

1. Bizerte-Tabarka, hard surfacing of 12.7 km. commencing at Bizerte on NC 51;
2. Kelibia-Dazoughrane, hard surfacing of 32 km. commencing at Kelibia on NC 26 and 27;

3. Pont du Fahs-Kairouan, hard surfacing of 22.7 km. commencing at Sbikha towards Kairouan;
4. Thala-Kasserine, hard surfacing of 22.4 km. commencing at Kasserine on Le Kef-Gafsa Route GP 17;
5. Gafsa-Tozeur, hard surfacing of 50.8 km. commencing at Gafsa on GP3; the road connects the Gafsa-Sousse and the Gafsa-Sfax communicating roads.
6. Kairouan-Sidi Nasr Allah, grading and establishing stone foundation of 30.8 km. beginning at the intersection of NC 36 with GP 2 and extending to Sidi Nasr Allah;
7. Mateur-Beja, paving and grading of 31 km. commencing at Ksar Mezour towards Mateur and ending at Souqia;
8. Tunis-Sfax, improvement and enlargement of 300 km. on GP 1 commencing Tunis;
9. Radès bypass, construction of a 10 km. bypass at Radès for NC 33;
10. Enfidaville-Sidi Bou Ali, resurfacing of 20 km. commencing at Enfidaville;
11. Ebba Ksour-Djerissa, surfacing of 21 km. commencing at Ebba Ksour;
12. El Hamma-Kebili, hard surfacing of 74 km. commencing at El Hamma. (U.S. Government financed 1/3 of this project.)

#### Evaluation

This improvement of highway infrastructure favorably influenced industrial, agricultural and tourist development of the country by providing better communications. It also provided desperately needed employment for large numbers of the unemployed.

#### Review (1969)

All roads covered by this project were inspected during 1968 and were found to be in good condition and fully utilized.

Project No.: 664-12-120-079

Project Title: Drainage and Improvement of the  
Plain of Selmini - La Merdja

Project Dates: 8/29/58 - 7/31/61

Contribution: U.S. (Counterpart/Grant) \$238,000

### Objective

The objective was to provide an adequate drainage system of the plain of Selmini to remove excess water during periods of heavy rain. The plain includes 6,000 ha. of flat, very gently sloping land. The Oued Melah running through the area furnished the natural means of drainage. However, because of the flatness of the plain, this proved inadequate and large areas were inundated during periods of heavy rain. The project was accomplished through construction of:

main canal and principal outlet,  
one highway bridge and two small rural road bridges,  
secondary and tertiary drainage ditches (51 km.),  
terraces, spillways and reforestation for soil and water conservation.

### Location

The plain of Selmini - La Merdja consists of 6,000 ha. of land adjacent to Oued Melah, east of Jendouba (Souk El Arba).

### Results

The project was started in late 1958 and completed in March 1960. It was visited during construction by USAID Agr. Division technicians as reported to AID/W by TOICA A-1098, May 31, 1960.

### Evaluation

The work improved the productive capacity of approximately 3,250 ha. of land and benefited about 100 families. Controlling the waters of the Oued Melah afforded substantial savings in the maintenance of the main highways and rural roads which give access to this plain. A secondary, but nonetheless important consideration was the project's heavy requirement for manual labor -- approximately 60,000 man-days -- which provided some relief for the area's heavy unemployment.

### Review (Summer 1968)

The drains and other structures are in good operating condition.

Project No.: 664-11-280-030

Project Title: Specialized Training of Electrical Engineers

Project Dates: 10/15/58 - 9/30/61

Contribution: U.S. (TC/DG) \$3,000

### Objective

This project consisted of sending one participant to France for specialized training in electrical engineering. The training provided was to assist in relieving the serious bottleneck to economic development resulting from the scarcity of professional personnel and skilled workers at all levels due to the departure of European technicians after the independence of the country.

### Results

Participant, who was an electrical engineering instructor in a technical school, spent nine months studying thermal plant operations and electrical installations in France. The GOT, which had originally requested one year of training, felt that progress made by the trainee at the end of nine months was adequate, and he was recalled.

### Evaluation

Project successful, as participant returned to work at electro-thermal installation field in which he has trained.

Project No.: 664-12-120-081

Project Title: Drainage of the Sidi Magdour Region

Project Dates: 8/4/59 - 12/31/62

Contribution: U.S. (Counterpart/Grant) \$1,130,000

GOT (Dollar equiv.) \$ 731,000

### Objective

This project proposed to provide for increasing agricultural production in the Sidi Magdour plain by developing a drainage system for 2,000 ha. of this area.

### Location

Sidi Magdour region is located in El Haouaria plains area on Cap Bon.

### Results

The Sidi Magdour plain includes 2,600 ha. of flat, poorly drained land. Approximately 50% of the area was under water for most of the winter months and produced no winter crops at all, and only a very poor pasture during the summer months. The remaining area was also frequently inundated and generally suffered from poor drainage. Consequently, production of this plain was considerably less than 50% of its potential until realization of the program. The project consisted of the following work:

1. Excavation of a main exit canal to connect the plain to the sea;
2. excavation of two primary drainage canals to collect the excess water and conduct it to the primary canals;
3. excavation of secondary drainage ditches which will remove the excess water and conduct it to the primary canals;
4. construction of bridges, culverts and other special work to insure proper functioning of the drainage system;
5. land clearing and planting of wind breaks.

### Evaluation

This project was part of a broad GDT program to increase agricultural production. Here, the agricultural production of about 1,000 ha. in terms of grain was doubled. An additional 1000 ha. of land, which was non-productive, is now producing grain. Fruit and market gardening are now important in the area. Slightly over 100 families immediately benefited from this project.

### Review (July 1968)

The area has been visited many times prior to July 1968. All drains and structures were observed to be in good operating condition. The project accomplished the purposes for which it was designed.

Project No.: 664-12-120-082  
Project Title: Drainage of Bou Arada Plain  
Project Dates: 8/29/58 - 12/31/61  
Contribution: U.S. (Counterpart/Grant) \$560,000  
GOT (Dollar equiv.) \$464,000

### Objective

Drainage of Bou Arada Plain (3,000 ha.) and control of flood waters through (a) the excavation of a drainage canal along the present bed of Qued Melah and the provision of secondary drainage ditches, (b) the construction of necessary related bridges, culverts and spillways, (c) soil and conservation work on the sloping sides of the basin, and (d) diversion of the waters of the Qued Bou Arada to send about 75% into the Qued Siliana which empties into the Medjerda.

At the time the project was initiated, 1,000 ha. of the plain of highly fertile soil were non-productive because of constant winter flooding; another 1,000 ha. were flooded on the average of one year out of two. Production on the remaining 1,000 ha. was also hampered.

### Location

The Bou Arada Plain, also called Tarf Ech Chena, is located between Font du Fahs and Bou Arada village. It is adjacent to the Qued Siliana and the Qued Melah in the Gouvernorat of Jendouba.

### Results

The work was started in late 1958 and was completed in November 1960. Aside from the excavation and construction activities, soil conservation work included terracing and the reforestation of 4,350 ha. of the slopes of the basin. The project was visited by USAID technicians several times during construction and the work was reported to be satisfactory.

### Evaluation

According to the GOT, 1,000 ha. were brought into production and 2,000 ha. were improved. The project was expected to increase yield by \$240,000 per annum and benefit 1,000 families.

Review (November, 1968)

The drainage system is in good order and operating satisfactorily. The small culverts and bridges viewed are also in good condition.

Project No.: 664-12-120-083  
Project Title: Drainage of the Souk Es Sebt Plain  
Project Dates: 8/29/58 - 7/31/61  
Contribution: U.S. (Counterpart/Grant) \$557,000  
GOT (Dollar equiv.) \$167,000

### Objective

The drainage of approximately 4,000 ha of fertile, but poorly drained, land in the Souk Es Sebt plain. Due to frequent floodings, only about 50% of the total area could normally be planted.

### Location

Located south of Bou Salem (Souk El Khemis) the Souk Es Sebt plain (consisting of approximately 4,000 ha.) is bordered on the east by Qued Tassa, on the north by the Medjerda River, and the south by a mountain ridge.

### Results

The accomplishment of the project required 21.75 km. of primary canals, 80 km. of secondary ditches, 15 bridges, 360 culverts and 150 aprons and step dams. This area is adjacent to the Qued Medjerda and Qued Tasshir.

The construction work began in October 1959 and was completed about January 1, 1961. It was visited several times during construction and at completion by USAID technicians. The work was excellent.

### Evaluation

According to the GOT, the agricultural production was expected to increase four or five fold, with about 150 farm families directly benefiting.

### Review (November 1968)

The extensive drainage system was in good condition at the time of the review. The drains were being cleared annually. The culverts and bridges visited were found to be in good condition.

Project No.: 664-12-120-084

Project Title: Drainage of Bled El Ghorfa

Project Dates: 8/29/58 - 7/31/61

Contribution: U.S. (Counterpart/Grant) \$362,000

GOT (Dollar equiv.) \$119,000

### Objective

Drainage of 3,800 ha. in the Bled El Ghorfa plain in the Governorat of Iskef by deepening and straightening the Qued Melah to allow more rapid movement of the water and the construction of secondary and tertiary canals to carry the water from the land to the main channel of the Qued Melah.

### Location

Bled El Ghorfa Plain (Sidi Bou Ruois, south of Le Krib) located between Qued Tessa, Djebel Bar Khil and Djebel El Kebch. The plain stretches downhill from the Krib river and is overflowed by the Qued Melah.

### Results

Work had been started prior to this project agreement and was completed in early 1960. A total of 21 km. of primary canals, 17 km. of secondary canals and 121 culverts were constructed. On-site inspections were made by a FAO technician and reported as satisfactory.

### Evaluation

This drainage work, according to the GOT, was designed to double the agricultural production and directly benefit 157 farm families.

### Review (November, 1968)

All of the drains are in very good condition. Maintenance appears to be good.

Project No.: 664-11-120-085

Project Title: Provision of Equipment for Maintenance of Primary Drainage Canals

Project Dates: 1/58 - 9/60

Contribution: U.S. (FC/DG) \$165,000  
GOT (Dollar equiv.) \$ 20,000

Objective

The purpose of this project was to purchase equipment to be used by the Ministry of Agriculture to maintain Tunisia's principal drainage canals.

Results and Evaluation

The following equipment was provided under this project:

2 mechanical shovels  
1 truck and trailer for moving the shovels  
Spare parts

This project is considered satisfactory since its objectives have been met.

Project No.: 664-12-120-086

Project Title: Irrigation of Oued Boul Perimeter

Project Dates: 8/29/58 - 12/31/62

Contribution : U.S. (Counterpart/Grant) \$ 500,000

GOT (Dollar equiv.) \$ 452,000

### Objective

This project was designed to provide irrigation to an area of 3,000 ha. in the Enfidaville plain. About 6,000,000 m<sup>3</sup> water per year is available for 2,250 ha. of cereals and 750 ha. of olives and fruit.

### Location

Enfidaville Plain, south of Zaghuan

### Results

Work consisted primarily of constructing a diversion dam at the entrance of Enfidaville Plain, requiring about 12,500 m<sup>3</sup> masonry and concrete work, a diversion gate and a system of earthen canals requiring 336,000 m<sup>3</sup> of excavation.

The construction work started in 1958 and was completed in 1962. It was inspected by USAID engineers several times during construction.

### Evaluation and Review (November 1968)

This project, consisting of a diversion dam, a series of irrigation structures and a system of earthen canals, is functioning as designed. The system was operational during several flood periods between September 1967 and March 1968 and did a good job of flood control and water distribution.

Project No.: 664-12-120-087  
Project Title: Irrigation of Sidi Bou Zid Plain  
Project Dates: 10/27/58 - 12/31/61  
Contribution : U.S. (Counterpart/Grant) - \$715,000  
GOT (Dollar equiv.) - \$516,000

### Objective

To develop nine irrigation perimeter systems (including land clearing, leveling, installation of primary and secondary canals, drainage, and planting) to provide about 3,800 ha. for watered tree crops and the restoration of about 1,400 ha. in pasture lands.

### Location

The perimeters are located in vicinity of Sidi Bou Zid (M.C. 125 approximately 50 km. southeast of Sbeitla.)

Oum El Adam (140 ha.)  
Sidi Bou Zid (100 ha.)  
Maknassy Ksar El Amar (200 ha.)  
Bled Ichria, Sidi Sayeb area (940 ha.)  
Bled Ichria, Bir Bedra area (500 ha.)  
Bled Ichria, Bir Mlikete area (500 ha.)  
Esst Gamouda (320 ha.)  
Bir Mzara (1,200 ha.)  
Maknassy Village and well No. 4 (350 ha.)

### Results

This project was started in 1958 and completed in October 1961.

Evaluation and Review (November 1968)

Since 1961, this project has been expanded, covering today 19,054 ha. divided into 35 production units and 4 service cooperatives. 4,500 ha. are now irrigated. Olive, almond and apricot tree plantations are productive. The irrigation system is operating satisfactorily.

Project No.: 664-32-690-088

Project Title: Equipment for Scientific Technical and Vocational Training

Project Dates: 9/1/58 - 9/30/59

Contributions: U.S. (Counterpart/Grant) \$320,000

GOE (Dollar equiv.) \$168,000

### Objective

To assist the GOE in increasing the opportunities for Tunisian students to develop a sound background in, and a knowledge of, scientific and mechanical skills by providing U.S.-owned local currency for the purchase of laboratory and shop equipment to be used in superior and secondary schools and in mechanical institutes.

### Results

Twenty-nine (29) schools and vocational institutions in various parts of the country were provided with the following equipment:

1. Physics, chemistry and natural science laboratories.
2. Woodworking and metalworking shops.
3. Electrical and radio equipment and tools.
4. Automotive and mechanical shops.
5. Electrical installation shops.

### Evaluation

All funds provided were used for the purposes intended; on the basis of a recent review, this project can be termed as successful.

Project No.: 664-12-120-089-A-E  
Project Title: Exploration and Proving of Underground Water Resources  
Project Dates: 7/31/59 - 12/31/63  
Contribution: U.S. (Counterpart/Grant) \$2,230,000  
GOT (Dollar equiv.) \$4,040,000

### Objective

This project's target was to assist Tunisia's efforts toward the maximum development of the country's water potential at the earliest possible date. The actual operations of this program entailed three phases:

1. Detailed hydraulic and geologic studies to assess the water potential.
2. Reconnaissance drilling to verify or alter the finding of 1. above.
3. The development of wells where water was found to determine the type of well most suitable, the capacity of such wells and the usefulness of the water.

The objective of this project was to establish the basis for water development, with the wells brought in during the exploratory process being of immediate value to the communities concerned by contributing to the well-being of the population and increasing agricultural production.

### Results

#### Project 089 A - Exploratory Drilling and Well Development

##### A. Southern Sector

1. Twenty-eight (28) exploratory drillings to a total depth of 11,000 meters.
2. Development of wells where merited by results of exploratory drillings.

##### B. Central Sector

1. Thirty-one (31) exploratory drillings to a total depth of 5,000 meters
2. Three well development operations where explorations had already been made.
3. Development of wells where merited by results of exploratory drillings.

C. Northeast and Northwest Sectors

1. Exploratory drillings at shallow depth.
2. Well development operations.
3. Underground water research in the area of Nabeul and Hammamet.

WELL DEVELOPMENT

<u>Site</u>	<u>Depth</u>	<u>Site</u>	<u>Depth</u>
Metouia 2	88m.	Sidi Bou Baker 2	300m.
Douz	75	Chorbane	716
Ahzereg	490	Henchir Chicha	173
Bies Kuriates	417	Draa Tamar	430
Bir Arboub	300	Henchir Green	250
Oued Sahil	300	Draa Tamar 2	500
Mellouleche	400	Rekada	300
Ben Gardens	500	Hababsa	300
Bou Ficha	300	Hababsa 2	700

EXPLORATORY DRILLINGS

<u>Site</u>	<u>Number of Drillings</u>	<u>Depth</u>	<u>Site</u>	<u>Number of Drillings</u>	<u>Depth</u>
Ras El Maa (Silliana)	4		Bou Lahneche	1	100m.
Bled Sisseb	2	300m.	Skhira	3	300
Chougafia	4	300m.	Bou Heima	4	500
	10	100	Bled Suegui	4	500
Kairouan	3	500	Gabes	5	200
Labaid (Sbeitla)	2	300	Mednine North	5	
Djilma (Sbeitla)	2	400	Maimata	4	300

Project 089 B

This project provided the financing for the drilling of forty-five wells for exploratory and/or productive purposes during a two-year period. The Service HER of the Secretariat of State for Agriculture was charged with this activity. The location of the drillings and purpose for which each was carried out are as follows:

<u>Area</u>	<u>Site</u>	<u>Purpose</u>
North	Hababsa No. 1	Hydro-geological test drilling for development of the Bled Habbabsa.
	Oued Harka	
	Oued Ziatine	Hydro-geological test drilling.

<u>Area</u>	<u>Site</u>	<u>Purpose</u>
	Plaine de Tadjerouina (Bou l'Ahneche)	Study of underground water resources of the Oued Sareth.
North	Bled Giteniche	Hydro-geological test drilling.
	Meknas	Drilling for demonstration purposes.
Cap Bon	Oued Chiba	Exploration dam.
	Vicinity of Naboul	Extension of the groundwater exploration of the Oued Sahel to the Oued Nanka and Oued Semaa.
	Oued Sahil 1	Production well for supplementary water supply.
	Oued Sahil 2	Production well for establishing an irrigation perimeter.
	S.H.B. 5	Supplementary water for the Bazirk perimeter.
	Plaine d'El Haouaria (10 drillings)	Irrigation of the El Haouaria Plain.
	Gromballia	Supplementary water supply for Gromballia.
	Bou Ficha	Water supply for the Military Camp at Bou Ficha and production well.
	Hammamet	Replacement of existing well.
Kairouan	Draa Tamar No. 2	Irrigation of the Draa Tamar Gardens.
	Chougafia	Three to four test drillings.
	Labaled	Prospecting of the South of Djebel Labaled.
Center	Mellouiche	Supplementary water supply.
	Sidi Bou Baker No. 2	Prospecting of the Oum El Kaob area.
	Sidi Ali Ben Aoun	Hydro-geological testing of production well.
	Bled El Hanla	Hydro-geological prospecting.

<u>Area</u>	<u>Site</u>	<u>Purpose</u>
	Ouled Asker	Drilling to find eventual underground water resources.
	Oued Leben (2 drillings)	Test drilling.
	Sidi Dahar (5 kms. west) of Sebkhah M <sup>e</sup> cheugig)	Test drilling.
	Bled Sagui de Gafsa	Deep test drilling.
	Ouled Mohamed	Development of dry farming in the Sidi Bou Zid Plain.
Sahel	Oued Dhiaf	Test drilling.
	Ain Ben Janet (Bou Merdes)	Test drilling.
South	Mezzret Youssef	Supplementary water for irrigation in the Zerkiné area.
	Ain Chichma	Production well.
	Chott Ali Ben Ahmed	Drilling for irrigation perimeters.

### Project 089 C

This part of the project provided for:

1. Development of 50 water sources.
2. Installation of new wells.
3. Restoration and construction of cisterns.

<u>Gouvernorat</u>	<u>Location</u>	<u>Nature of improvement</u>
Kasserine	Bir Othman Jaoua	Installation of new well
	Bir O. Dakla	Construction of new well
	Magen Henchir	Restoration of cistern
	Rhorbou	
	Magen O. Taieb	Construction of new cistern
	Bir Ezthene	Construction of well
	Bir Kenchir Elitla	Construction of well
Sousse	Bir Adjil	Cleaning, repairing and constructing water source
	Bir El Farfaria	Construction of new well
	Bir Hafia	Construction of new well

<u>Gouvernorat</u>	<u>Location</u>	<u>Nature of Improvement</u>
Kairouan	Bir Ouled Jolelba	Construction of new well
	Bir M'Seknine	Construction of new well
	Bir Elkhaloua	Construction of new well
	Bir Sidi Ellafi	Construction of new well
	Bir Ouled Ayar	Construction of new well
Sfax	Bir Saadoun	Construction of new well
	Bir Hr. Zaara	Cleaning and restoration of wall
	Bir Diar El Ouste	Repair of damaged well
	Bir Khemiga	Construction of new well
	Sidi Dahar	Construction of new well
Gafsa	Magon Fald	Construction of new well
	Citerne Ksar Rahal	Restoration of cistern
	Bir Ouled Falet	Construction of new well
	Driess	
	Mahagen O. Boumrane	Improvement and construction of cisterns
Gabes	Intagen Lalabia	Construction of cisterns
	Bir O. El Koucha	Construction of new well
	Bir O. Bou Yahia	Construction of new well
Mednine	Dehibet Toujane	(Dehibet Toujane) Construction of a cistern 150 m3 capacity
	Bir Sanhajia	Construction of new well
	Bir Kaar Cheguiga	Construction of new well
	Henchir Ramad	Construction of cistern

Project 089 D: Increase capacity of water flow of Bou Hafsa El Ouk waterline by 50 l/s by adding one well, increasing pipe sizes on 9 km. of line and construction of a reservoir.

Project 089 E: Purchase of drilling equipment, cement, steel and other supplies for construction of cisterns in five governorats in the south.

Review (1968)

The work carried out under these projects was found to be in satisfactory condition and utilized for the purposes intended.

Project No.: 664-12-170-090  
Project Title: Supplying Tree Watering Equipment  
Project Dates: 9/3/58 - 1/1/60  
Contribution: U.S. (Counterpart/Grant) \$235,000  
GOF (Dollar equiv.) \$33,400

Situation at Time Project Initiated

The GOF had decided on an extensive program of planting trees in the dry areas of the central and southern areas of the country in order to obtain some production from non-productive land. It had been found necessary, in order to insure survival of the young trees, to provide 50 liters of water to each tree five times a year for the first two years. The water had to be hauled to the planting sites from the water sources which were, in some cases, as much as 20 km. from the planting site.

Objective

The project called for counterpart financing of the purchase of equipment for transportation of water for plant watering purposes. As such it offered direct support to the GOF project of expanding planting of olive and fruit trees in the central and southern sectors for purposes of increasing production and supporting the reforestation component of an extensive soil conservation program.

Results

The following equipment was provided:

1. 9 trucks chassis with cab for installation of 5,000 liters tanks;
2. 9 5,000 liters tanks for mounting on trucks under item 1;
3. 9 truck tractors chassis with cab for pulling semi trailers;
4. 16 5,000 liters trailer-mounted tanks for use with item 3;
5. 9 agricultural tractors mounted on rubber wheels;
6. 16 3,000 liters trailer-mounted tanks for use with agricultural tractors under item 5;
7. 43 refill and discharge pumps.

Project No.: 664-11-120-092  
Project Title: Drainage of Sebkhia Fardjouma  
Project Dates: 11/25/58 - 12/31/59  
Contribution: U.S. (Counterpart/Grant) \$24,000  
GOT (Dollar equiv.) \$12,000

### Objective

To assist the Government of Tunisia in its program to improve agricultural production. This project, designed to provide drainage for about 500 ha. of farm land, was a community self-help activity whose execution, apart from its economic value, bolstered the community's overall activities.

### Location

Sebkhia Fardjouma, southwest of Kelibia on Cap Bon.

### Results

Extension of the main channel leading from the southwestern corner of the basin to the river,  
construction of a secondary system of drainage,  
replacement of a temporary culvert with a more adequate bridge.

The entire project involved approximately 25,000 m<sup>3</sup> excavation.

### Evaluation

Work on the project was initiated in 1959 and was satisfactorily completed the following year.

Project No.: 664-12-520-093

Project Title: Improving Water Supply for Domestic and Animal Use

Project Dates: 11/25/58 - 12/31/60

Contribution: U.S. (Counterpart/Grant) \$353,000

GOP (Dollar equiv.) \$357,000

Objective

To provide adequate water supply to twenty small towns previously without a firm source of water.

Results

Provision of pumping equipment to increase yield of small wells,  
extension of pipelines,  
construction of reservoirs.

Specifically, the following work was carried out under the auspices of this project:

Location

Description of Work

Regueb (approx. 85 km. from  
Sfar on road to Sidi Bouzid)

Provision of small motor pump, small wellhead  
reservoir, 6 km. of "eternit" conduit and a  
reservoir in the village.

Redeyef (west of Gabes near  
Algerian border)

A submersible pump to equip a deep well, a 3 km.  
"eternit" conduit and a water reservoir with a  
capacity of 250m<sup>3</sup>.

Tataouine (50 km. south of  
Medenine)

Pumping equipment, wellhead construction and 3 km.  
of "eternit" conduit.

Madjet El Bab  
Sloughia

Installation of 7 km. of concrete conduit,  
construction of 500 m<sup>3</sup> reservoir.

Ia Chebba (67 km. north  
of Sfar)

Construction of 700 meters of distribution system.

Location

Description of Work

Dechra  
(near Tabarka)

Connection with the water supply system of Tabarka by a 2 km. conduit & construction of a village fountain.

Rohia (19 km. north of  
Sbeitla)

Extension of Sbiba water pipeline to Rohia; provision of several outlets along the way.

Sousse & Suburbs

Replacement of 2½ km. of smaller pipeline with a 600 mm. concrete pipeline.

Skanes/Monastir

Provision of 3 km. pipeline to connect Skanes with the Monastir water supply system.

El Kantara (Djerba)

Pumping unit with 10 l/s capacity, 500 m<sup>3</sup> reservoir and 7 km. of distribution system.

Sakiet Sidi Youssef  
(west of Le Kef)

Reconstruction of the partially destroyed water system and installation of a pumping unit.

Sbikha

Setting up of a pumping station, reservoir and distribution fountain.

Beni Khalled  
(near Grombalia)

Establishment of 12 km. of concrete water conduit to take water from the supply system of Grombalia to Beni Khalled; outlets along the conduit will be provided.

Plaine de Kairouan  
(at Bled Messaoudia  
Sidi Ali Bou Salem  
Henchir Zitoun, Bled  
Shitha)

Construction of reservoirs and conduit lines to serve the village centers.

Evaluation

This project served the purpose of providing more adequate water supplies to a number of small and medium-size towns.

Review (November 1968)

The projects visited were found to be in good condition and being utilized for the purposes intended.

Project No.: 664-11-120-094  
Project Title: Equipment of Small Water Wells in  
Central and Southern Tunisia  
Project Dates: 11/28/58 - 12/31/61  
Contribution: U.S. (Counterpart/Grant) \$56,000  
GOT (Dollar equiv.) \$17,000

### Objective

To provide for well development and improvements at six locations in central and southern Tunisia. The major activities consisted of (a) the development of a distribution system for Sidi Aich through the construction of a 300 m<sup>3</sup> reservoir and 7 km. of aqueduct to feed four public water points and tank cart filling installations, and (b) repairs to put back into service a 2 km. aqueduct from Sbeitla well No. 2 to the village of Khanget Zazia and the construction of a central fountain for drawing water and the provision of tank cart filling installations.

### Location

- (a) Village of Sidi Aich (north of Gafsa).
- (b) Village of Khanget Zazia (southwest of Sbeitla).

### Results

Construction work was started in 1959 and completed in July 1960. On-site inspection was made by USAID engineer.

### Evaluation

Satisfactory.

### Review (November 1968)

The well at Sidi Aich is equipped with a pump and water is provided to the village through a public water point and three tank cart filling installations. Water distribution is adequate in winter; however there is a serious shortage during the dry season.

The water supply to the village of Khanget Zazia is satisfactory. There is a central public water point and several tank cart filling installations. The water flow is sufficient for the population needs.

Project No.: 664-11-120-095  
Project Title: Flood Control of the Bayech River  
Project Dates: 1/7/59 - 7/31/61  
Contribution: U.S. (Counterpart/Grant) \$48,000  
GOT (Dollar equiv.) \$36,000

### Objective

The objective of the project was to provide flood protection for the Gafsa-M'Dilla railroad and the Gafsa oasis. The work consisted of the construction of a stone riprap revetment to protect the banks of the Bayech River at Gafsa, a flood diversion structure and a new railroad bridge.

The Bayech River had caused serious damage to the Gafsa-M'Dilla railroad spur which serves the M'Dilla phosphate mines. During the winter of 1957, there was also extensive damage to the Gafsa oasis and railroad traffic on the Gafsa-M'Dilla spur was interrupted for three months causing a loss of 172,000 dinars in phosphate shipments. In addition, the GOT was obliged to furnish flood relief in the amount of 10,000 dinars and repair costs totalled some 12,500 dinars. The phosphate industry is one of the major foreign exchange earners for Tunisia and is the principal employer in this region of southern Tunisia. It was, therefore, essential that every effort be made to assure maximum production without interruption.

### Location

Between Gafsa and M'Dilla phosphate mine.

### Results

The work began in October 1958 and was completed in December 1959.

### Evaluation

Work was satisfactory. Report sent to AID/W on December 9, 1959.

### Review (November 1968)

The Gafsa-M'Dilla railroad bridge and its water diversion structure are in good condition. The revetment to protect the banks of the Qued Bayech is well maintained and flood protection here is no longer a problem.

Project No.: 664-11-520-096  
Project Title: Improving the Water Supply of Djedeida  
Project Dates: 11/25/58 - 7/31/61  
Contribution: U.S. (Counterpart/Grant) \$95,000  
GOF (Dollar equiv.) \$95,000

Objective

Vegetable canning, particularly tomatoes, from the recently irrigated areas of the Medjerda valley is an important small industry which is expected to grow as the production of more canning crops is made possible by irrigation. The target of the project was to increase substantially the water supply to the village of Djedeida in the heart of the valley as a means of promoting industrial and agricultural development.

Location

Djedeida lies about 24 km. west of Tunis.

Results

Extension of a branch water conduit from the Oued Ellil - Tunis aqueduct to the village of Djedeida increased the water supply to Djedeida by up to 300 m<sup>3</sup> per day and in addition provided water to the village of Oued Ellil which is in the path of the conduit.

Project No.: 664-12-120-097

Project Title: Exploration of Underground  
Water Resources

Project Dates: 11/25/58 - 12/31/61

Contribution: U.S. (Counterpart/Grant) \$310,000  
GOT (Dollar equiv ) \$251,000

### Objective

In the more arid sectors of southern Tunisia, rainfall alone is not adequate to permit the development of a sedentary agriculture except on the scattered oases areas. The population in such areas lead a semi-nomadic existence based principally upon livestock. The exploration of underground water, which was the objective of this project, was designed to provide a means of creating artificial oases where a sufficient level of agricultural production could be assured to permit the settling of these semi-nomadic people.

### Location

Oudref, Metouia, Bouchema, Rhenouche, Kettane, Zerig Barania, Zarhine, Arram, Zarath, El Hamma Ksar, El Hamma Mzira, Bir Rebayat CF, and Bir Rebayat CF2, all in the Governorat of Gabes.

### Results

This project was designed to develop and improve water distribution facilities at some sites covering 1,250 ha.. The work consisted of improving old and constructing new wellhead installations for diversion of water, improvements in and additions to existing distribution systems and the installation of new distribution systems. Land development through clearing, leveling and subsoiling for better drainage was carried out, as was the establishment of nurseries to provide planting stock for the newly developed areas. Wind-breaks and sand stabilization structures were provided to protect the developed areas. The project involved work at 13 centers having a total of 15 artesian or near-artesian wells. The project sites were inspected by the USAID water resources engineer in 1961. At that time, all of the well and pump improvements and about 90% of the irrigation system improvements had been completed. The GOT reported on November 8, 1961, that all work had been completed.

Evaluation and Review (November 1968)

The facilities were in satisfactory condition and being utilized for the purposes intended.

Project No.: 664-12-120-098

Project Title: Irrigation of the Sbiba Region

Project Dates: 5/9/58 - 12/31/63

Contribution: U. S. (Counterpart/Grant) \$1,404,000

GOT (Dollar equiv.) \$1,536,000

### Objective

Construction of diversion dam, irrigation distribution system and land preparation of 1,600 ha. in support of Tunisia's agricultural development.

### Location

Sbiba is located some 50 km. north of Sbeitla on road M.C. 71. The project lies on both sides of the Sbeitla - Le Kef road as one approaches Sbiba from the south.

### Results

The diversion dam and main canals were completed in 1963 and the full irrigation system was completed in 1965. Two service cooperatives with 215 members were established in 1965 and 1966. The cooperatives are still expanding plantings in the irrigated areas; there are 250 ha. apricots, apples, pears and olives, with most of the remaining land used for forage and vegetable crops.

### Evaluation and Review (November 1968)

This 1,600 ha. irrigation development is in excellent condition and functioning as planned. The water diverted by the diversion dam and supplied by 7 wells gives the perimeter 360 l/s. The water contains between 1.0 and 1.5 grams of salt per liter. The project has 140 km. of lined irrigation canals. There are 2 reservoirs, one of 6,000 liters and one of 7,000 liters.

Project No.: 664-12-120-099

Project Title: Menzel Bou Zelfa Irrigation Project

Project Dates: 5/9/58 - 12/31/61

Contribution: U.S. (Counterpart/Grant) \$1,643,000

GOT (Dollar equiv.) \$1,284,000

Objective

This project provided financing for the construction of a water storage reservoir and water wells to supplement the water available for 1,300 ha. already being irrigated and an additional 500 ha. to be irrigated.

Location

Menzel Bou Zelfa area (Cap Bon).

Results

This project was started in 1958 and was completed at end of CY 1961. It was frequently visited by USAID engineers during construction and upon completion.

Review (Summer 1968)

The reservoir and wells are in satisfactory condition and being utilized for the purposes intended.

Project No.: 664-12-120-101  
Project Title: Drainage of the Soliman Plain  
Project Dates: 12/4/58 - 12/31/61  
Contribution: U.S. (Counterpart/Grant) \$476,000  
GOT (Dollar equiv.) \$558,000

### Objective

This project is part of a broad drainage program covering 15 streams on lower Cap Bon. This sub-project provides for extending the primary canal to the village of Belli, the construction of 5 secondary canals, the construction of a bridge over the Qued El Bey on the main Tunis-Soliman Highway and several smaller bridges, plus related work. It is designed to provide more rapid evacuation of flood waters on the Soliman Plain between Soliman and Belli and to provide some relief from floods for Grombalia and Nianou and to drain approx. 500 ha. for agricultural development.

### Location

Soliman area, Cap Bon.

### Results

The work was started in 1958 and the USAID Water Resource Engineer reported the work as completed in November 1961.

### Evaluation

The drainage system is functioning satisfactorily.

### Review (Summer 1968)

All drains, bridges and other structures in this area in good condition.

Project No.: 664-11-120-102

Project Title: Improvement of Irrigation Facilities  
of the Presqu'île of Kebili

Project Dates: 12/10/58 - 12/31/60

Contribution: U.S. (Counterpart/Grant) \$71,000  
GOT (Dollar equiv.) \$67,000

### Objective

Water supply improvement in the Kebili region in southern Tunisia. Work consisted of replacing of about 9 km. of earth canals with concrete canals to reduce seepage loss and installing spring head control valves to regulate flow. Water to be used to irrigate 34,000 olive trees and about 300,000 date palm trees.

### Location

Kebili region in southern Tunisia.

### Results

Project visited by USAID technicians in 1959, 1960 and 1961. All work was completed in 1961 and functioning satisfactorily.

### Evaluation

According to the GOT, at least 20% more production was obtained by this project and as such was well worthwhile.

### Review (September 1968)

This project was visited and observed to be in good operating condition.

Project No.: 664-12-120-103  
Project Title: Development of Small Water Sources  
Project Dates: 12/20/58 - 12/31/60  
Contribution: U.S. (Counterpart/Grant) \$245,000  
GOT (Dollar equiv.) \$386,000

#### Situation at Time Project Initiated

In practically all areas of Tunisia during the dry season, and in the southern and central sectors during the greater part of the year, there is a need for small sources of water for domestic and animal use, as well as for irrigation of small areas under vegetables and other crops.

In its attempt to settle its nomadic and landless people, the GOT has undertaken an extensive water resources development program which embraced not only the development of major water sources for large scale irrigation and other uses, but also the development of many minor sources as well. In areas where water is scarce much of the time, almost any water source, however insignificant, was considered worthy of development.

#### Objective

This project provided U.S. financial support to the GOT program to develop small water resources in areas of acute need.

#### Results

Approximately 120 small water sources (mostly hand-dug wells, but occasionally springs) were developed in selected areas of the country. This included the procurement of certain equipment, such as winches, tripods, etc.. The average daily output of such wells is approximately 30 m<sup>3</sup> each. The areas selected for this development program were in the following Gouvernorats: Bsja, Bizerte, Cap Bon, Le Kef, Souk el Arba, Tunis, Kairouan, Sousse, Sbeitla, Gafsa, Sfax, Gabes, Tozeur and Medenine. This work was started in 1958 and was satisfactorily completed by July 1960.

Project No.: 664-32-490-104 A & B

Project Title: Economic Development Through Work Relief

Project Dates: 12/59 - 10/60

Contributions: U.S. (TC/DG) \$ 60,000  
(Counterpart/Grant) 3,733,000

Objective

1. To assist the program of economic development by work relief projects in addition to the U.S. commodity deliveries for the payment of wages in kind under Title II, PL 480.
2. To provide work clothing for the relief workers; to assist the GOF in hiring supervisory personnel for the work relief projects and in the purchase and rental of equipment and materials used on the works projects.

Results and Evaluation

Sixty thousand dollars were used for the purchase of U.S. surplus stocks of mattresses, covers and sweaters for work clothing for the relief workers and vehicles for supervisory personnel. The GOF fabricated mattress covers into clothing at its own expense. The counterpart project used local currency to assist the GOF in hiring supervisory personnel for the work relief projects and to purchase and rent equipment and materials used on the works projects.

The project objectives were met and the project satisfactorily completed.

Project No.: 664-12-120-105  
Project Title: La Soukra Irrigation  
Project Dates: 2/6/59 - 7/31/62  
Contribution: U.S. (Counterpart/Grant) \$614,000  
GOF (Dollar equiv.) \$461,000

### Objective

The La Soukra irrigation development involves about 500 ha. of land. Water for the irrigation is obtained from (a) the City of Tunis sewage plant and (b) from fresh rain water stored in the hills of Ariana behind a small dam. Water from these two sources is mixed until a suitable water quality has been obtained. The irrigated land is devoted to vegetable and fruit production.

### Location

La Soukra area, Tunis.

### Results

This is a project of the O.M.V.V.M.. An AID technician made the land classification of the area to be irrigated and also inspected the physical plant designed to mix the water from the two sources mentioned above. The pumps, water mixing tank and pipelines from the Tunis sewage plant to the mixing tank were installed.

### Evaluation

The project presented many technical problems. The most difficult problem was to obtain the correct water quality in the water mixing process, which was further aggravated by the fluctuation in the quality of the sewage water. Occasional leaks in the sewage line between Tunis and the sewage plant allowed salt-laden groundwater to enter the sewage lines. Also, the supply of fresh water in the Ariana hills posed certain problems, for this supply can vary from year to year, depending as it does on the amount of rainfall.

### Review (November 1968)

Dam in satisfactory condition. 500,000 m<sup>3</sup>/month are being made available to the La Soukra irrigation project. The project is being utilized for the purpose intended.

Project No.: 664-11-225-106  
Project Title: Extension of Tunis - La Marsa  
Telephone Lines  
Project Dates: 1/22/59 - 12/31/59  
Contributions: U.S. (Counterpart/Grant) \$60,000  
GOE (Dollar equiv.) \$16,000

Objective

The development of the northern suburbs of Tunis which had occurred when this project was undertaken had resulted in a serious overloading of the then existing telephone facilities. This situation was causing delays in important communications. The purpose of this project was to provide the additional telephone circuits necessary for enlarged communication facilities sufficient to meet increased current needs as well as expanded future requirements resulting from the further development of the area.

Location

Tunis - La Marsa.

Results

Extension of the unused 28 quarts of the cable installed in 1956 from El Aquina to La Marsa via Khereddine. Installation of a 7 quarts cable between Sidi Daoud and La Marsa to bring the Tunis - La Marsa line to 26 quarts. The above changes, completed in March 1960, increased the number of lines between Tunis and the northern suburbs by 35 quarts.

Evaluation

The establishment of adequate telephone facilities for the La Marsa area where key government, industrial and diplomatic personnel reside, permitted the continuing expansion of this region.

Review (November 1968)

All facilities in satisfactory condition and being utilized.

Project No.: 664-I1-220-107

Project Title: Three Hydro-Electric Surveys

Project Dates: 2/5/59 - 4/30/60

Contribution: U.S. (Counterpart/Grant) \$21,000

### Objective

The purpose of this project was to assist the Tunisian Government by providing technical services needed in connection with projects for the construction of irrigation and hydro-electric dams at Oued Nebaana, Oued Bou Heurtna and Oued Sidi-Salem.

The technical services were to be provided for the purpose of studying the technical, economic and financial feasibility of the contemplated projects.

### Results

Only one of the three original sites and proposals, Oued Nebaana, was actually studied under this project. This study led to the signature of an agreement in October 1960 between the United States and the GCT under which the US loaned to the GCT up to \$18,000,000 for the construction of the Oued Nebaana Dam. This dam and irrigation complex is designed to develop approximately 37 million cubic meters of water annually. It will have a distribution system to bring irrigation water to some 13,000 acres of arable land which previously was marginal due to the uncertainty of adequate rainfall.

### Evaluation

This project provided the basic data upon which a subsequent decision to proceed with the Oued Nebaana loan was made. From this point of view it accomplished the original intent.

Project No.: 664-12-120-108

Project Title: Bardo Flood Control

Project Dates: 12/23/58 - 9/30/61

Contribution: U.S. (Counterpart/Grant) \$195,000

GOT (Dollar equiv.) \$188,000

Situation at Time Project Initiated

The Oued Menez which arises in the hills to the northwest of Tunis flows only during rainy periods. In the flat areas of Tunis, the suburban areas of Bardo and Franceville, there were no well-marked channels; the water used to spread out and empty into the city drainage system. This system could not take care of the amounts of water which would come down this stream after heavy rains and consequently the Franceville and Bardo areas were frequently inundated and much silt and mud was deposited in the streets. Clearing of this mud and silt and the more serious problem of the damage to the asphalted streets, other public installations, as well as private property, presented a serious problem to the city and required an outlay of considerable sums of what were essentially non-productive expenditures each year.

Objective

This project was designed to prevent this periodic flooding by constructing a system of drainage canals which would carry the excess water away from the area.

Results

The work involved the construction of a weep dam (with concrete overflow and desilting gates) to retard the flow of the Oued Menez before it reaches the city. It also provided for a diversion (with bridges and culverts) to divert the excess water around the built-up areas and into Lake Sedjoui. The diversion canal involved excavation of 55,000m<sup>3</sup> plus the construction of bridges and culverts.

Review (November 1968)

The system is performing satisfactorily.

Project No.: 664-11-690-109

Project Title: Montfleury School Dormitory Project

Project Dates: 1/22/59 - 12/31/59

Contribution: U.S. (Counterpart/Grant) \$ 36,000

GOT (Dollar equiv.) \$ 44,000

### Objective

The purpose of this project was to assist the GOT in completing the conversion of a villa that had been donated by President Bourguiba into a dormitory for girl students by making counterpart funds available to the Ministry of Education.

### Location

Le Foyer des Etudiantes - Montfleury, Tunis.

### Results

The rehabilitation of the building, including remodeling, installation of heating and sanitary facilities, was completed as scheduled.

### Review (October 1968)

The "Foyer des Etudiantes," located at 35, rue de la Manoubia, Montfleury Supérieur, Tunis, is now called "Dormitory No. 7" of the Ecole Normale des Professeurs Adjoints (ENPA). It was used to house ENPA female students until academic year 1964-65, but now houses 64 male students of the "Section Préparatoire" and 20 "surveillants." The ENPA girl students' hostel has been transferred to Le Bardo. Despite the change of occupants some six years after the completion of the project, it can be considered to have met its objectives.

Project No.: 664-11-120-110  
Project Title: Acquisition of Hydraulic Equipment  
Project Dates: 12/58 - 3/61  
Contribution: U.S. (TC/DG) \$71,000

Objective

To assist the GOF in the purchase of hydraulic equipment in their program to provide water for domestic livestock and irrigation for the drier areas of Central and Southern Tunisia.

Results and Evaluation

Hydraulic equipment was purchased as follows:

- 15 deep well pumps with diesel engines
- 11 diesel engines for pumps already on hand
- 4 centrifugal pumps with tubes and cable for cleaning, deepening, widening or other corrective operations to the wells.

The objectives of this project were met and the project is considered satisfactorily completed.

Project No.: 664-11-520-111

Project Title: Improvement of Monastir Water Supply

Project Dates: 1/28/59 - 9/30/60

Contribution: U.S. (Counterpart/Grant) \$71,000

GOT (Dollar equiv.) \$41,000

### Objective

To construct a 1600 m<sup>3</sup> supplemental reservoir built on higher ground than original reservoir, a conduit connecting this reservoir to the main supply aqueduct, a pumping unit and additions to the distribution system to supply new or inadequately served areas.

### Results

Work started in 1959 and was completed in April 1960.

### Evaluation

The project was essential to provide water to unserved and new sections of Monastir.

### Review (November 1968)

All work completed as described above. The system is in satisfactory condition and being utilized for purpose intended.

Project No.: 664-15-280-112

Project Title: Partial Experience for Engineering Graduates

Project Dates: 6/59 - 1/60

Contribution: U.S. (TC/DE) \$10,000

GCF (Dollar equiv.) \$ 2,000

### Objective

The objective of this project, as originally conceived, was to provide practical experience to engineering graduates through participant training in the U.S. Subsequently, the scope was enlarged to provide third country training for a group of eight vocational school instructors.

### Results

Although the original PIC/P listed six engineering graduates, only two went to the U.S. for practical work experience. Both returned to Tunisia and worked in their special field for a time. They have left Tunisia.

A group of eight vocational training center instructors spent 10 weeks in Belgium working in their own specialities (with the exception of one who returned before the end of his program due to illness).

### Evaluation

While the training of vocational center instructors was generally successful, the short period of training involved, and the fact that only two graduate engineers were sent for training to the U.S. make this project only partially successful.

Project No.: 664-12-220-113  
Project Title: Electrification Program for Six Areas  
in Tunisia  
Project Dates: 2/17/59 - 12/31/59  
Contribution: U.S. (Counterpart/Grant) \$344,000  
GOF (Dollar equiv.) \$167,000

Objective

The purpose of this project was the extension of electric distribution lines to six population centers where there existed a potential for improving the standard of living of the local population and thereby improving their productivity.

Location

Gafsa and Djerid, Djerba, Tataouine, Teboulben, Djebel Abiod, Ksour (Ksar).

Results

Electric distribution lines were extended to each of the above six population centers.

Evaluation

This electrification project represented a significant economic, cultural and social development in the six urban centers that now enjoy the manifold benefits of electric power. As a result, the productivity of the local population rose and with it its contribution to Tunisia's total developmental effort.

Project No.: 664-11-120-114

Project Title: Flood Control for the Village of El Djem

Project Dates: 3/3/59 - 9/30/60

Contribution: U.S (Counterpart/Grant) \$21,000

GOT (Dollar equiv.) \$21,000

Objective

Construction of 1,100m canal and culverts around the western side of El Djem, to collect and discharge the water into the natural drainage area beyond the village.

Location

El Djem area.

Results

The work was started in 1959 and was completed in March 1961.

Evaluation

Satisfactory.

Review (November 1968)

Canal and culverts in good condition. Good protection for El Djem.

Project No.: 664-12-170-115 A to G  
Project Title: Reforestation of Selected Areas  
Project Dates: 6/28/60 - 6/19/63  
Contribution: U.S. (Counterpart/Grant) \$1,840,000  
(TC/DG) 28,000  
GOT (Dollar equiv.) \$2,820,000

Objective

To assist the Forestry Service in tree nursery culture, the improvement of nursery stock and in other ways.

Local currency was to support works, including the reforesting of 6,750 ha. which were specifically designated as follows:

3,000 ha. (Rades, Mogods, Mateur, Tabarka, Zaghouan and Hammamet)  
400 ha. (Djebel Djacuada)  
1,000 ha. (Kessera)  
250 ha. (Djebel Zaghouan)  
2,100 ha. (Djebel Et Tell)

Additional work not indicated in the projects by hectares, was to be carried out in the following areas:

Djebel Hammamet  
Oued Mellegue  
Djebel Baoula (northwest of Mateur)  
Djebel Djacuada  
Oued El Kebir (near Tabarka)  
Djebel Mansour  
Djebel Bent Saidane  
El Aroussa, Teboursouk and Testour

There was another work plan for 14,113 ha. in 17 selected areas in 13 Gouvernorats.

The work planned included forest roads to be cut by bulldozers, hand built tabias, the replanting of grasslands and forest areas and the promotion of natural vegetative rehabilitation through protection by fences, guards and small soil conservation structures.

The attached compilation represents an effort to provide a brief summary and evaluation of all projects initiated and completed by USAID (and its predecessor agencies) in Tunisia between 1957 and 1968. Every effort has been made to describe as accurately as possible the various projects undertaken during this period on the basis of the files currently available at USAID/Tunisia.

In most cases, the information provided under "Evaluation" is based on reports prepared at the time of the projects' completion or in 1966, when the initial effort was undertaken to prepare a comprehensive listing of all completed projects. Comments under the "Review" section are based on actual site visits or meetings with appropriate GOV officials during the latter part of CY 1968.

FRM/GSchwab/eaj  
March 1969

## Results

The Forestry Adviser (U.S.) contributed to the project, particularly in regard to providing technical data on tree nursery culture to improve seedling stock and in-service training of foresters. He also was team leader for five Tunisian foresters on participant training in Spain. The chief GOT forester spent about three months in the U.S. in 1961, studying U.S. forestry management methods.

During FY-1962, Mr. Augustin Soriano, an esparto grass expert from Spain, spent four months under this activity studying management and cultural problems and supplied the GOT with a report dated June 26, 1962, giving specific recommendations on plant research, management, tillage and controlled harvesting.

The goals listed under "Objective" above were accomplished.

## Evaluation

By the end of CY 61, about 14,000 ha. of land had been reforested.

Since that time practically all of the defined 20,863 ha. have been planted. It has been estimated that the work done on those areas averaged about 50 Dinars per ha. (6,750 ha. at 355,201 D).

During 1964 and 1965, many of the areas aided by this project were visited. It was found that the areas were developing well; a great deal of good has been done in the project areas.

In some cases the work was slowed down because of social, economic and physical problems (i.e., Qued El Kebir near Tabarka, Djebel Mansour and Djebel Bent Saidane).

The areas assisted by this project contain forest roads cut by bulldozers, hand-built tabias and well protected forest areas planted with eucalyptus and Aleppo pines. The areas have been protected to permit the natural regeneration of alfa grass and other vegetative cover through the use of fencing and guards.

Project No.: 664-11-120-116  
Project Title: Soil Surveys of Selected Areas  
Project Dates: 3/16/59 - 12/31/60  
Contributions: U.S. (Counterpart/Grant) \$95,000  
GOT (Dollar equiv.) \$89,000

### Objective

This project was designed to support the GOT's extensive program for agricultural improvement. This program included the development of irrigation from surface water and from wells, drainage, assistance to farmers in planting fruit trees etc.

In order to effectively plan such land improvement programs, it was necessary to make surveys of soil resources in relation to proposed utilization and development. Up to the time this project was initiated, some 1,280,000 ha. out of a total of 4,500,000 ha. had been surveyed to some degree; in many cases the surveys were simply of a reconnaissance nature to determine the areas that merited more detailed surveys.

### Results

The project provided assistance for carrying out soil surveys of approximately 255,000 ha. of land in areas being studied for possible land development activities. 200,000 ha. were subject to reconnaissance surveys, while the surveys of the other 55,000 ha. were more detailed. The project also provided for commodities such as cost of transportation, laboratory, photographic and cartographic equipment, blue print machine etc.

Soil surveys were conducted in the following areas:

<u>Bizerte</u>	Survey of southern and eastern areas of the lake. Lands at west side of the road between Aoudja and Ras El Djebel.
<u>Cap Bon</u>	Western coastal area of north Cap Bon at Dar Chichou hills, Oued Chiba, Dar Melloul.
<u>Beja</u>	Tarch Fechna (Eou Arada river).
<u>Tabarka</u>	Valley of Ain Drahan and plain of Tabar.
<u>Tunis</u>	Moghrane School.

Sousse Cherichera river - Melah river.  
Enfidaville Lands purchased from Enfida Domaine, conduits of Nebhana grounds.  
Le Kef Ternada, Kalaat Djerda.  
Sbeitla Feriana, Hadjeb El Aicun No. 7, Rohia.  
Sidi Bou Zid Sidi Seyeh, Ouled Jelal, Gamouda East, Djilma, Regueb.  
Gafsa Oum El Kseb, little rivers, Seldja Oasis.  
Sfax Boua Farm, Dazinville.  
Medenine Ben Gardane, Nefzacus South.  
Kairouan Sidi Amor Ben Hadjla.  
Gabes El Hamma Bechrine.

Project No.: 664-12-590-117  
Project Title: National Blood Bank  
Project Dates: 4/17/59 - 12/31/62  
Contribution: U.S. (Counterpart/Grant) \$24,000  
GOT (Dollar equiv.) \$88,000

### Objective

The purpose of this project was to assist the GOT in the establishment of a National Blood Bank. Several of the larger hospitals had their own private blood banks, but these did not constitute a really satisfactory or efficient response to the country's need for this service. The individual banks often found themselves desperately lacking in certain types of blood, which others had on occasion in quantities excess to their needs. Lack of coordination resulted in ignorance of availabilities with consequent inefficient and wasteful results.

### Location

Hôpital Aziza Othmana (Ex-Hôpital Sadiki), Tunis.

### Results

A National Blood Bank was created, constituting a central authority and coordination point for all blood bank activities. These activities were expanded to include nation wide government-sponsored blood donation campaigns. The new bank was set up at the Aziza Othmana Hospital.

### Evaluation

The creation of the National Blood Bank has resulted in a greatly improved and more effective service. The needs of the various users can now be responded to rapidly and the possibilities of spoilage are reduced. In addition, the blood donation campaigns under the sponsorship of the Government have resulted in a significantly increased popular response to the country's need for blood. In general, the project constituted a significant upgrading of Tunisia's medical structure.

Review (November 1968)

The Blood Bank is now part of the Hematological Service located at the Hospital Sadiki. It is interesting to note that this rather complete, well equipped and well functioning unit was built around the blood bank over the past two years.

The Blood Bank has been greatly expanded since its inception in 1961. All equipment is being fully utilized. For instance, in October 1968, 1,174 bottles of blood were collected and 1,059 bottles distributed to 15 hospitals country-wide.

All in all, a very successful project.

Note: - USAID/T. Audit Report 58-62 applies to this project.

Project No.: 654 12-120-118

Project Title: Development of Enfidaville Domaine

Project Dates: 4/21/59 - 12/31/62

Contribution: U.S. (Counterpart/Grant) \$2,301,000

GCX (Dollar equiv.) \$1,199,000

### Objective

This counterpart project provided direct funds for the development of 36 000 ha. of public land. The work involved topographic, hydraulic and soil surveys, development of springs and public water services, land improvement and irrigation. It continued work originally started in 1955.

### Results

1. Basic studies of land use
2. Clearing and leveling - 7,800 ha.
3. Soil conservation works - 15,500 ha.
4. Planting of fruit and olive trees - 8,000 ha.
5. Construction of five small dams to irrigate 650 ha.
6. Drilled wells to irrigate 100 ha.
7. Range improvement - 10,140 ha.
8. Tree planting for windbreaks - 2,650 ha.
9. Construction of 850 houses.
10. Provided equipment for land clearing, soil conservation structures

### Evaluation

The USAID technicians who made periodic inspections reported satisfactory progress and quality of the work, with many "USOM" ideas incorporated, such as in the application of fertilizers, stubble mulching, and selection of cereals.

### Review (October 1968)

The Enfida Domaine initially became the "Office d'Enfida". Early in 1968, the 36,000 ha. were divided into 17 cooperatives having 3,390 members, and organized

into "l'Union Locale des Cooperatives de l'Enfida".

Development work in this area has continued and the planting of fruit and olive trees is nearly completed. The area appears to be farmed in accordance with modern practices and is meeting the objectives for which the project was designed. Flood irrigation structures are intact and functioning. Wells and irrigation perimeters are operating; housing units appear to be holding up well.

Project No.: 664-12-120-119

Project Title: Development of Private Wells and Cisterns

Project Dates: 3/15/59 - 12/31/60

Contributions: U.S. (Counterpart/Grant) \$167,000

GOF (Dollar equiv.) \$167,000

Objective

To assist in the financing by private individuals in 60 communities of about 300 small wells and 300 cisterns with an estimated total capacity of about 60,000 m<sup>3</sup>. The GOF contributed about 20 to 30% of the total cost of the project.

Results and Evaluation

During FY 58-59-60 a total of 536 wells were rehabilitated and 387 cisterns constructed so the results considerably exceeded the planned program. The USAID engineers rating as "satisfactory."

Project No.: 664-11-170-120

Project Title: Expansion of Forest Nurseries

Project Dates: 5/20/59 - 7/31/60

Contribution: U.S. (Counterpart/Grant) \$262,000

GCF (Dollar equiv.) \$206,000

Objective

Reforestation was a major need in Tunisia to provide more wood and timber, soil protection from erosion, water conservation and flood control, and protection of irrigation and water-impounding structures from silting and contamination. This project provided for the establishment of new and the enlargement and improvement of existing facilities of 23 forest nursery centers. The object was to increase the existing nursery annual capacity of 8,200,000 potted seedlings and 2,070,000 trees to 15,000,000 seedlings, sufficient to provide the necessary planting stock for the GCF program for reforesting approximately 15,000 ha. each year. This capacity was also adequate to provide the approximately 2,000,000 trees that were expected to be required by private land owners in developing windbreaks and other reforested areas on their land.

Results

The project was carried through as planned.

Review (October 1968)

The nurseries are in excellent condition and well cared for. The production of tree seedling has been greatly increased over the projected production in 1961. The forest service has increased the number of forest nurseries from 23 to 66 in 1967/68. Production of seedlings has increased to 39.7 million in 1967/68.

<u>Location of Nurseries</u>	<u>Projected Seedling Production (1960)</u>	<u>Seedling Production 1967/1968</u>
<u>Vicinity of Ain Draham</u>		
Ain Draham	50,000	?
Ain Hamaria	150,000	340,000

Vicinity of Bizerte

Oued Sedjrane	300,000	1,160,200
Tamera	300,000	2,047,000

Vicinity of Le Ker

Oued Mallegue	1,200,000	1,418,000
Siliana	300,000	472,000
Barnoussa	300,000	413,000

Vicinity of Teboursouk

Ain Djemala	100,000	1,709,000
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Vicinity of Zaghouan

Ousseltia	150,000	423,850
Ain Karma	400,000	?
Bir Chebik	30,000	?
Office de l'Enfida	200,000	273,000

Vicinity of Gafsa

Gabes	200,000	627,500
Ain Tounine	60,000	188,000
Sidi Bou Zid	100,000	?
Tozeur	10,000	146,000
Nefta	10,000	?
Medenine	50,000	257,000
Maknassy	20,000	122,100
Sfax	200,000	637,000
Kasserine	200,000	2,065,000

Vicinity of Hammamet

Monastir	200,000	935,000
Ain Tebornok	200,000	500,000

1967/68 66 nurseries  
39.7 million seedlings produced  
25.9 million pines and cypress  
13.8 million eucalyptus and acacias.

Project No.: 664-11-120-121

Project Title: Medjerda Valley Development

Project Dates: 3/25/59 - 6/30/68 <sup>1/</sup>

<u>Contribution:</u>	U.S. (TC/DG - SA)	\$ 221,000
	(Counterpart/Loan-Grant)	2,200,000
	GOT (Dollar equiv.)	\$12,000,000

### Objective

The purpose of this project was to assist the GOT in the detailed classification of 60,000 ha. of irrigable land as an essential requirement for the successful development of the Lower Medjerda Valley. It was also to provide the training necessary to establish land and soils analysis capability within the Medjerda Valley Authority (O.M.V.V.M.).

### Results

During the period covered by this project, the following developmental activities were accomplished:

1. Development of a 250 ha. pilot project at El Habibia, including land development work (leveling, sub-soiling, drainage, irrigation system, wind breaks, planting tree crops), village development and administrative center building (including school, dispensary, electrification, roads, small farm housing, etc.) and such miscellaneous types of assistance as topographic surveys, land partitioning, advances to individual farmers for first year operations, etc..
2. Approximately 13<sup>1</sup>/<sub>2</sub> man-years of technical services were provided by U.S. direct-hire technicians. This included 2 years of service by an irrigation agronomist, 11 years by land classification specialists and one-half year of IDI services by other specialists.
3. During the life of the project, the U.S. technicians made detailed surveys of 63,000 ha. of irrigated sectors, 50000ha. of dry land sectors, and 100,000 ha. of reconnaissance surveys.
4. U.S. technicians helped to develop salinity control methods to prevent the build-up of excessive amounts of salinity in the irrigated lands.

<sup>1/</sup> Project completed except for participant training component.

5. Aside from the extensive on-the-job training provided by the U.S. technicians, twelve Tunisians received or are receiving participant training under the project: 5 went to Egypt to study salinity problems, 3 to the U.S. for the same purpose, 2 others received short-term grants to observe irrigation practices, while 2 are currently receiving degree training in the U.S. in soil science.

### Evaluation

The U.S. objectives of helping the OMVVM to determine land types, their capabilities, limitations, problems and possibilities have been met. Tunisia has been able to increase its capacity to produce food by defining those areas which are suitable for irrigated agriculture and those which should remain dryland cultures. This determination incorporates an evaluation of development costs, production costs and production capacity in arriving at the most economic form of development for specific areas. The success of the more than 5,000 farm families resettled on lands surveyed and classified by U.S. methods is ample indication of their value.

The GOT is considering the adoption of a modified U.S. soil and land classification system for land development programs throughout the country. This should be possible upon the return of the two participants currently studying in the United States.

On the negative side, the termination of this project was delayed by one to two years due to the lack of qualified counterparts and the late designation of participants for academic training in the United States. There will be a gap of three years between the departure of the last American technician and the return of the trained Tunisians, during which time the soil classification work will of necessity be in the hands of one sub-professional Tunisian.

Project No.: 664-11-225-122  
Project Title: Improvement of Regional Telephone Networks  
Project Dates: 3/23/59 - 5/1/60  
Contribution: U.S. (Counterpart/Grant) \$95,000  
GOF (Dollar equiv.) \$63,000

### Objective

The improvement of the Tunisian telephone network is an integral and necessary part of the overall development of the country. This project provided for a modest extension and improvement of telephone communications in three areas and the establishment of 14 telephone booths in seven gouvernorats.

### Results

The project was composed of the following parts:

1. The completion of telephone connections between Sousse and Sbeitla. During 1957/58, connection was made between Sidi El Hani and Hadjeb El Ayoun, a distance of 84 km. This project provided for a connection between Sousse and Sidi El Hani (39 km.) from one side, and Hadjeb El Ayoun and Sbeitla (42 km.) from the other side, thus completing the connection between Sousse and Sbeitla.
2. The completion of the connection between Mednine and Zarzis. During 1957/58 a total of 24 km. was constructed, leaving 36 km. to be completed in order to connect Mednine with Zarzis. Completion of this extension provided communication between Mednine and Zarzis, as well as Djerba.
3. The improvement of equipment in the Zaghwan network which was insufficient to handle the existing traffic. The existing associated subscriber system was replaced with an auto-rural system, thus permitting more subscribers and providing better and more direct service.
4. The construction of 14 booths in a number of isolated areas situated in 7 different gouvernorats as follows:- 3 in Sousse, 2 in Mednine, 1 in Sfax, 2 in Cap Bon, 3 in La Kef, 1 in Beja and 2 in Bizerte.

The projected improvements were completed in 1960.

### Review (November 1968)

All telephone connections are in good condition and meeting required needs.

Project No.: 664-11-660-123  
Project Title: Teacher Training  
Project Dates: 4/29/59 - 8/62  
Contribution: U.S. (FC/DC) \$80,000

### Objective

To assist the GOT strengthen its primary and secondary education programs by providing participant training for student teachers to familiarize themselves with American educational institutions and methods.

### Results

Two groups of teachers-in-training were sent to the United States for periods of three months:

1. Twenty-five female students from normal schools.
2. Fifteen students majoring in English at the University of Tunis to become English language teachers.

Upon return, and after completion of their required study programs, all participants became teachers in primary and secondary schools.

### Evaluation

The project provided an opportunity to expose 40 Tunisian teachers to American culture and educational methods. It gave greater language proficiency to English language teachers - half of the first group and all members of the second. Its effectiveness was diminished by immaturity of the trainees selected for the first group, and by the fact that in both cases training was limited to three months - a period insufficient to give participants real insight into teaching methods. The project may be termed partly successful.

Project No.: 664-41 -990-124

Project Title: Hotel Training/Tourism Development

Project Dates: 6/23/58 - 2/63

Contribution: U.S. (TC/DG) \$ 12,000  
(Counterpart/Grant) 689,000

GOI (Dollar equiv.) \$1,518,000

### Situation at Time Project Initiated

Tunisia is by virtue of its location, climate and natural beauty, ideally suited as a vacation area on nearly a year-round basis. Monastir, the birthplace of President Bourguiba, has become more and more an important attraction for tourists, both foreign and Tunisian. This increase in tourism had been impeded both by the lack of adequate hotel facilities and by a road system both in and around Monastir which was badly in need of improvement and modification, so that the increased traffic of the future can be accommodated.

### Objective

This project was designed to assist the GOI in the expansion of road and hotel facilities in the Monastir area. The hotel construction provided for under this project called for the building of a new sixty room hotel at Bekhila (Skanes Hotel) and the expansion of the Hotel Ribat at Monastir from 21 to 63 rooms. Another target was the improvement of the following principal roads in and around Monastir:

1. Corniche road at Monastir;
2. "Falaises" coastal road from Monastir to Skanes;
3. the road between the Presidential Palace and the airport;
4. Access roads No.1 and No.2 at Skanes;
5. the road between Monastir and Djemmal.

### Location

Monastir and environs.

## Results

The road network in and around Monastir, including the esplanade and promenade adjacent to the sea, was modernized. The construction of a new sixty-room hotel at Skanes (Skanes Palace) and the expansion from 21 to 63 rooms of the Ribat Hotel at Monastir were carried out.

## Evaluation (1966)

The two hotels in question maintain a high rate of occupancy and thereby contribute to Tunisia's foreign exchange earnings. This was the real beginning towards the development of tourism in Tunisia which brought with it all the attendant benefits of increasing the commercial activity of the area, handicraft products, and the creation of several thousand new jobs.

## Review (1968)

Monastir continues to increase in importance as a tourist center. The hotels are being used for the purposes intended and all roads are in excellent condition.

Project No.: 664-12-120-125  
Project Title: Development of Oued Melah Basin  
Project Dates: 7/13/59 - 12/31/62  
Contribution : U.S. (Counterpart/Grant) - \$357,000  
GOT (Dollar equiv.) \$502,000

### Objective

1. To establish soil and water conservation measures on 4,000 ha. on the upper reaches of the Oued Melah watershed.
2. To supply supplemental irrigation water on 500 ha. of irrigable land.

The project proposed to establish olive, almond, apricot, eucalyptus and other suitable trees adapted to the area on the 4,000 ha. in the upper reaches of the watershed. The planting of trees was designed to effect a decrease in the run-off of water and act as a demonstration for future practices of soil conservation in other parts of the area.

### Location

This project is located in the watershed of Oued El Melah between M<sup>s</sup>Saken and El Djem.

### Results

Inspection was made by USAID in March 1961 and project was found completed and satisfactory. The 4,000 ha. had been terraced and planted with fruit and almond trees.

### Review (October 1968)

This beautiful watershed area is located south and east of Bourdjine on the M<sup>s</sup>Saken/El Djem road. It contains the villages of Djemmal, Zeramdine and Menzél-Kamel. The terraces and other waterholding and spreading structures are intact. Repairs have been made where necessary. Some bunds have been planted with cactus. The basin is now mostly covered with young plantations of olives, almonds and apricots. Some areas are reserved for cereal and forage crops. This development project is now producing a good return for the inhabitants.

Project No : 664-11-170-126  
Project Title: Reforestation of the Mogods  
Project Dates: 6/11/59 - 12/31/63  
Contribution: U.S. (Counterpart/Grant) \$ 304,000  
GOT (Dollar equiv.) \$1,742,000

#### Objective

To assist the GOT in its efforts to upgrade the economic base of a poor section of the country while at the same time utilizing the services of a sizeable unemployed labor force

#### Situation at Time Project Initiated

The Mogods extend along the northern Tunisian coast to the west of Bizerte nearly as far as Cape Negro. The area is mountainous and sparsely covered with scrub bush, the original forest of cork bearing oak trees having been virtually destroyed by man and fire. The area is subject to severe erosion by wind and rain. The Mogods are quite unproductive for agricultural crops, but the land is suitable for forest cover.

#### Results

The project involved 3,000 ha of land in four selected areas. The trees planted were Eucalyptus, Accacia, Olive and Poplar. For the most part, it was necessary, prior to planting, to clear the land of brush, followed by contour plowing, terracing, etc.. The project provided employment for approximately 760 workers in 1959-60 and 1,520 workers in 1960-61.

#### Evaluation

It is anticipated that the area will provide fuel supplies and limited quantities of box lumber by 1970-72.

Project No.: 664-12-120-127  
Project Title: Sfax Water Supply  
Project Dates: 5/27/59 - 12/31/60  
Contribution: U.S. (Counterpart/Grant) \$1,786,000  
GOI (Dollar equiv.) \$ 482,000

Objective

To provide needed additional water for the city of Sfax by a) making extensive improvements in the collection galleries of Sbeitla in order to increase volume of discharge, b) the installation of 111 km. of 450 mm. to 600 mm. main delivery pipe, c) the construction of 2-5,000 m<sup>3</sup> distribution reservoirs at Sfax and d) the extension of the Sfax water distribution system.

Location

a) Sbeitla, b) Sbeitla-Sfax, c) 11 km. from Sfax on road to Sbeitla, d) Sfax.

Results

The work started in 1957 and was completed in 1961.

Evaluation

This project was considered timely and work satisfactorily performed. It was followed by a Development Loan request (664-H-012) for \$600,000 for extending the city distribution system and purchase of water meters.

Review (September 1968)

All installations are in good condition and being fully utilized. Additional work has been carried out under Project 664-22-120-178.

Project No.: 664. 12-520-128 A-E

Project Title: Urban Water and Sewage System

Project Dates: 8/21/59 - 12/31/63

Contribution: U.S. (Counterpart/Grant) \$1,880,000  
 GOT (Dollar equiv.) \$ 569,000

Objective

There is a considerable need for improving water supply and sewage systems, particularly in outlying provincial districts. In many cases the present facilities are totally inadequate to meet increasing domestic requirements. This project consisted of improvements to municipal water and sewage systems in several important cities and villages in various parts of the country.

Results

The following table indicates the different centers, their population and the type of improvement, realized with USAID financial support from 1959 to 1963:

<u>Center</u>	<u>Population</u>	<u>Type of Improvement</u>
Moknine	18,000	Sewage system
Gafsa	24,000	Sewage system, water supply
La Goulette	26,000	A central pumping station for sewage system
Kairouan	34,000	Water supply
Sidi Mahrez	3,000	A small distribution system to improve water supply
Chott Sidi Abdessalem	1,500	Water supply
Kalaat El Andles	5,000	Construction of a reservoir for water supply
Hammamet	7,000	Water supply
Gammarth	1,000	Laying of conduits for water supply
Beja	23,000	Pumping station for water supply
Degach	3,000	Water supply
Nefta	15,000	Water supply
El Hamma du Djerid	3,000	Water supply
Mides	1,500	Water supply
Douz	3,000	Water supply
Cité Administrative		
Gabes	1,000	Water supply

<u>Center</u>	<u>Population</u>	<u>Type of Improvement</u>
Menzel Chaker	5,000	Water supply
Souassi	3,000	Water supply
Le Krechem	1,000	Water supply
Midoun	3,000	Water supply distribution system
Mahboubine	5,000	Water supply distribution system
Monastir	13,000	Sewage system and water supply
Mahdia	11,000	Water supply
Mezzouna	1,500	Water supply
Kerkenah	1,500	Water supply
Jendouba	12,000	Sewage system and water supply
El Ala	3,000	Water supply
Menzel Djemil	8,000	Sewage system and water supply
Korbous		Installation of pumping station and reservoir

#### Evaluation

The availability of pure water and sewage disposal has contributed to the improvement of public health and the standard of living of the population of the cited centers. The economic life of the areas also has benefited from this project.

#### Review (October-November 1968)

On the basis of the on-site reviews, it appears that the installations and improvements made under this project - with some minor and relatively unimportant exceptions - are in good condition and being fully utilized. In many cases, further improvements have been made since the completion of the project.

Project No : 664-12-690-129 A-H

Project Title: Technical and Professional School  
Construction and Equipment

Project Dates: 6/15/59 - 10/31/62

Contribution: U.S. (Counterpart/Grant) \$5,504,000

GOT (Dollar equiv.) \$3,483,000

### Objective

The objective of this project was to provide financial assistance to the GOT's program of technical and secondary school construction aimed at increasing the supply of trained personnel.

### Results

129 A - The following construction, improvements and provisions of equipment were provided for under this project:

- 1) Lycée de Garçons de Monastir - construction, equipping and subsequent enlargement to total capacity of 1000 students;
- 2) Lycée Mixte de Gabes - construction and equipping;
- 3) Lycée Mixte de Beja - construction and equipping;
- 4) Lycée Technique de Tunis - construction of mechanical engineering shop and wing for electro-mechanical laboratories;
- 5) Collège Secondaire Professionnel de Jeune Filles de Jendouba - expansion construction;
- 6) Collège Sadiki, Tunis - construction of two manual art workshops;
- 7) Lycée Mixte de Gafsa - construction, equipping and subsequent enlargement to total capacity of 900 students;
- 8) Lycée de Jeunes Filles de Kairouan - conversion of existing wing into a modern secondary school establishment.

129 B - The construction and equipping of the Lycée Mixte de Mahdia, including a day school, a dormitory, an administrative building and housing facilities for the director, the treasurer and the general supervisor.

129 C - Construction of the Collège Secondaire (1<sup>e</sup> Cycle) et Secondaire Professionnel Mixte at Menzel Temime. The school consists of a day school with facilities for general classroom, science and technical instruction and physical education, plus dormitories, administrative building and housing for the director, the treasurer and the general supervisor of the school.

129 D - The construction and equipping of the Collège Secondaire (1<sup>e</sup> Cycle) et Secondaire Professionnel Mixte at M'Saken, including a dayschool, a boarding school, an administrative building and housing for the director, the treasurer and the general supervisor.

129 E - Enlargement of the Lycée Technique de Sousse, including the construction of an additional four dormitories, ten classrooms, workshops, dining room and housing for the treasurer.

129 F - Equipment of Technical and Intermediate Colleges: This project provided for the procurement of equipment, tools and instruments essential for equipping laboratories and workshops for third-year students of technical and intermediate colleges throughout Tunisia.

129 G - This project provided for the enlargement of the Lycée de Garçons de Bizerte, including construction of sixteen new classrooms and laboratories.

129 H - Construction of a new building to house various shops and a drawing room at the Centre d'Education Professionnelle Surveillée at Gammarth.

#### Evaluation and Review (November 1968)

All work provided for under this project has long been completed (albeit in some cases with considerable delays) and all equipment received. Some of the secondary schools involved subsequently received additional assistance under Project 664-42-690-244 for further expansion and provision of equipment. All schools are operative and in good condition. Despite the delays encountered, which considering earlier problems of teacher training did not significantly impair its effectiveness, the project can be said to have achieved its objective of providing much-needed additional educational facilities for several thousand Tunisian students.

Project No.: 664-11-290-130

Project Title: Modernization of Topographic Services

Project Dates: 5/21/59 - 11/18/65

Contribution: U.S. (TC/DG) - \$ 202,000

(Counterpart/Grant) - \$ 89,000

GOF (Dollar equiv.) - \$1,614,000

### Objective

The service's existing reproduction equipment (blue-printing, maps, charts and other data-requiring photographic and reproduction equipment) was of 1910-1920 vintage. The need for replacement and additional equipment was further emphasized by the large increase in demands for services to support the country's continuing industrial and agricultural development.

### Location

Service Topographique - Tunis

### Results

Funds were provided under this project to purchase some 29 items, including an offset machine, blueprint machines, plate preparation machines, restitutors, stereoscopes, theodolites, retouchers, and montage tables. An inspection made by USAID in July 1960 indicated that all items had been installed and in use, with the exception of the restitutor which had been ordered and scheduled for delivery in October 1960.

### Evaluation

The reproduction equipment was placed in operation with satisfactory results, rendering better and more complete service.

### Review (November 1968)

A tour of the facilities has shown that the equipment is in good condition and being fully utilized.

Project No.: 664-11-790-131

Project Title: Assistance to Tunisian Government in Recruitment of Technical Personnel (Jadham Plan)

Project Dates: 7/6/59 - 8/28/64

Contribution: U.S. (Counterpart/Grant) \$50,000  
(S.A.) 212,000

GOT (Dollar equiv.) \$164,000

### Objective

The primary objective of this project was to assist the GOT in employing qualified non-Tunisian technical and professional personnel who could not be obtained through assistance programs of other governments, by making available dollars and counterpart funds to pay the difference between customary Tunisian salary scales and the amount required to contract qualified foreign personnel. Priority was to be given to personnel to be recruited for developmental activities - particularly in the scientific and engineering fields. The financing of executives and administrative personnel was excluded from this project.

A second objective introduced in the course of implementation of the project was the training of Tunisian counterparts by personnel funded through this project.

### Results

A total of fifty-one (51) foreign professionals was employed by the Tunisian government under this project. Together, they provided 797 man-months of services under personal contracts, ranging in duration from one month to four years; their specialties ranged from translators and vocational instructors to engineers and investment analysts. Of the total of 51 technicians recruited, 17 were French, 9 Italians, 9 Belgians, 6 British, 5 Danish, 4 Dutch and 1 Yugoslav. Agencies in which these professionals served included the Ministries of Plan and National Economy, Health and Social Affairs, and Agriculture. Other beneficiaries were the Offices of Mines, Tourism, and Handicrafts, the Municipality of Tunis, the Medjerda Valley Development Authority, the "Société Tunisienne de Banque", the National Investment Corporation (SNI), the National Textile Corporation and the Tunisian Railroads (foundry).

### Evaluation

The GOT made full use of funds made available in fiscal years 1959 and 1960, but only 44% of the funds provided subsequently were utilized. Applying the cost figure used for planning purposes, (\$8,000 per technician per year), funds deobligated would have been enough to contract for up to 336 man-months of services. In terms of numbers of foreign technicians recruited, therefore, this project was only partly successful.

As to the second objective, personnel recruited under this project, other than those specifically recruited as instructors, did not conduct a significant amount of formal training. However, with the exception of transistors, technicians recruited after this goal was adopted complied with this requirement by providing on-the-job training to Tunisian personnel.

Given the conditions existing in Tunisia at the time this project was undertaken, there is no doubt that this project was most useful in assisting the GOT in carrying out its normal functions and its development projects at a time when the newly independent country most needed this type of assistance.

Project No.: 664-12-220-132 A-E  
Project Title: Electrification Program  
Project Dates: 8/4/59 - 12/31/63  
Contribution: U.S. (Cooperating/Grant) \$886,000  
GOT (Dollar equiv.) \$768,000

### Objective

Prior to 1959, there was no electricity in several population centers of Tunisia. This project provided counterpart funds for the extension of electric distribution lines into such areas where there existed a potential for improving the standard of living of the local population and thereby improving their productivity.

### Results

132 - This project provided for the extension of electrification to three centers as follows:

1. Porto Farina: This area was supplied with a 30KV line branched off from the existing network of Bizerte - Aouadja - Ras Djebel (approximately seven km. in length.)
2. La Chebba: This project required a 22 KV line from Ksour Essef of approximately 25 km. and included a network of low-tension lines as well as a public lighting network.
3. El Djem: This project required the erection of a 22 KV line from Mismal-Zeramdine (approximately 35 km.), a low-tension network and a public lighting network.

132 A - This project provided for the construction of a 30 KV high tension line from Le Krib to Fedj el Adum, a distance of 7 km., and the necessary transformer stations.

132 B - The project consisted principally of the construction of a 1V line about 3.2 km. in length from the Centrale located in Kasserine. It included step-up and step-down transformer stations and a low voltage distribution network of approximately 1,600 m in length.

132 C - This project provided for the extension of the electrical power system to five important towns around the city of Gabes. A central power station, high tension lines, low-tension distribution systems and public lighting facilities were built. The towns involved were El Hamma de Gabes, Metouia, Cudraf, Chenini, Po: Chenna, and El Naia.

132 D - This project provided for the extension of the electrical network to certain population centers throughout Tunisia. The project provided electrical power centers for the following places:

La Smala des Souassi  
Sfax (outskirts)  
Kalaat Es Senam  
Siliana  
Sidi Bou Ali  
Djebiana  
Khribia  
Tozeur and Southern Tunisia

132 E - The target of this activity was to install a power network in Haffouz to cater to the needs of the local public establishments and provide, at the same time, a small street lighting lay-out for the town.

#### Evaluation

Electrification is a prerequisite to the expansion of industrial and agricultural production. By bringing electricity to these urban centers, the population's potential productivity has been increased substantially.

#### Review (November 1968)

Power lines and equipment are being utilized for the purposes intended.

Project No.: 664-12-250-133  
Project Title: Flood Protection of Moknine  
Project Dates: 6/9/59 - 12/31/60  
Contribution: U.S. (Counterpart/Grant) \$50,000  
GOT (Dollar equiv.) \$50,000

Objective

To control drainage of the eastern part of city of Moknine.

Location

Project is located along the eastern side of the city of Moknine (approximately 20 km. southeast of Monastir) to the Sebka of Moknine.

Results

Project was accomplished through the construction of a drainage canal (approximately 2 km. long) to control drainage of adjacent watersheds, identified as No.5 and No.6, and the construction of three small vehicle and foot crossings and one railroad crossing.

The work was started in 1960 and completed in March 1961. Inspection was made by USAID and found satisfactory.

Review (November 1968)

Project visited and found in satisfactory condition.

Project No.: 664-12-520-134

Project Title: Improving Water Supply of the Central Sahel

Project Dates: 7/20/59 - 12/31/62

Contribution : U.S. (Counterpart/Grant) \$ 952,000

GOT (Dollar equiv.) \$3,479,000

### Objective

To improve the water supply of the Sahel Central, including all of the principal cities and villages in the Gouvernorat of Sousse.

### Results

This project was accomplished by the following construction:

1. the principal pipeline from El Onk to Ksar Hellal;
2. a 4,000 m<sup>3</sup> reservoir at Bembla;
3. 10 km. of distribution pipe from El Onk toward Monastir;
4. a 12 km. branch line toward Teboulba and Bekalta;
5. the pumping station at new well on the existing main line south of Kairouan.

The main pipeline (Bou Hafsa-El Onk) originates from wells just west of Kairouan. This pipeline flows in an easterly direction and passes just south of Kairouan, finally to the city of Sousse. Prior to its termination at Sousse, there is a reservoir known as El Onk. It is with this point that the major part of this project is concerned.

This project was started in 1959 and completed in 1962.

### Evaluation

In 1966, all structures and installations were found to be in satisfactory condition. It is interesting to note that due to the continued growth of the Sahel Central, the GOT was planning a larger main line system paralleling the one above.

### Review (November 1968)

All in satisfactory condition and being used for intended purposes.

Project No.: 664-11-390-135  
Project Title: Engineering Studies Public Works  
Project Dates: 7/8/59 - 6/31/60  
Contribution: U.S. (Counterpart/Grant) \$762,000  
GOT (Dollar equiv.) \$190,000

### Objective

This project provided funds for the following purposes:

1. To contract with European firms for engineering studies concerning a number of public works projects which were under consideration.
2. To contract for engineering technicians and consultants to assist the local cadre in carrying out public works projects which were in process or planned.
3. To contract for engineering instructors and professors to assist in training and upgrading the level of professional competence of the local engineering cadre.

After independence Tunisia suffered a number of economic setbacks due to the exodus of French capital and the departure of thousands of foreign technical and management personnel. The Tunisian engineering staffs of the Divisions of Public Works and Housing were very limited in number and experience. The increasingly important public works program had placed an extremely heavy workload on the engineers in these division. This project was designed to relieve this situation.

### Results

The engineering studies contracted for with European firms were as follows:

1. Study of a series of standard type bridges which could be utilized in various locations throughout Tunisia.
3. Technical and economic study of proposed Bizerte tunnel.
3. Technical and economic study of more than 300 km of roads.
4. Study for the improvement of the port of Tunis and La Goulette fishing wharfs.

The European firms who performed services under this project were:

- Gilbert (SOGETHA)
- Van Herde
- Skandia Consult.

#### Evaluation

This project assisted in making possible the minimum amount of essential infrastructure development which is a prerequisite to economic growth. The U.S. financial support provided was in complete harmony with the objective of increasing agricultural and industrial output of Tunisia.

Project No.: 664-11-120-136  
Project Title: Land Boundary Studies  
Project Dates: 8/17/59 - 4/30/62  
Contribution: U.S. (Counterpart/Grant) \$337,000  
COF (Dollar equiv.) \$1,193,000

### Objective

The objective of this project was to assist the Ministry of Agriculture in meeting local costs involved in establishing land ownership, such as land surveys and reviewing and updating existing ownership records.

### Areas and types of ownerships affected:

Domanial	15,000	ha.
Ex-church	30,000	
Sold for due debts	25,000	
Undivided land	30,000	
Abolished tribal and collective	210,000	
	<u>310,000</u>	ha.

In 1960, the project was amended to include 130,000 ha. additional land surveying and 300,000 ha. by aerial photography.

### Results

According to Mr. Sikard, Chief of the Public Land Survey, all of the above work was accomplished, totalling 555,179 ha. Cost of the work varied from 400D. to 800/ha.

### Evaluation

The project has served its purpose by providing the needed basic data for land reform and settlement.

Project No.: 664-11-660-137

Project Title: Training for Business Careers

Project Dates: 5/2/60 - 31/12/63

<u>Contribution:</u>	U.S. (TC/DG)	\$ 512,000
	(Counterpart/Grant)	63,600
	GOI (Dollar equiv.)	\$ 58,000

### Objective

The project was conceived as the first step towards alleviating the problems resulting from the departure from Tunisia of the European business and financial elite by training as quickly as possible a number of Tunisians in such fields as accounting, economics, banking, retail trade and production.

### Results

Out of 52 prospective participants, 48 actually went to the United States (42 to Washington University in St. Louis and 6 to the University of Syracuse). Of the 48, 29 or 60% were successful in obtaining the B.S. Degree. Of the 29 successful candidates, 13 went on to graduate study in Business Administration, and 8 were successful in obtaining the M.A. As of March 1967, seven of these 8 were engaged in working for their Ph.D.

### Evaluation

Since several participants did not return to Tunisia, or went to Algeria (several participants were Algerian nationals), a total of 21 of the original 48 have accomplished the principal aims of their programs and their training has been, or is very likely to be, useful to the economic development of Tunisia. Given some of the problems encountered in the selection of the participants and the implementation of the project, it can be considered to have been moderately successful in meeting its objective.

Project No.: 664-12-340-138  
Project Title: Port Improvement - Mahdia  
Project Dates: 2/23/60 - 12/31/63  
Contribution: U.S. (Counterpart/Grant) \$286,000  
GOI (Dollar equiv.) \$175,000

### Objective

Inadequate port facilities at Mahdia and the consequent poor protection afforded against storms and other hazards of the sea impeded the development of the fishing industry.

### Location

Port of Mahdia.

### Results

This project provided financing for the cost of improving the port of Mahdia, one of the most important fishing and sponge-gathering centers of Tunisia. The improvement work consisted of the construction of the south-east mole and the concrete block harbor walls, fish-handling building and the cold storage sheds, as well as wooden jetties to project into the inner basin. Also constructed were the south-west mole incorporating the slipway, landing way, maintenance buildings, and a port entrance marker beacon. The dredging of the two outer port basins to a 4.5 meters depth and the inner basin to three meters was also undertaken under the auspices of this project.

### Evaluation

The improvements to the port of Mahdia executed under this project have contributed substantially to the safety and productivity of the fishing and sponge-gathering industry. As a result of these improvements, greatly increased quantities of fresh fish became available to the domestic markets of this country.

### Review (October 1968)

The port facilities were observed to be in first class condition and in use.

Project No.: 564-11-225-139  
Project Title: Communication Improvements P.T.T.  
Project Dates: 2/3/60 - 2/1/64  
Contribution: U.S. (S.A.) \$548,000  
GOT (Dollar equiv.) \$500,000

#### Situation at Time Project Initiated

Telecommunications in the City of Tunis were relatively modern and had been well maintained by the P.T.T. As needs had arisen, additional equipment had been installed in the Tunis area. Telecommunications outside of Tunis, however, had been neglected. All communications to other towns in Tunisia were overhead line and there were far too few channels to the major points of communication. All of the equipment was either pre-war French or American military which was left in Tunisia after World War II.

Communications to Sfax were carried by two systems of twelve channels each and one system of six channels, all on overhead lines. One of these systems was routed to Sfax through Sousse and the other two were routed through Kairouan. They had been extended to their maximum limits possible. The traffic on those lines almost tripled since 1953, and as a result, it was almost impossible to call Sfax without a long waiting period.

#### Objective

The purpose of this project was to assist the GOT in the improvement of telephone communication between Tunis, Sousse and Sfax through the erection of a 120 channel microwave link.

#### Results

Installation of the new microwave system was completed in the first half of 1963. The new system constituted the latest in modern electronic techniques and has a capacity for the simultaneous transmission of 600 communications.

#### Evaluation

This project represented a much needed improvement in communications capabilities between Tunis, Sousse and Sfax. The installation of the microwave link has assisted in stimulating business between major market areas and facilitated economic and political ties between regions. With its capacity for six hundred simultaneous

communications. It will satisfy telephone requirements between these cities for years to come.

Review (October 1963)

In satisfactory condition.

Project No.: 664-12-840-141  
Project Title: Housing Loan Program  
Project Dates: 3/2/60 - 12/31/61  
Contribution: U.S. (Counterpart/Grant) \$1,071,000  
GOT (Dollar equiv.) \$1,539,000

### Objective

The shortage of housing for large numbers of workers had existed for a long time in Tunisia and the need to do something to alleviate the problem had been in evidence for many years.

Under this project, counterpart funds were furnished for the establishment of a housing loan program to provide homes for low income families with annual revenues of from 250 to 600 dinars.

### Results

In 1960 and 1961, USAID made available a total of 450,000 dinars to the Société Nationale Immobilière Tunisienne for the construction of 822 houses. These were built principally in the suburbs of Tunis. Some, however, were erected in various other areas in Tunisia.

### Evaluation

Those workers with low annual income who were able to acquire housing under this program now have decent homes, for which they can pay over a period of 30 years at 2% annual interest rate.

This program, in addition to improving the living and housing standards of the Tunisian population, also aided and stimulated the building and supply industries. It has been estimated that the construction of these houses provided 17,150 man-months of direct employment.

Project No.: 664-11-120-142

Project Title: Agricultural Studies and  
Engineering Plans

Project Dates: 9/16/59 - 12/31/65

Contribution: U.S. (Counterpart/Grant) \$430,000  
GOT (Dollar equiv.) \$822,000

### Objective

The objectives of this project were to provide financial and technical assistance for detailed hydraulic and water supply investigations and studies in various parts of Tunisia.

### Results

Project results include:

1. the design and preparation of equipment lists for expanded water supply systems for nine small towns in Tunisia;
2. a series of studies for the Tunis Water District, comprising all of the major cities of Northern Tunisia, including estimates of future water requirements, organizational and staffing needs, and recommendations for future equipment purchases;
3. a reconnaissance and site selection study by the International Engineering Company for a complex of five proposed dams and one diversion structure in the watershed of the Upper Medjerda Basin;
4. a full feasibility study, also prepared by IECCO, of the above proposed project, including agricultural, engineering, and cost benefit studies with preliminary designs and cost estimates of the water storage and irrigation systems involved.

### Evaluation

The surveys and plans were used as a basis for national planning in reforestation, soil and water conservation and irrigation and in looking up the G.A. ten-year perspective and later in the execution of specific projects.

Project No.: 664-12-120-144 A-H

Project Title: Combined Small Irrigation & Land  
Development

Project Dates: 12/31/60 - 12/31/64

Contribution: U.S. (Counterpart/Grant) \$2,790,000

GOT (Dollar equiv.) \$3,637,000

### Objective

The objective of this project was to assist the GOT in its land development and irrigation program by improving already existing installations and creating new irrigation perimeters, mainly in the central and southern parts of the country.

### Results

144 A - This project involved 9 irrigated perimeters within the Nefzaou region, located midway between Tozeur and Gabes at the eastern end of the Chott Djerid, and provided for the cleaning of debris and sediment from existing irrigation and drainage canals and silt storage basins.

144 B - Relocation of two concrete conduits (Sidi Mansour and Ragouba) in the Gafsa oasis and repairs of the Bayech River channel at two critical points in the water system.

144 C - This project financed the leveling of earth mounds after the removal of jujubier plants from approx. 400 ha. by work relief labor in the Kasserine area in order to permit the planting of olive trees. After the completion of the USAID phase, the GOT financed the extension of the project to 2,000 ha. and provided irrigation for 300 ha. of the area.

144 D - This was a complete land treatment and development project covering 5,000 ha. located 8 miles west of Kairouan at Henchir El Green, and designed to provide farming units to 182 families. 3,300 ha. were developed for grazing, 500 ha. for cereal production and 1,200 ha. for olive plantations.

144 E - The purpose of this project was to develop an extensive agriculture program (especially olive trees) on 1,360 ha. of land (located on both sides of highway 107, 30 km. south of Gabes on the road to Matmata) by utilizing the waters from the Oued Djir. A low water diversion dam and appropriate primary and secondary canals were constructed.

144 F - The basic feature of this project was the construction of concrete conduits on concrete weirs throughout the Gafsa Oasis to solve inequities in the distribution of water, stop seepage within practical limits, permit accurate delivery of water to individual farms and redistribute the water on an equitable basis over all lands within the irrigation perimeter. The project increased the irrigated area from 580 ha. to 1,084 ha.

144 G - This project involved the following four areas:

- 1) Irrigation improvement of the South; the purpose was to develop three areas (Chakmou, El Louah, Hazoua) totaling 286 ha. in the Gouvernorat of Gafsa by installing windbreaks and planting palm trees and olive trees.
- 2) Irrigation perimeters of Maknassy; the purpose was to develop approximately 1,000 ha. of dryland farming and 200 ha. for irrigation in the Maknassy plain.
- 3) Water spreading of the Oued Oglia; masonry dam was constructed on the left bank of the Oued Oglia in order to control its flood waters and provide a distribution system of utilizing these waters in the development of Henchir Djebibina (Delegation of Pont du Fahs).
- 4) Sfax Underground Water Utilization; four land areas (Mellouleche, Henchir el Hecha, Ahzeg, Nakta) were developed for the purpose of serving primarily as demonstrations to determine the extent to which underground saline water resources can be used to expand agriculture in the region.

144 H - This combined project included ten sub-projects as follows:

- 1) Land boundary surveys consisting of topographic and survey work carried on by the Ministry of Agriculture and its Service of Land Ownership on various collective lands (Kairouan, Sbeitla, Sidi Bou Zid, Sousse, Sfax, Le Kef, Kasserine and Gafsa).
- 2) Kairouan Plain irrigation consisting of assistance to the Plant and Animal Production Service of the Ministry of Agriculture in initiating the development of 872 ha. of irrigation crops and 325 ha. of annual cropping area in the Kairouan Plain through the establishment of windbreaks, destruction of noxious weeds, provision of livestock for perimeters.
- 3) Oued Siliana Valley irrigation to assist the Hydraulic Service in developing an irrigation system in the Oued Siliana Valley.

- 4) Selection of dam sites to assist the Hydraulic Service in determining the exact location of seven sites for dams on Qued Lakhmess, Qued Ousafa, Gdir El Ghoul, Qued Djoumine, Qued Masri, Sidi Aich and Qued Khangua.
- 5) Qued Siliana valley irrigation project to assist the Hydraulic Service in conducting reconnaissance studies in connection with the location of earth dams (surveys, soil studies and laboratory analyses).
- 6) Exploration and well drilling to determine extent of underground water resources in various areas (Jendouba, Le Kef, Cap Bon, Kasserine, Sousse, Kairouan, Gafsa, Gabes, Medenine, Bizerte and Sfax).
- 7) Rural domestic water supplies project to assist in the establishment of public water points in Tunis, Cap Bon, Bizerte, Beja, Jendouba, Le Kef, Kasserine, Sousse, Kairouan, Sfax, Gabes, Gafsa and Medenine.
- 8) Private water points project to assist in the creation of private water points and cisterns through supplying equipment and credit to various gouvernorats.
- 9) Underground and surface water resources project for the village of Segui, including a test drilling to a depth of 800 m, creation of a pumping station and shelter, construction of water reservoirs and conduits.
- 10) Fruit and olive seedling procurement of 412,000 deciduous fruit trees, 30,000 table olive and 960,000 olive cones to be planted over an area of 30,000 ha. (Tunis, Le Kef, Beja, Kairouan, Kasserine, Gafsa and Jendouba Gouvernorats).

#### Evaluation and Review (October-November 1968)

It was found in the course of on-site inspections of selected areas covered by this project at the time of its implementation as well as on the occasion of the Fall 1968 review that most parts of this comprehensive project had been developed as planned and had achieved the desired effects. Thus, for example, over 2,000 ha. of olive, almond and pistachio trees are now standing in the Kasserine area as a result of Project 144 C. The Qued Djir Dam (Project 144 E) is in very good condition and the extensive plantations of olive trees have been further extended and are well maintained. The work in the Gafsa oasis (Project 144 F) has been a complete success with the distribution system well maintained and effective use being made of the available water.

Among the very few problem areas are the Hazoua perimeter (Project 144 G.i.) where the irrigation system appears to be in poor condition due to lack of maintenance (although over 4,000 olive and almond and 4,600 date trees have

been planted on 65 ha., with the date trees bearing fruit) and the Qued Oglā Dam (Project 144 G.3.) which was destroyed by floods but is now in the process of being reconstructed.

On balance, this appears to have been a very successful project.

Project No.: 664 12-110-145 A & B  
Project Title: Agricultural School Development  
Project Dates: 9/9/59 - 12/31/62  
Contribution: U.S. (Counterpart/Grant) \$538,000  
GOT (Dollar equiv.) \$625,000

Objective

The objective of this project was to provide financial assistance to the GOT for the construction of agricultural schools and the procurement of farm equipment for those schools.

Results

The following was provided under this project:

1. Collège Secondaire Professionnel Agricole, Bou Cherik  
(Construction of farm buildings and workshops, equipment for a laboratory, living accommodations and a school farm);
2. Collège Secondaire Professionnel Agricole, Sidi Thabet  
(Construction of warehouse, stable barn and livestock building);
3. Collège Secondaire Professionnel d'Horticulture Sidi Thabet  
(Construction of laboratory, practical work sheds and a green house, equipment for laboratories and demonstrational materials);
4. Collège Secondaire Agricole, Moghrane  
(Construction of laboratories, equipment sheds, dairy barn; equipment for laboratories);
5. Collège Secondaire Professionnel Agricole, Gamouda  
(Construction of classrooms, boarding facilities, shops, staff housing; shop and farm equipment).

Evaluation and Review (November 1968)

The facilities constructed under this project are generally in good condition and being utilized for the purposes intended.

An American heavy equipment specialist worked in Tunisia between 1958 and 1964 under this project. His initial role was to analyze the Highway Department's equipment needs and determine which items had the greatest priority for procurement with project funds.

Upon completion of this determination, he prepared the technical specifications for bid invitations and assisted the GOI in the actual procurement, receipt and putting into operation of the machines purchased.

Concurrent with the above, the equipment specialist worked with the Highway Department's equipment maintenance section for the purpose of helping it develop the skills, procedures, organization and spare part operations.

### Evaluation

The maintenance of existing roads and the construction of desirable new roads are basic to the operation and development of the economy of the country. This project served these ends by providing the equipment and advisory services necessary to a national highway maintenance and construction program. The expansion of economic activity that has occurred in the recent years in agriculture, industry and tourism would not have been possible in anything approaching the same measure if this project had not been successfully implemented.

Project No.: 664-11-190-147  
Project Title: Agricultural Support Equipment  
Project Dates: 1/15/60 - 10/17/63  
Contribution: U.S. (SA) \$3,254,000  
GOT (Dollar equiv.) \$ 323,000

Objective

To provide the foreign exchange costs for heavy equipment, supplies and transportation vehicles to the GOT Ministry of Agriculture for the support and to accelerate programs in soil and water conservation, well drilling, river flood control and reforestation.

Results

The equipment purchases were made as follows:

FY-1960	\$1,592,663
FY-1961	1,658,298
	<u>3,002</u>
	\$3,253,963

The USAID/Tunis Controller Office made an end use audit with report dated June 29, 1965, and reported the distribution and utilization satisfactory with exception of one item (value \$3,904) for which a refund was not recommended - also that spare parts became a critical problem: (Subsequently spare parts have been provided for in future Development Loans).

Evaluation

This equipment has been extremely valuable in the GOT agriculture and development programs and has contributed to the government's achievements in soil and water conservation, well drilling and reforestation.

NOTE: USAID/Tunis Audit Reports 52-63 and 65-64 concern this project.

Project No.: 664-12-130-148<sup>#</sup>

Project Title: Crop Development Assistance

Project Dates: 6/30/60 - 7/31/62

<u>Contribution:</u>	U.S. (TC/DG)	\$136,000
	(Counterpart/Grant)	595,000
	GOT (Dollar equiv.)	\$481,000

### Objective

The project, started in 1960, had as its purpose the improvement and expansion of fruit and other tree crops (almonds, apricots, figs, peaches, apples, pears, plums, etc.) Through the planting of 800,000 trees on 4,300 ha. in various gouvernorats, the provision of 500 trailer water tanks for tree watering and the establishment of three tree nurseries capable of producing 1,500,000 trees annually.

### Location

Nurseries at Tabarka, Tebourba and Ain Seddane; tree planting mainly in the areas of Kairouan, Haffouz and Kasserine.

### Results and Evaluation (1966)

This project was extremely successful and made a major contribution to the horticultural program of Tunisia. The nurseries were dominant factors in farmer education and in providing seedlings for expansion of fruit and nut production.

### Review (October 1968)

The 3 tree nurseries served their purpose for the production of fruit trees over a period of several years. The Tebourba and Ain Seddane nurseries have been abandoned. The Tabarka nursery, due to soil conditions and root diseases, was converted to a nursery for vegetable plants; it is still in use. Other nurseries are now located at Kasserine, Kairouan, and Sbikha. It is reported that many watering trucks still seen in the fields were provided under this project.

\* Merged with Project 664-11-130-020

Project No.: 664-12-120-149

Project Title: Diversion Dam for Water Spreading - La Methasta

Project Dates: 8/4/59 - 12/31/61

Contribution: U.S. (Counterpart/Grant) \$ 43,000

GOT (Dollar equiv.) \$ 16,000

Situation at Time Project Initiated

The farmers in the Kairouan area have been utilizing the water-spreading technique for many years. At the beginning of the water-spreading season, the farmers constructed an earth fill across the stream bed in order to raise the water level and divert it into existing channels for irrigation. At the end of the season, when no more water was needed, it was necessary to destroy the earth fill, although the field diversion and water-spreading channels remained in place and operative.

Objective

Construction of a permanent masonry and concrete diversion dam on the Oued Ataf for flood water diversion irrigation of about 3,200 ha. This project was designed to eliminate the need for the annual construction and destruction of a dam.

Location

Dam is located about 4 km. north of Kairouan.

Results

The dam was constructed as planned.

Review (November 1968)

The dam is in good condition and operating efficiently.

Project No.: 664-12-120-150  
Project Title: Supplemented Water Supply (Kasserine)  
Project Dates: 9/6/60 - 12/31/62  
Contribution: U.S. (Counterpart/Grant) \$262,000  
GCT (Dollar equiv.) \$242,000

### Objective

This project was designed to provide assurance of a continuous water supply to the pulp factory of the "Societe Nationale Tunisienne de Cellulose" through the development of five wells and the improvement of two others at Kasserine. The alfa plant requires a continuous flow of 230 l/s, of which 60 l/s is consumed, while the remaining 150 l/s can be reused for irrigation purposes. The Oued Darb was the primary source of water for the SNCF plant. However, for those periods when the Oued Darb was too turbid for use by the SNCF plant, 7 new and improved wells were to be developed under this project to serve as a stand-by source.

### Location

The wells are located at Ain Allouche and Ain El Kaid in the Kasserine area.

### Results

Work on the 7 wells was completed in 1963.

### Review (November 1968)

The water supply for the SNCF is now provided entirely from the Ain El Allouche wells which also provide water for the Kasserine irrigation perimeter. The wells located at Ain El Kaid are used solely for the Kasserine city drinking water system. All are equipped with diesel or electric pumps and yield a total of 270 l/s.

The water supply to the SNCF which is not needed by the plant, or is suitable for reuse, is being utilized for irrigation projects.

Project No.: 664-11-668-153

Project Title: U.S. University Education

Project Dates: 6/30/61 - 1968

<u>Contribution:</u>	U.S. (TC/DG)	\$489,000
	(Counterpart/Grant)	30,000
	GOT (Dollar equiv.)	\$100,000

### Objective

The purpose of this project was to assist the GOT to fill the gap between needed and available college-trained personnel for the social and economic development of Tunisia, through participant training at U.S. universities, mainly in the field of engineering (29), plus specialized training in economics and other fields (5).

### Results

Training was provided mostly to the BA/BS level, although some participants succeeded in obtaining MA or MS degrees.

A total of 29 Tunisians received training in various engineering specialities including chemical, civil/mechanical, electronic and mining engineering. Other areas for degree training included labor economics, rural sociology, etc.

Those participants whose training had not been completed upon the phasing out of the project were transferred to Project 664-11-690-229, General Training Program.

### Evaluation

Of the 31 participants, who under this project have departed on degree programs, 24 (over 75%) received, or are expected to receive, their degrees, while 7 failed to complete their programs. Several of the returnees are occupying important and respected positions and most can be expected to make substantial contributions to Tunisia's development.

Project No.: 664-12-170-157  
Project Title: Fixation of Sand & Dunes  
Project Dates: 2/23/60 - 12/31/63  
Contribution: U.S. (Counterpart/Grant) \$177,000  
GOT (Dollar equiv.) \$310,000

Situation at Time Project Initiated

Along the northern coast, the sea currents throw up upon the beaches a large quantity of fine sand. The prevailing northwest winds created dunes that moved inland and threatened to engulf areas of natural vegetation and cultivated lands. A large portion of the latter areas had deteriorated; some had been abandoned. In others, the movement of the dunes had affected buildings, roads, gardens and orchards.

On the south, such as between Tozeur and Gabes, the shifting winds pick up sand particles and deposit them on the first obstacle encountered, usually vegetation. Additional deposits created the rising and fan-like dunes that endanger everything in the nearby areas. Vegetation of any size and permanency exists usually at an oasis where a small village is located. Thus, sand dunes are a continuous and serious problem to people, buildings, gardens, highways, springs, etc.

Objective

This project involved fixation of sand dunes along the northern coast of Tunisia and in southern Tunisia between Tozeur and Gabes as a means of containing their spread.

Results

The project consisted of constructing cane windbreaks, small benches, narrow access roads and tree planting (acacia, pines, eucalyptus, cypripus and poplars) in the following areas:

1. North: Menzel Belgacem (427 ha.), Cap Bon (227 ha.), Gammarth West (32 ha.), Porto Farina (40 ha.), Denna Mirene (170 ha.), Corniche (80 ha.), Bachateur (150 ha.), Meknas-Nefzas (344 ha.).
2. Between Tozeur and Gabes: Tozeur (20 ha.), El Hanna (5 ha.), Degache (5 ha.), Kriz (5 ha.), Geddache (5 ha.), Nefta (15 ha.), Kebili (20 ha.), Bechri (4 ha.), Bechilli (3 ha.), Barghoutia (3 ha.), Ne Said (3 ha.), Bazra (5 ha.), Douz (12 ha.), El Galaa (5 ha.), Metouia (10 ha.), Oudrer (10 ha.), Arram (10 ha.), Marath (10 ha.).

The project was completed in 1963.

Project No.: 664-12-520-159 A-C  
Project Title: Improvement of Domestic & Rural  
Water Supplies  
Project Dates: 11/27/59 - 12/31/62  
Contribution: U.S. (Counterpart/Grant) \$600,000  
GOT (Dollar equiv.) \$807,000

### Objective

In its attempts to settle its nomadic and landless people, the GOT has undertaken an extensive water resources development program which includes not only the development of major water sources for large-scale uses, but also the development of many minor sources. This project was designed to support the GOT's efforts in this connection.

### Results

159 A - Development of water wells drilled and tested under other projects by the installation of well points, pumps, pipelines and appurtenances to supply water for domestic use, tree and animal watering at 15 locations in the seven Gouvernorats of Grombalia, Sousse, Sfax, Kairouan, Gafsa, Gabes, Medenine. Approximately 1,300 ha. of orchards and vegetable crops benefited from this project.

159 B - Improvement and development of 220 small water sources (wells and cisterns) to provide water to nomadic and landless elements of the population. This expansion was conducted in all gouvernorats, with greatest concentration in the central and southern parts of the country.

159 C - Development and equipping of small water sources in 20 rural areas, principally in the center and south of Tunisia. The activities included equipping small wells with motor pumps or windmills, construction of animal watering troughs, water fountains, reservoirs, other wellhead construction, spring development and spring head construction, pipelines to village centers, etc.. Fixation of the population and livestock was the primary objective of most of the developments.

### Evaluation

The supplying of water for rural and agricultural use is an important factor in improving the social and economic welfare of Tunisia's rural population and these projects made a worthwhile contribution in that direction.

Review (November 1968)

Visits to a selected number of sites developed under this project showed that the installations were generally in good condition and being utilized for the purposes intended.

Project No.: 664-12-120-160 A,B,C & E  
Project Title: Combined Flood Control and Drainage  
Project Dates: 11/30/59 - 12/31/62  
Contribution: U.S. (Counterpart/Grant) \$631,000  
GOT (Dollar equiv.) \$325,000

### Objective

The project objective was to provide assistance to the GOT in its program of improving and developing extensive areas regularly affected by floods.

### Results

160 A Repair to Tebourba Canal. This project involved the repair of a bridge-canal which crosses the Medjerda river near the village of Tebourba and which supports the highway bridge and a water conduit for the main irrigation system of the north plain of the Medjerda Valley (20,000 ha.). In order to make the repairs, the left bank of the river had to be reconstructed by an earth fill and protected by rip rap and sheet piling. The two fallen spans of the bridge had to be built again.

160 B Flood Control and Protection of Lower Medjerda. In connection with the GOT program for the improvement and development of the Medjerda Valley, certain activities were undertaken to protect the lower valley from floods that regularly affect extensive areas through the construction of dikes and canals, improve the river channel so as to facilitate rapid exit of water during the periods of heavy rains, and stabilize the river channel by rip rapping, construction of jetties and the extension of existing dikes.

160 C Flood Control and Drainage - Sfax Area. The objective was to rechannel the oueds flowing near the southern part of the city of Sfax (Oued Khalifa, Oued Maou and Oued Agareb) in order to divert flood waters away from the city, and to eliminate property damage in the city of Sfax caused by the flood waters. This was achieved through the construction of a diversion canal on Oued Khalifa with a capacity of 400 m<sup>3</sup> of flow per second, a diversion dam on the Oued Khalifa with a 250,000 m<sup>3</sup> of volume, a weir drop on the Oued Agareb having a capacity of 580 m<sup>3</sup>/s and road culvert, and modification of the design of the railroad bridge on the Sfax-Gafsa line where it crosses the Oued Maou to handle a flow capacity of 700 m<sup>3</sup>/s.

160 F Flood Control and Drainage - Garra Sedjenane. This project involved the drainage of approximately 50 km<sup>2</sup> of low land northwest of the village of Sedjenane. This area was covered by water most of the year, caused by the Oued Chergui and by the overflow of Oued Magrat. By draining this area, the land was reclaimed and could be used to establish grazing lands. In order to establish permanent drainage, it was necessary to divert the Oued Chergui into the Oued Magrat and dig a new channel for the Oued Sedjenane about 2 km. downstream from the former junction.

#### Evaluation

The project sites were visited during their construction and found to be well planned and constructed. The Sedjenane drainage project resulted in the reclamation of about 5,000 ha. of pasture land. The Sfax project, involving the rerouting of the Oued Khalifa, has effectively prevented a recurrence of the previous flooding which in the past had been as high as three feet in the southern part of the city.

#### Review (November 1968)

An inspection has shown that the projects were in satisfactory condition and operating well, except for the changes to the railroad bridge on the Sfax-Gafsa line (Project 160C), which is to be completed after the next flooding conditions determine the exact modifications to be made.

Project No.: 664-11-830-161

Project Title: Stabilized Soils Demonstration

Project Dates: 6/18/60 - 6/23/64

Contribution: U.S. (TC/DG) \$44,000  
(Counterpart/Grant) 7,000  
GOT (Dollar equiv.) \$ 5,000

### Objective

The purpose of this project was to provide the services of a U.S. technician to the Tunisian Ministry of Education to teach trade school students and others how to use an inexpensive machine to produce stabilized soil building blocks. The desirability of developing the capability of making and using stabilized soil building blocks lies in the fact that they are of low cost and can easily be manufactured by relatively unskilled labor with a minimum of equipment.

### Results

A stabilized soil building block expert trained local workers in Tunisia in the techniques of making and using stabilized soil building blocks on two occasions under this project. The first of these was for a period of almost three years, from September 1960 to January 1963, and the second was for six weeks in 1965. A total of one hundred students were trained during the first program at the trade school, and twenty-five workers were trained during the second program at the Office de la Vallée de la Medjerda, one of the organizations of the GOT Ministry of Agriculture.

### Evaluation

During the first program several farm buildings and small houses were built at Sidi Thabet, a Ministry of Agriculture development farm near Tunis. No further programs were undertaken after the initial portion of the project, even though the characteristics of the blocks compared favorably to concrete and could be made at a less expensive price.

As a result of the second visit of the technician, the Office de la Vallée de la Medjerda planned the construction of about 3,000 houses for its workers using stabilized soil blocks. As of May 1966, twenty-five of these houses had been erected.

Project No.: 664-11-750-166

Project Title: Improvement of Accounting Procedures  
(Assistance to UTIC Business Center)

Project Dates: 7/13/61 - 7/31/62

Contribution: U.S. (Counterpart/Grant) \$16,800

GOT (Dollar equiv.) \$12,000

Objective.

To expedite the development of the Tunisian economy through assistance in alleviating the shortage of competent, properly trained office workers and modern business machines.

Results

The Union Tunisienne pour l'Industrie et le Commerce (UTIC) established a training school. Toward the establishment of this school, financial assistance was provided by the U.S. for the purchase of typewriters, accounting and bookkeeping machines. In addition, to assist the program of modernization being carried out, three special machines were purchased with U.S. funds; two of them to be used by the Treasury to institute a punch card system for its daily accounts, the third to permit the modernization of tax collection accounting at the Port of Tunis Customs Office.

Project No.: 664-51-620-169

Project Title: Chott Maria Agricultural College

Project Dates: Funding: 10/62 - 12/70  
Physical work: 10/62 - 12/70

Contribution:

U.S. (DL)	\$2,188,000
(104 (f) Loan - Dollar equiv.)	\$2,024,000
(TTC/DG)	\$2,240,000
<u>GOT</u>	
Counterpart (Dollar equiv.)	122,000
Trust Fund (Dollar equiv.)	370,000

Location.

Chott Maria, near Sousse

Objective

The objective of this project was to assist in modernizing Tunisian agriculture through the creation of an agricultural school complex which would assume a leadership role in agricultural education.

Project History

Shortly after gaining her independence, Tunisia undertook a reorganization of her agricultural system. One of the highest priority items in this task was the formation of an agricultural educational system designed to produce technicians who could modernize agricultural production. In seeking outside help on this problem, Tunisian Government officials began discussions in the late 1950's with AID on developing a program of technical assistance in agricultural education.

Following a study of Tunisian agriculture and agricultural education in 1961 by Professor Henry Ross of Texas A&M University, the Chief of the GOT's Division of Agricultural Education and Research went to the United States for first-hand observation of U.S. agricultural education.

As a result, the GOT decided that a land-grant type university, adapted to the situation in Tunisia, was needed for the development of Tunisian agriculture. AID then arranged for a feasibility study by a Texas A&M Team. The Team's report, prepared in early 1962, formed the basis for the loan and ongoing project. It called for a "new type of agricultural institution" designed to relate more closely agricultural education, extension and research to the current problems of individual farmers. The Tunisian government accepted the recommendations of the report and, with the assistance of the U.S. Government, established the Chott Maria School by law on December 31, 1962, calling it "Les Colleges Moyen et Secondaire d'Agriculture de Chott Maria". On October 26, 1962, a contract was signed with Texas A&M University to provide participant training, partial staffing and advisory services for the school. (A second contract with Texas A&M was executed on February 7, 1966). A Development Loan Agreement 04-020 for \$2 million was signed on September 2, 1964, to assist the GOT in financing the foreign exchange costs required for constructing and equipping the school.

The Architects Collaborative (TAC) was charged with the preparation of the plans, specifications and bid invitations for construction. Bids were invited in the fall of 1965 on the basis of a combined construction project, including both the Chott Maria School and the University of Tunis, Faculty of Law and Economics (Loan 664-H-015). The two AID-financed projects were combined for bidding purposes in a effort to attract bidders.

Three bids were received in January 1966, which were approximately 60-85% in excess of TAC's final cost estimates. The GOT considered, and AID concurred, that all the bids received in response to the invitation to bid were excessive, and consequently all bids were rejected by the GOT. The Franchi Construction Co., the low bidder, offered to negotiate the bid price with the GOT; after considering various alternatives, it was decided to offer all bidders the opportunity to negotiate and after reviewing the revised offers, the GOT and AID concurred in a bid award to Franchi. The total U.S. dollar price for construction of Chott Maria under the Franchi contract amounted to \$1,912,000. In approving the contract award, AID noted that since the construction contract consumed all but a fraction of the overall (\$2,000,000) loan amount, additional funds would have to be provided to cover non-construction costs, i.e. equipment and books. (An amendment to the Loan Agreement was signed on July 27, 1967, providing an additional \$410,000, thus bringing the total to \$2,410,000).

On August 20, 1966, a construction contract was signed between the GOT and Franchi. The GOT concurrently signed a supervision contract

with TAC. Construction started shortly thereafter and proceeded at a satisfactory rate.

In the meantime, a reexamination and realignment of Tunisia's agricultural education system resulted in a substantial redefinition of the project goal, though not (basically) in the construction activity under the above loan. The initial plan for the project envisaged the development of Chott Maria first into a secondary institution and then into a university-level school by 1970 or 1971. At the time this goal was formulated, it was not anticipated that ENSAT (Ecole Nationale Supérieure d'Agriculture) would expand its facilities and programs and increase its enrollment as rapidly as was the case. This, as well as related educational reforms all combined to severely limit the total number of students who would be available for university level training in agriculture. On the basis of these facts, it was not feasible to initiate a university level program at Chott Maria; instead, the school evolved into a secondary schools of agriculture, albeit one hopefully able to fulfill a leadership role in the GOT agricultural system for program development and in-service teacher training.

## Results

### A. Construction

The Chott Maria complex constructed under this project consists of an administration building, laboratory buildings, classroom building, library building, farm mechanics shops, demonstration building, three farm buildings, four dormitories and faculty housing.

Construction began in November 1966 and completion was scheduled for October 2, 1968. In November 1968, one building was occupied and by January 1969 all buildings were occupied.

Although the GOT has had the use of the buildings since November 1968, neither the contractor, The Franchi Construction Company, nor The Architects Collaborative has received final payment from the GOT as of October 1970. USAID has taken the initiative to resolve the outstanding problems which are holding back the final payments, and it is hoped that by December 31, 1970, final payment will have been made.

## B. Technical Assistance

The major accomplishments made under the Texas A&M University's direction are:

1. The training of 48 Tunisians in the general field of agriculture education, as follows:
  - (a) 34 with Bachelor Degrees
  - (b) 11 short-term training of approximately nine months
  - (c) 3 training for Masters Degrees
2. Providing teaching services of American professors who assisted in establishing a school farm and audio-visual center.

### Evaluation

On the construction side, considerable difficulties were encountered in the relationship between the builder, the supervising engineers and the GOT. The Architects Collaborative as of October 1970 is still not satisfied with the mechanical and electrical installations, though hopefully these deficiencies can be corrected by the contractor by November 1970. On the other hand, the GOT is encountering difficulties in providing the funds and qualified technicians needed to (a) complete certain work, such as the construction of a water storage tank and landscaping and (b) operate and maintain this very sizeable and expensive facility.

On the technical assistance side, the accomplishments fall short of the original goals set for Chott Maria, namely that the school would assume a leadership role in agricultural education. Texas A&M University was regrettably unable to convince the GOT to implement many of the university's recommendations during the life of the project. At one time, it appeared that the GOT would view the school as just another Agricultural High School. This has changed somewhat, for by October 1970 Chott Maria has become a specialized institution which will focus on producing specialists in horticulture. Only with time will it be possible to determine to what extent the project has made a substantial contribution to Tunisia's agricultural education and through it, to Tunisian agriculture.

Project No.: 664-11-140-170

Project Title: Assistance to Co-operatives

Project Dates: 2/25/63 - 12/31/67

<u>Contribution:</u>	U.S. (TC/DG)	\$55,000
	(Counterpart/Grant)	18,500
	GOY (Dollar equiv.)	\$18,500

### Objective

The objective of U.S. assistance to this project was to determine Tunisian needs in establishing cooperative institutions. It was to set forth a frame of reference to assist the GOY in its cooperative policies and activities and provide a basis for judging the role and effectiveness of further U.S. assistance which might be requested, especially in connection with the projected National School of Cooperatives.

### Results

1. A cooperative specialist in finance management (French national), under contract with the National Farmers Union (NFU), was assigned to Tunisia for approximately 40 months, beginning in September 1964. For the first 14 months, he worked with the Cooperative Section of the Secretariat of State for Plan and Finance, during which time he helped reorganize the fiscal responsibilities of Regional Cooperative Unions, made a study of credit unions in the Cap Bon region, and assisted in standardizing the auditing system for cooperatives. He subsequently was transferred to the Banque National Agricole (BNA) where he assisted in resolving the financing problems connected with agricultural credit and the development of agricultural credit societies and in improving their administrative organization.
2. Several short-term U.S. consultants were provided in connection with the proposed establishment of the Tunisian National School for Cooperatives, The Tunisian Program for Cooperative Farming and Mutual Credit Program.
3. Twelve Tunisian participants received four to six months training in cooperative middle management and in credit and management fields.

### Evaluation

The inability of the U.S. to recruit suitable French-speaking technicians, particularly a Cooperative Adviser, made necessary a reduction in the scope of this project and led to its eventual termination. The major objective of this project, that of providing extensive assistance in the establishment of a National Cooperative School, was not realized.

On the other hand, the Cooperative Finance Management Adviser was able to play a major role in the development of agricultural credit societies. With his transfer to the BNA, he was largely responsible for the highly successful program to expand the Mutual Credit Societies which were the source of production credit for small private farmers who did not have access to other sources of credit.

Project No.: 664-52-330-171

Project Title: Société de Fonderie et de Mécanique (SOFOMECA)\*

Project Dates: 1959 - 12/67

<u>Contribution:</u>	U.S.	(DLF Loan)	\$2,750,000
		(TC/DG)	170,000
		(Counterpart/Grant-Loan)	40,000

### Objective

This project was designed to provide technical services for start-up assistance, operating guidance and training of Tunisian personnel to assist the GOX in the operation of a new \$3.6 million foundry built to manufacture spare parts and rebuild existing railroad equipment, construct new freight cars, etc. The foundry was also designed to produce a wide variety of finished castings for the Tunisian metal-working industry. A DLF loan was initially provided to finance the procurement of rolling stock for the railways system, machine tools for the maintenance shop and an electric furnace for the foundry.

### Results

1. A DLF loan of \$2.75 million was provided to finance the procurement of rolling stock for the railway system, machine tools for the maintenance shop and a electric furnace for the foundry.
2. A team of American foundry technicians (5) were assigned to the project between July 1963 and August 1967. Its accomplishments include:
  - a) Installation of operating procedures, standards, quality control programs, and production schedules.
  - b) Training of Tunisians in the basic principles and advanced techniques of foundry operation.
  - c) Fourteen hundred patterns were constructed by, or under the direction of, the pattern maker; the training provided established a fully operational department with some forty employees, now under the supervision of a qualified Tunisian.

\* Project previously known as "Société Nationale des Chemins de Fer Tunisiens"

- d) Organizational charts, personnel requirements, operating schedules, metallurgical standards and testing procedures were established and introduced.

Evaluation

There is every indication that the project was successful in meeting its objectives. The Mission is currently in the process of preparing a final report on the project.

Project No.: 664-11-260-172

Project Title: Increased Agricultural Utilization of Phosphate Fertilizers

Project Dates: 6/23/62 - 10/31/64

Contribution: U.S. (TC/DG) \$36,000  
GCF (Dollar equiv.) \$10,000

### Objective

The purpose of this project was to assist the GCF by providing a fertilizer use expert to study the local consumption of fertilizers and to make recommendations as to the most effective manner of increasing the use of fertilizers in Tunisia.

The need for the project lay in the fact that Tunisian agriculture was for the most part not taking advantage of the widespread benefits to be obtained from the greater use of fertilizers in agriculture.

### Results

A report comprising a study of present fertilizer practices and recommendations for improvements therein and for the increased utilization of fertilizers was prepared by the expert under this project. The report was widely distributed among GCF officials and other people concerned with the use of fertilizers in Tunisia.

### Evaluation

While the program laid out in the report prepared under this project cannot be accomplished overnight, since the steps involved constitute in large part changing habits and ways of doing things which have been practiced for generations, it does show the way and it has evoked the interest of those persons and organizations in Tunisia who have the possibility of putting its recommendations into effect.

Project No.: 664-11-720-173  
Project Title: Economic Development Planning Assistance  
Project Dates: 3/28/63 - 3/31/67  
Contribution: U.S. (TC/DG) \$56,000  
GOT (Dollar equiv.) \$ 4,600

### Objective

The intent of this project was to assist the GOT in its economic development planning through the provision of external technical assistance in the form of short and middle-term specialists.

### Results

A credit specialist was recruited under the project; he completed a one-year assignment (September 1964 - August 1965) in the Office of the Chief, Financial and Programming Division, Secretary of State for Plan and Finance. His research work on new legislation and the structure of Tunisia's banking system led to the establishment of an Interdepartmental Credit Commission.

Seven officials with responsibilities in economic planning undertook an advanced six-month course on project analysis in the U.S. (February - August 1966). Five of the participants completed their course.

### Evaluation

It proved extremely difficult for AID to recruit American experts with adequate French language capability in the specific areas identified under the project\*, particularly on a short or middle-term basis and with limited lead time for recruitment.

The participant training programmed under the project was peripheral to its major activities and not tied to any institution-building or counterpart relationships.

In summary the project did not achieve the originally planned direct impact that could have been obtained had it been possible to recruit several U.S. specialists to assist in the formulation and implementation of Tunisia's Development Plan.

\* Tax policy and administration, mobilization of private and monetary savings, methods of determining investment priorities, industrial development planning, chemical industry development, improvement of budgetary analysis for capital project proposals, improvement of the overall budgetary system and improvement in the planning and execution of credit policies.

Project No.: 664-56-230-174  
Project Title: Sfax-Gafsa Company  
Project Dates: 5/10/62 - 6/24/68  
Contribution: U.S. (TC/IG) \$94,000 \*  
GOT (Dollar equiv.) 31,000

Objective

The target of this project was to establish the technical and economic feasibility of activities leading to increased production of rock phosphate in Tunisia.

Results

1. USAID entered into a contract with Dorr-Oliver Inc. for the purpose of providing technical assistance to eliminate difficulties in the operation of the Sfax-Gafsa Company's pilot calcination plant at Metlaoui. The difficulties experienced by Sfax-Gafsa were overcome as a result of this project.
2. USAID further financed a contract between the Tunisian Phosphate Mining Company and the Ralph M. Parsons Company for the execution of a complete economic, technical and financial feasibility study of the Phosphate Company's plans for expansion. A subsequent amendment of the AID-financed contract provided for an evaluation of the results of the operations of a pilot beneficiation plant, additional exploratory and evaluation work on the Srs El Quartane reserves and a restudy of one part of the project in the light of the plan to use an electrostatic separation enrichment process instead of a calcination plant.

The results of the Ralph M. Parsons feasibility study were utilized to support a \$7.5 million loan request to the Export-Import Bank.

\* An additional "overrun" of about \$29,000 is being claimed by the Parsons Company.

Project No.: 664-11-710-175  
Project Title: Public Safety/Police Training  
Project Dates: Funding: 12/62 - 12/70  
Physical Work: 10/62 - 6/70  
Contribution: U.S. (TC/DG) \$503,000  
GOT (U.S. Dollars equiv) \$74,000

Objective

To help the Surete Nationale, the Garde Nationale and the Telecommunications Branch of the Ministry of Interior (MI) continue to improve proficiency in maintaining Tunisia's internal security; to provide limited training, equipment and technical support in furtherance of this objective.

Results

Eighty-one participants were given training in the U.S. A special 1250 man force known as the Brigade de l'Ordre Publique (BOP) received in-country training in crowd/riot control by USAID Public Safety Advisors.

One PSA (Generalist) was assigned early in 1968 and another PSA (Telecommunications) was assigned during middle 1969 to give technical assistance in furtherance of the in-country training program. Also, they assisted in such other activities as conducting a survey of the Police automotive fleet and maintenance facilities and of the telecommunications network of the M.I. and in making recommendations to improve those operations.

A total of \$252,000 in police equipment, consisting of vehicles, radios, weapons and ammunition, tear gas supplies and miscellaneous police accessory items, was furnished as a direct contribution. In addition, the GOT purchased in the U.S. under program loan funding (H-026 & H-033) approximately \$500,000 worth of vehicles, radios and miscellaneous accessory items.

Evaluation

The BOP, in the course of training and thereafter, has proven its ability to handle potentially serious civil disturbances through the exercise of good judgement and effective control.

Project No.: 664-11-990-177  
Project Title: Disaster Relief  
Project Dates: 12/1/62 - 1/31/63  
Contribution: U.S. (S.A.) \$113,000

Objective

The objective of this project was to give emergency assistance to flood victims in the Sousse and Sfax areas.

Results and Evaluation

The Department of Defense supplied 14,000 blankets for the flood victims. The objective of the project was met and the project is considered satisfactorily completed.

Project No.: 664-22-120-179

Project Title: Oued Nebaana Dam & Irrigation

Project Dates: Funding: 10/1960 - 6/70  
 Physical Work: 3/62

Contribution: U.S. (DL) \$15,249,000  
 (104 (f) Loan) \$10,101,000

Objective

To assist the Government of Tunisia to increase its agricultural production, the U.S. Government made available through loans the foreign exchange costs and part of the local dinar costs for materials and services for irrigation water storage and distribution. The project was designed to provide, through the construction of a storage dam and well fields, irrigation water for over 5,000 hectares of tree and vegetable crops. (The original plan included domestic water supply for Sousse; this part was eliminated from the project in favor of an alternate source of better quality).

Description:

The project is to provide 35 million cubic meters (28,300 acre feet) of water for irrigation of 11 scattered irrigation areas totaling 5,007 hectares (12,520 acres). The project now consists of the following:

1. Sidi Massoud Dam, 63 meters high forming a storage reservoir of 86 million cubic meters (70,000 acre feet) on the Oued Nebaana, 47 kilometers northwest of Kairouan.
2. A small diversion dam and 6 km pipeline connecting the Bel Assoud River to the Sidi Massoud Reservoir.
3. A 126 km concrete pipeline, with a diameter of 1.4 to 0.6 meters, from the reservoir eastward to Sousse and south to Mahdia.
4. Eleven deep wells with collector pipelines and booster pump station to feed 10 million cubic meters of groundwater per

year into the main pipeline near Bled Sasseb, 35 km north of Kairouan. An additional four deep wells supplement the water supply on the Sbikha Perimeter.

5. Concrete feeder and distribution system pipelines from the main pipeline to the 11 irrigations areas totaling 5,007 hectares (12,520 acres).
6. Service roads, high voltage electric lines to dam and wells, wind breaks, and other appurtenant works.

### Financing

The project costs, including some land leveling, amounted to approx. \$16,270,000, plus an estimated 13,620,000 Dinars, bringing the total dollar equivalent to \$41,368,000. The United States Government has loaned Tunisia the total dollar cost at 3 1/2% interest over 30 years and has also made available through December 10, 1969, a total of 5,366,880 Dinars, making the total U.S. financial participation equal to 64% of the total estimated project cost.

### Project History

Plans for the Oued Nebzana Project were made by the Government of Tunisia, utilizing information collected and studies prepared by the French government and French consulting engineering firms, along with additional studies by agencies of the Tunisian Ministry of Agriculture and its various consulting engineers. On October 11, 1960, GOT and the USG signed a DL agreement, providing \$18,000,000 for foreign exchange costs, (part of this amount was subsequently deobligated) plus U.S. owned Dinars for part of the local expenditures. International Engineering Co. (IECO) of San Francisco was engaged by the Tunisian government as consulting engineers for the project and served in that capacity between January 31, 1961, and June 30, 1970.

The storage dam was designed by A. Coyne and J. Bellier, French consulting engineers. The main construction contract for the dam was signed with Utah Construction Co. on May 17, 1962, and construction of the dam was completed in 1966. The main pipeline construction commenced in 1965 and the line was placed in operation in 1970.

## Results

The dam and main pipelines of the Qued Nebaana Project are completed and (as of 8/70) the overall project construction is 95 per cent completed.

In June 1970, the Qued Nebaana Project was potentially able to supply irrigation water for irrigation distribution systems covering 3000 ha.; over 600 ha have been irrigated during the 1970 season. Contracts for the construction of the irrigation perimeters on an additional 2000 ha. are expected to be executed in the near future. One reason for the delay is that prior to 1970 the irrigated perimeters were planned to be farmed under cooperatives. In late 1969 the government policy changed and the lands are reverting to private ownership. The ownership boundaries are now being modified to conform to the pattern of the irrigation system, and to still unestablished maximum and minimum size ownerships permitted within the irrigation perimeters. While the ownership boundaries have not yet been definitely established, farmers have been given permission to irrigate some land on a temporary basis.

## Evaluation

The construction of the Qued Nebaana Project has proceeded according to the basic design, but progress has been slowed by lack of dinar financing for construction of the uncompleted works. Plans for water utilization have been radically altered by the change from cooperative farming to private farming. Much of the coastal irrigation areas are planted to mature dry farmed olive trees which many of the landowners are reluctant to remove in order to plant vegetables until they are convinced that the vegetable production is better for them. Some are beginning to interplant vegetables between the olive trees and some are beginning to irrigate their olive trees.

The year 1970 was the first using water from the Qued Nebaana and the initiation of irrigation at the same time as changing land ownership patterns has imposed problems which will extend the farm development period beyond what would normally be expected. While there is likely to be a surplus of project water in excess of the needs of the Qued Nebaana perimeters for several years, the project can be expected to ultimately achieve its objective of increasing the agricultural production of the area and providing additional employment for the local residents.

Project No.: 664-12-420-180  
Project Title: Occupational Training Centers  
Project Dates: 4/18/62 - 4/30/65  
Contribution: U.S. (Counterpart/Grant) \$1,588,000  
GOT (Dollar equiv.) \$1,478,000

### Objective

The purpose of this project was to assist the GOT through its Manpower Service Agency in establishing 6 Occupational Training Centers (at Kairouan, Ben Arous, Medenine, Jendouba, Bizerte and Kasserine) in order to increase the supply of skilled workers.

### Results

The construction and equipping of the following Occupational Training Centers were successfully completed:

Occupational Training Center, Kairouan  
Occupational Training Center, Ben Arous  
Occupational Training Center, Medenine  
Occupational Training Center, Jendouba  
Occupational Training Center, Kasserine (see Evaluation below)  
Occupational Training Center, Bizerte (see Evaluation below)

### Evaluation and Review (December 1968)

The completed Centers are in general being well maintained and utilized for the purposes intended.

In December 1968, the construction of the Kasserine OTC was approximately 75% completed. However, the Center is operating at approx. 90% of its planned capacity in conjunction with the Société Tunisienne de la Cellulose, a large pulp plant located in Kasserine. Since the USAID contribution in this case represents about 35% of the total cost, it can be assumed that the U.S. funds in this case have been fully utilized.

The construction of the Bizerte OTC has been completed, and the workshop equipment (not USAID provided) is due to arrive shortly.

Project No.: 664-12-110-182

Project Title: Agriculture School Construction

Project Dates: 6/29/57 - 4/30/65

Contributions: U.S. (Counterpart/Grant) \$2,522,000

GOT (Dollar equiv.) \$ 67,500

### Objective

The objective of this project was to provide assistance to the Agricultural Education, Extension and Cooperation Service within the Secretary of State for Agriculture in establishing and equipping practical agricultural schools.

### Results

Sub-Activity No. 1 - Collège Secondaire Professionnel Agricole, Gafsa. Construction and equipping of a practical agriculture school in the Gouvernorat of Gafsa on the ex-Colon Martel farm. The facilities provided included classrooms, dormitories, administrative building, staff housing, laboratory, livestock and crop building.

Sub-Activity No. 2 - Collège Secondaire Professionnel Agricole, Sfax. Construction and equipping of a practical agriculture school in the Gouvernorat of Sfax, on the Deport Domaine, located at Menzel Chaker. The facilities provided consisted of dormitories, classrooms, laboratories, administrative building, staff housing, water reservoir, workshops and farm service building.

Sub-Activity No. 3 - Collège Secondaire Professionnel Agricole, Tabarka. Construction and equipping of a practical agriculture school near Tabarka on the Guerin Domaine. The facilities provided were: dormitories, classrooms, laboratories, administrative building, staff housing, workshops, water reservoir and farm service buildings.

Sub-Activity No. 4 - Collège Secondaire Professionnel Agricole Viticulture, Bou Cherik. Construction and equipping of a practical school of agriculture at Bou Cherik in the Gouvernorat of Cap Bon. Dormitories, classrooms, staff houses and a wine cellar were provided.

Sub-Activity No. 5 - Collège Secondaire Professionnel Agricole de Mateur. Construction and equipping of a practical agricultural school in the Gouvernorat of Gabes, on the ex-Colon Triolet farm. The following facilities were provided:

administrative building, dormitory, staff housing, classroom, laboratory, livestock and crop buildings, farm shop and equipment service building.

Sub-Activity No. 6 - Collège Secondaire Professionnel Agricole de Mateur. Financing and equipping of an agricultural school at a farm in the Gouvernorat of Bizerte. The facilities provided consisted of a boarding school, administrative buildings, staff housing, livestock and crop buildings, workshops and service buildings.

#### Evaluation and Review (October 1960)

The construction of all six schools, which subsequent to an internal re-organization came under the jurisdiction of the Ministry of Education, has for the most part been completed; some of the schools are being further extended under Project 064-22-020-226.

While most of the schools are in satisfactory condition and are being used for the purposes intended, it was found in the course of on-site inspections that while the construction of the classrooms and dormitories of the school at Gabes had been completed, the buildings are not being occupied since there is no water and no electricity. It is apparently planned to utilize water from an artesian well 3 km. away, and to utilize the electric power lines which pass the school; however, the necessary pumps, transformer and other materials were not in evidence. Kitchen and shower equipment apparently also have not yet been installed and the construction of staff housing, provided for under the project, also has not yet been undertaken.

The Sfax school is being utilized, although the school does not yet have electricity, laboratory or kitchen equipment, and heating for the laundry and showers has not yet been installed.

In both cases, the Mission is following up with the GOT in order to assure that the necessary steps are undertaken.

Project No.: 664-52-230-184

Project Title: Societe Tunisienne de Cellulose (SNTC)  
(Loans A-003 & H-017)

Project Dates: Funding 5/13/59 - 12/9/68  
Physical Work 5/59 - 12/68

Contribution:

U.S.	(DL Loan A-003)	\$8,690,000
	(DL Loan H-017)	\$ 530,000
	(TC/DG)	\$ 67,000

Location

Kasserine

Objective

The purpose of this project was to provide equipment, materials, supplies and services required for the plant facilities to produce 80 tons per day of bleached esparto pulp. Physical facilities included a pulp mill located at Kasserine with adjoining power plant, water treatment plant, and an electrolytic caustic soda plant.

Project History and Results

This project was initially undertaken by AID/W in 1959 and liaison responsibilities were assigned to USAID/T in December 1961 in order to assure compliance with the AID financed contracts and terms of the DLF loan agreements.

The project has a long history of difficulties and problems, most of which arose as a result of differences between the two original partners, the Government of Tunisia and Parsons & Whittemore of New York City. These difficulties were largely responsible for a delay of almost two years in completing the construction of the mill. In January 1961, the GOT exercised its option and bought out the Parsons and Whittemore Co., but at the same time contracted with the U.S. firm to assume responsibility for the procurement of all equipment, its erection, the start-up of the mill and performance guarantees.

Construction and erection of the plant and equipment were completed in July 1963, and start-up operations began the following month. Under a management contract between the SNTC and P & W executed in June 1963, the U.S. firm provided a team of 12 professional and management technicians

and 72 operating technicians until December 1963. At that time, most of P & W's operating technicians were withdrawn from the plant and by August 1964, only 7 P & W professional and management technicians were still on board.

Four Tunisian employees of the SNTC were given training programs of 3 years duration at the Paper Institute in Quebec, Canada, and 115 were provided on-the-job training in European plants.

After start-up, serious technical difficulties were encountered, with the mill unable to achieve the rated daily production of 80 tons of pulp. Early in 1964, P & W made a detailed evaluation of the overall situation and developed a program for the correction of the various problem areas. This program called for the reengineering and for the procurement and installation of some additional equipment which hopefully would permit proper operations. In accordance with the program, the mill was shut down at the end of January 1965 in order to effect the various modifications called for and to install the additional equipment. The shut-down was scheduled to last approximately 1 month. Unfortunately, however, some of the problem areas, notably the grass preparation and cooking systems, continued to give difficulties after the changes had been made. At the end of April 1965, after the mill had been inoperative for 3 months, the President of the company decided to start it up again on a production basis in spite of the fact that some parts of the mill were still giving trouble.

When the mill was restarted, the company was able to bring about reasonably satisfactory performance so that, as of Sept. 1965, a daily production of about 60 tons was achieved.

In the meantime, the British engineering firm Manderstan Technical Services was engaged by the SNTC (in Spring 1965) to study the mill situation and make recommendations for a permanent solution of the problem.

On June 25, 1965, the SNTC petitioned the Paris International Chamber of Commerce to arbitrate a claim of approx. \$6.8 million against P & W arguing that the U.S. firm had failed to give satisfactory performance under the January 1961 contract between the two companies. The SNTC argument was based on (a) its contention that the plant had never been able to satisfy the contract guarantee test run provisions, (b) the costs involved in making the technical modifications required so that the plant might operate as planned and (c) the operating losses between 1963 and 1965 which had resulted from the technical problems. (As of 9/70 a decision is expected as of the end of the year).

In the meantime, AID agreed to finance an audit of the SNTC financial situation. Ernst and Ernst was engaged for this purpose and commenced the audit in November 1965. During the audit the scope of work was extended to include evaluation of the financial and economic merits of the proposals made by Manderstam Technical Services.

The final report of the Ernst and Ernst audit was received in September 1966. The data presented, including the several projections for possible future courses of action, revealed that the situation of the Company was such that there was no reasonable hope that financial stability could be achieved unless relief was provided from outstanding indebtedness.

As a result of the Ernst and Ernst audit report, responsibility for the repayment of the AID loans was transferred from the SNTC and the GOT. At the request of the GOT and in accordance with an agreement dated October 31, 1969 between the GOT, SNTC and AID, the outstanding loans were rescheduled to provide for their repayment over a period of 25 years.

Despite the financial losses incurred by the SNTC, it has over the past years taken steps to bring about certain modifications in the plant which resulted in a considerable improvement in its production. Moreover, since the GOT assumed SNTC's debt burden, the company's financial position has improved to the extent that its receipts in 1967-68 were sufficient to cover the plant's entire cash operating expenses. With the continued improvement of the mill's production capacity, the addition of a (German-financed) paper mill and the maintenance of favorable market conditions, the company has a good chance of putting its operation on a viable basis.

Note: USAID provided additional assistance to the plant through Projects 664-15-270-051, Industrial Management Training and 664-12-230-150, Supplemental Water Supply.

Project No.: 664-11-690-185

Project Title: Primary & Secondary School Construction

Project Dates: 6/15/59 - 12/31/63

Contribution: U.S. (Counterpart/Grant) \$15,265,000

GOT (Dollar equiv.) \$22,658,000

### Objective

The target of this activity was to assist the GOT in attaining, through the use of counterpart and U.S. owned local currency financing, its goal of providing sufficient primary and secondary classrooms for Tunisian children.

### Results

#### 1. Primary Schools

The U.S. provided approximately \$4,910,000 in counterpart funds toward the construction of 2,700 classrooms and housing units, which represented in excess of 90% of all such units constructed since 1958.

#### 2. Secondary Schools

Approximately \$10,355,000 in counterpart funds were made available to support GOT secondary school construction of the following schools:

Kairouan Lycée  
Co-ed Lycée of Bizerte  
Secondary School & Collège Moyen - Menzel Temine  
Gabes Boys College  
Technical School of Tunis  
College Sadiki, Tunis  
Sfax Boys Lycée  
Collège Technique, Sousse  
Supervised Training Center, Gammarth  
Gafsa Boys College  
Intermediate & Secondary School, Jendouba  
Intermediate & Secondary School, M'Saken  
Baja Boys College  
Monastire Boys College  
Secondary School, Mahdia  
Nabeul Lycée

Evaluation and Review (November 1968)

Work on the project schools, primary classrooms and housing units has long been completed. They are in general being well maintained and being utilized for the purposes intended. With Tunisia's continuing emphasis on primary and secondary education, the country continues to reap the dividends of this extensive project.

Project No.: 664-52-230-186 (Loan 664-A-006)

Project Title: El Aouina International Airport

Project Dates: Funding: 1/27/61 - 12/31/70

Physical Work: 7/61 - 6/69

Contribution: U.S. (DL) \$4,875,000  
(104 (f) Loan) \$2,356,000

GOT (Dollar equivalent) \$3,251,000

### Objective

The objective of this activity was to assist Tunisia in developing the Tunis El Aouina Airport (one of several airfields in Tunisia constructed as military facilities during World War II) into a modern terminus with a capability of adequately meeting the anticipated traffic. Towards this end, the project provided for the construction of a 10,000 foot jet strip with taxiway, aprons, and a control tower as well as lighting, marking, navigational aids, electrical equipment and related facilities, exclusive of terminal facilities, adequate for use by commercial jet aircraft.

### Results

Thanks to this project, the technical facilities of the Tunis/Carthage International Airport have been greatly expanded and modernized, permitting the airport to accept aircraft of all sizes and to operate on a 24-hour basis. At the present time (Summer 1970), the airport averages 25 international arrivals and departures daily, in addition to approximately 35 charter flights per week.

### Project History

On the basis of the feasibility study prepared by a French consulting firm, the GOT concluded in the late 1950s that the first step required in a long range plan for the development of the airport should be to provide a modern runway of 10,500 feet, together with the necessary technical facilities, capable of handling the largest modern jet aircraft. The forecast of traffic contained in the feasibility study did not indicate passenger traffic increases sufficient to justify the construction of new terminal building before 1965.

On the basis of these conclusions, the GOT in 1961 made application for, and DLF approved, a loan in the amount of \$5.1 million to cover the foreign exchange costs of this first part of the GOT program. The implementation of this major activity was divided into four separate phases:

- Phase I Construction of runways, taxiways and ramps
- Phase II Lighting (runway, taxiway and approach) and power planning, procurement and installation
- Phase III Radio and electronics planning, procurement and installation
- Phase IV Planning and construction of technical blocks.

Phase I (construction of runway) was contracted to Morrison-Knudsen for \$5,700,000, of which 40% was in dollars for the foreign exchange costs and 60% in dinars for the local currency costs. Construction was initiated on July 15, 1961 and completed in January 1963, five months ahead of schedule.

The engineering for the runway lighting, communications and navigation aids equipment, and the control tower, which had been performed by a French firm, was unacceptable to AID since it was not in accordance with U.S. standards and costs and thus not applicable for U.S. procurement as required by the Loan Agreement. These elements of the project, therefore, had to be re-engineered by a U.S. engineering firm. This work was begun under a contract with Skidmore, Owings, and Merrill (SOM) signed in June 1963, providing for the preparation of a Master Plan. Under a second contract with the same firm, the detailed engineering, working drawings and specifications for the electrical and electronic equipment and buildings were prepared, and invitations to bid were released in October 1964. Responses to the Invitation to Bid were received in December 1964 and a contract was signed with Lord Electric Company, Inc. of New York (LEC) on March 12, 1965.

The GOT/LEC contract provided for the supply and installation of all electrical distribution systems (high and low tension), the sub-station and emergency field power system, and the runway, taxiway and parking area lighting. It also provided for the transportation and storage of all FAA procured materials and the installation of those lightning equipments procured by the FAA, such as the VASIs and the high intensity approach lighting. LEC, as the American general contractor, was also made responsible for the construction of the technical buildings and the supply of utilities there to.

The GOT/LEC contract called for an overall contract price (less reimbursable items) of \$1,690,000, 68% of which (\$1,149,200) in U.S. dollars and 32% (283,920 dinars) in local currency.

The GOT entered into two contracts under the Loan with the FAA in May 1964. One of these (Project 664-22-370-234) provided for the FAA to procure electrical and electronic equipment and the tower cab; the other (Project 664-11-370-057) for the services of FAA technicians to install the electronic equipment. Shipment of this equipment and materials was the responsibility of LEC under the terms of their contract with the GOT, as noted above.

As part of the SOM/GOT contract mentioned above, SOM developed a study of the terminal requirements of the airport and a feasibility analysis of a new terminal. This was completed in August 1964 and submitted to AID in September 1964 with a Plan letter requesting a loan of \$6,500,000 for the foreign exchange costs. After preliminary reviews and queries by USAID and AID/W, a supplemental report was completed by SOM in March 1965. This deleted certain items requested in the original feasibility study; namely, the maintenance hangar, the freight building and the fire crash building, and reduced others, such as apron requirements. (These later were added to the overall plan to be furnished by the GOT.) The revised program reduced the GOT programmed expenditures to approximately \$9 million, of which the estimated foreign currency element was to be \$5 million. A revised loan request for this amount was submitted by GOT to AID.

Notice to proceed was given to LEC on April 5, 1965, with work starting on June 5, 1965. LEC sub-contracted the construction work to a Tunisian firm, Ali M'heni, while the electrical installation work was sub-contracted to the local firm of Chauffour Dumez.

The first FAA installation engineer arrived in December 1965, and proceeded with opening and inspecting electronic and other items procured by FAA. He discovered a considerable amount of water damage for which claims were prepared and made.

The delivery of the equipment ordered by the LEC and the FAA and the construction and electrical installation were delayed somewhat. LEC completed the major portion of its work by February 1967 (the contract called for the completion of the work within 500 days after the June 5, 1965, startup date, or by the end of 1966) except for a punch list covering some finish work and adjustments. The FAA completed 95% of its equipment deliveries and electronic installations, including that of the control tower, by mid-summer 1967, and then proceeded with the time-consuming work of adjusting, testing, flight checks, training, etc. The Tunisian Civil Aviation Authority commenced limited operation of the control tower facilities and electronics installation in August 1967 and assumed full control with the departure of the last of the Civil Aeronautics Advisory Group (CAAG) personnel in June 1968. For all practical purposes, physical work under the loan ended with the departure of the CAAG.

Unable to resolve with the problems posed by the punch list and in the absence of final settlements between LEC and the Tunisian sub-contractors, the GOT in September 1968 officially terminated its contract with LEC for default.

Since that date, the GOT has carried out the remaining work on the punch list. In September 1969, USAID contracted with the Parsons Company of California for a technician to review the status of the punch list and make any appropriate recommendations. USAID also authorized the purchase under the loan of spares, spare parts and replacement items covering some of the items on the punch list. Final deliveries of all items are expected to be made by September 1970.

Action on the proposed terminal loan and construction languished until, on April 17, 1967, the GOT and USG signed Loan Agreement H-027 for the purpose of financing the preparation of final plans, bidding documents and related architectural and engineering services for the proposed airport terminal building. On January 17, 1968, the GOT signed a contract with the Parsons Corporation for the performance of this work, and in May 1969, DL Loan H-034 for \$6.2 million for the construction of the airport terminal was signed between the GOT and the USG. Documentation was completed in August 1969.

#### Evaluation

In conjunction with DL Loan H-028, Fire/Crash and Rescue Equipment, and the Loan H-043 for the construction of a new terminal building, this project provides Tunisia with a modern airport complex able to cope with the increasingly heavy traffic demands of the coming decade, and thus effectively contributes to Tunisia's economic well-being by facilitating the ever-increasing influx of foreign visitors.

While generally successful, the execution of the project left something to be desired and resulted in considerable dissatisfaction on the part of both the GOT and USAID. Problems resulted from (a) contractual provisions (making LEC responsible for the shipping of navigational aids and electronics equipment procured by, and destined to be installed by FAA raised protracted questions of responsibility when the equipment was received in a damaged condition), (b) host country administration (LEC encountered considerable delays in clearing materials through customs and in effecting GOT local currency payments), (c) inadequate supervision on the part of the architects (SOM provisionally accepted the facilities on behalf of the GOT from LEC on December 15, 1966, only to have the GOT subsequently discover many unfinished or incorrect items not previously noted), (d) inadequate definition of responsibilities of borrower and contractors in the direction of the project

(SOM seems to have left to the GOT many of the supervisory responsibilities which under normal circumstances should have been carried out by the supervising architect) and (e) inexperience on the part of IEC in operating under conditions encountered in Tunisia and sub-contracting too large a share of the work.

Finally, looking at the project as a whole, it is very difficult to understand a delay of almost five years between the submission of a feasibility study and loan request for a new terminal building -- and even more surprisingly, four years between the submission of an amended loan request, incorporating the recommendations made by USAID and AID/W -- and the final approval of the loan.

Project No.: 004-12-020-187  
Project Title: Algerian Refugee Relief  
Project Dates: 1958 - 1962  
Contribution: U.S. (PL 480 Title II Commodities) \$19,095,000  
GOF (Dollar equiv.) \$ 1,665,000  
Other Donors \$ 9,250,000

Objective

To provide a continuous supply of agricultural commodities in order to maintain a basic food ration for Algerian refugees during the emergency conditions.

Results

During the five-year period of the activity, the following amounts of agricultural commodities were distributed:

79,400 MT of wheat  
1,720 MT of flour  
660 MT of milk  
930 MT of rice  
510 MT of beans  
506 MT of cheese

In May and June 1962, 10,000 tents were distributed prior to the refugees' return to Algeria.

Project Completion

After the signing of the Evian accords and the proclamation of Algerian independence and the repatriation of the vast majority of refugees, the emergency relief measures initiated in 1958 were phased out.

Project No.: 664-22-120-193  
Project Title: Deviation of Qued Gabes  
Project Date: 1/14/63 - 8/17/65  
Contribution: U.S. (Counterpart/Loan) \$1,667,000

Objective

To assist the GOT by financing the construction of certain flood control measures for the city and environs of Gabes.

Location

Vicinity of Gabes.

Results

The project involved the construction of a diversion of the Qued Gabes by a canal about 3500 meters in length, a diversion dam, a new section of Highway GP 1 and one bridge.

Review (September 1968)

The project is in satisfactory condition and being utilized for purposes intended.

Project No.: 664-22-120-194  
Project Title: Soil and Water Conservation  
Project Dates: 6/28/63 - 12/31/65  
Contribution: U.S. (Counterpart/Loan) \$5,399,000

Objective

The objective of the project was to support financially the GOF's extensive "Soil and Water Conservation (CES)" program which was estimated to cost a total of \$20.7 million and provided for the utilization of 20-23,000 full-time ex-LCSD laborers (12.5 million workdays) over a two-year period.

Results

The entire program was expected to include the following activities:

1. Terracing: 80,000 ha.
2. Cultivation (trees and cereals) 60,000 ha.
3. Contour Cultivation: 150,000 ha.
4. Improvement of Range Lands: 450,000 ha.

Project No.: 664-26-220-200

Project Title: STEG I, Loan H-021 <sup>1/</sup>

Project Dates: Funding: 9/2/64 - 6/30/69

Physical Work: FY 66 - FY 71

Contributions: U.S. (DL) \$7,300,000

### Objective

The loan of \$7,400,000 was authorized to finance the U.S. costs of procurement by STEG (Societe Tunisienne de l'Electricite et du Gaz) of equipment and materials to rehabilitate and expand the Tunisian electrical distribution system throughout the country.

150 subprojects were planned to assure electrical power required to support industrial sector expansion, modernization of agriculture and the rapid increase in tourism and related hotel construction. They included the rehabilitation of sections of obsolete distribution lines; reconstruction of substandard transformer stations; replacement of unsafe or underrated equipment; and construction of new distribution circuits to serve expanded loads, provide electric power to new housing and to areas not previously served and for new undertakings in industry, tourism, and irrigation throughout Tunisia.

### Project History

The Loan Agreement was signed on September 2, 1964. The funds were committed in two portions - \$2.5 million in the first and \$4.9 million in the second. Materials purchased under the first commitment began to arrive in Tunisia in January 1966 and project construction began in June 1966. Orders for the second portion of the equipment were placed in April 1966. All material contracted for under the loan arrived in Tunisia by April 1968. Scheduled completion of all projects financed under this loan was June, 1969. This date has now been extended to the end of December, 1970.

### Results

The total U.S. cost of material purchased under this loan was \$7,301,865. The net amount of material for construction is about \$6.6 million, plus about \$730,000 reserved for spares for future use. As of 30 April 1970, 91% of the material had been issued from the Tunis warehouse to the regions to

1/ STEG II (Loan H-034) under the same project number is active as of 9/1/70.

complete planned projects. All materials, less the amount reserved for spares, breakage, etc., were to have been completely utilized by the end of 1969. Several factors have contributed to STEG's inability to complete the planned projects on time, i.e., damage caused by 1969 floods, inability of consumers to pay installation costs and absence of modern wire and cable laying equipment, as well as limited technical knowledge. The Mission is studying a proposal for establishing a revolving fund to assist potential consumers to meet installation costs. Technical assistance (NRECA technician) to help speed installation has also been provided. To further speed item utilization, the Mission also has recommended that STEG procure a cable laying machine.

It is unlikely that the target date, extended to December 1970, will be met, but substantial progress to this end is being made.

Project No.: 664-12-170-201  
Project Title: Reforestation Program  
Project Dates: 10/7/63 - 3/1/65  
Contribution: U.S. (Counterpart/Grant) \$5,952,000  
GOT (Dollar equiv.) \$2,452,000

Objective

To provide funds and equipment for 21 projects comprising the GOT "reforestation program", for the period June 1, 1963 to December 31, 1964.

Results

The project provided for the planting of approximately 410,000 ha., utilizing the services of approximately 15,500 former LCSD workers, in the following areas:

<u>Gouvernorats</u>	<u>No. of ha. planted</u>
Jendouba	50,000
Beja	17,000
Bizerte	5,000
Le Kef	55,000
Kasserine	193,000
Gafsa	50,000
Sfax	3,000
Keirouan	18,000
Sousse	2,000
Nabeul	7,000
Tunis.	10,000

Also included in the project was the procurement of a considerable part of the necessary equipment, including 34 trucks, 55 tractors, 5 graders, 92 trailers, 13 vans, 5 water tanks and 24 miscellaneous vehicles.

### Evaluation

The project was completed on schedule. The Forest Service maintained control of the areas to protect them from grazing by livestock while the trees were becoming well established.

Project No.: 664-22-830-203

Project Title: Rural Cooperative Housing

Project Dates: 8/29/63 - 6/24/64

Contribution: U.S. (Counterpart/Loan) \$1,428,000

GOT (Dollar equiv.) \$1,164,000

### Objective

To assist the GOT in financing its Rural Cooperative Housing Program, designed to upgrade the housing of Tunisia's rural population.

### Results

This project involved 532 housing units for 15 agricultural production cooperatives created in the North (Tadjerouine, Le Kef, Le Sers, Siliana, Jendouba, Medjez El Bab) and 1,000 units planned for irrigation perimeter cooperatives (O.M.V.V.M., Ouchtata, El Macuarria, El Azib).

Units normally consisting of two bedrooms, a small kitchen, a toilet, a small fenced yard for chickens and a small vegetable garden were constructed in the following areas:

<u>Gouvernorat</u>	<u>Name</u>	<u>Number of Units</u>
<u>Le Kef</u>		
Tadjerouine	Muzart	25
Le Kef	Angotti	52
Le Sers	Guarder	67
Siliana	Raysse	62
	Scembri	30
	Boglio	23
	Coursoul-Antonini	21
	Dancet	24
	Schultz-Lavis	55
	Besson	19
<u>Jendouba</u>		
Jendouba	Dubounet	22
	Savalli	40

<u>Gouvernerat</u>	<u>Name</u>	<u>Number of Units</u>
<u>Beja</u>		
Medjez El Feridj	Avadler	26
	Aviation	36
	Bakel	30
	<u>Total</u>	<u>532 Units</u>

Irrigation Perimeters

<u>Name</u>	<u>Number of Units</u>
O.M.V.V.M.	830
Ouchtata	70
El Haouaris	70
El Azib	30
<u>Total</u>	<u>1,000 Units</u>

Evaluation

The project was instrumental not only in providing much-needed housing in rural cooperatives, but also resulted in increased employment of a sizeable labor force.

Review (Summer 1968)

While it was not always possible to specifically identify those units which were financed jointly by USAID and the GOT, (the actual number built exceeds those financed in part by USAID - see also Project 664-12-830-067) the homes which were observed were generally in good condition and well cared for.

Project No.: 664-22-190-204  
Project Title: Agricultural Equipment (Loan 664-H-016)  
Project Dates: Funding: 10/63 - 4/70  
Physical Work: CY 1965 - 1970  
Contribution: U.S. (DL) \$5,255,650  
(104 (f) Loan - Dollar equiv.) \$ 995,000  
(TD 460,000)

Location:

Five different departments of Ministry of Agriculture:

Production Agricole Vegetale (PAV)  
Office des Terres Domaniales (OTD)  
Forestry  
Hydraulique, Equipement Rural (HER)  
Union Centrale des Cooperatives de Motoculture (UCCM)

Objective

Finance (1) the procurement and assembly costs of agricultural equipment and spare parts, along with related services, and (2) machinery for 16 regional repair shops, for the purpose of development of the agricultural sector, viz., fruit-trees planting, reforestation, soil and water conservation, and similar activities.

Project History

Loan signed October 31, 1963, with Final Disbursement Date of April 30, 1967. Loan amended December 9, 1965, to add shop machinery, tools and related services for the maintenance of agricultural equipment. Final Disbursement Date revised to April 30, 1970.

Results

Activity on this project was interrupted in the fall of 1969 when the GOT dropped the Cooperative scheme for agricultural development. Alternative uses of the agricultural equipment are being explored. Amendments to the Project Agreement to permit the relocating of shop machinery to more strategic sites is currently under study by USAID and AID/Washington. ✓

### Evaluation

Due to the events noted above, there has been only partial attainment of the original objectives of the Project. Final evaluation must be postponed until alternative plans have been developed and there is sufficient time and effort expended on them to allow a meaningful assessment.

Project No.: 664-12-330-214  
Project Title: Tunisian Disaster Relief  
Project Dates: 11/23/64 - 6/30/65  
Contribution: U.S. (S.A.) \$144,000  
GOT (Dollar equiv.) \$ 58,000

#### Situation at Time Project Initiated

On October 30 and 31, 1964, Tunisia was inundated by disastrous rains which caused considerable damage to life and property. The railway bridge at Khledia, on the railway line from the Port of La Goulette to the phosphate mines of Kalaa Djerda and the iron ore mines at Djerissa, was completely washed out by the floods. The replacement time of construction of a new, conventional type bridge would have required an estimated 6 months. This would have resulted in losses of \$4-6 million in foreign exchange through inability to ship phosphates and iron ore. Domestic losses were estimated at 201,000 D in railroad revenues and 50,000 D in port authority fees per month. In addition, up to 1,500 employees would have been laid off once the storage capacity of the mines had been reached.

#### Objective

The purpose of this project was to assist the Government of Tunisia in the emergency reconstruction of a railway bridge at Khledia with a Bailey bridge. Material and personnel were supplied by the U.S. Army Corps of Engineers.

#### Location

Khledia (23 km. south of Tunis on M.C. 36).

#### Results

The U.S. Corps of Engineers supplied a Bailey Bridge of appropriate size and capacity to replace the destroyed railroad bridge. This was done within 30 days of receipt of the request for assistance by the GOT.

#### Evaluation

This project is considered to have been exceptionally productive. It was made possible by the close cooperation of the SNCF, the Tunisian Army and U.S. Army personnel. The effort was greatly appreciated by Tunisia and much good will was generated. Finally, the avoidance of losses of revenues and of employment were obviously greatly beneficial.

Review (November 1968)

The Bailey Bridge is still in place, although no longer being used. It has been recommended to the GOI that the bridge be dismantled and given a protective coat of paint before being placed in storage for future use.

Project No.: 664-25-950-216

Project Title: Société Tuniso-Américaine de Développement (SOTAD) (664-R-022)

Project Dates: 4/6/65 - 4/25/66

Contribution: U.S. (Colley Loan - Dollar equiv.) \$60,000

Objective

The purpose of this Cooley loan was to lend to SOTAD the dinar equivalent of \$60,000 for the acquisition of equity share capital of:

1. Claude Gozlan Company, Inc. to establish a new division for the production of hand-finished brass products, and
2. the Rectif Company Limited to establish a new division for the manufacture of oil drilling bits.

Results

The loan has been drawn down - both divisions were successfully established.

Project No.: 664-11-460-225  
Project Title: Manpower Supply & Demand Analysis  
Project Dates: Funding: 6/9/66 - 6/30/69  
Physical Work: 6/9/66 - 10/1/69  
Contribution: U.S. (TC/DG) \$141,000

### Objective

To assist the Government of Tunisia in establishing a continuing institutional capability for developing, analyzing, and evaluating data on manpower availability and requirements, so as to enable the GOT to identify alternative manpower policies and make and execute sound manpower decisions.

### Project History

The project, proposed by the Mission in January 1966, was an outgrowth of Project 11-460-045, Employment and Training Services, which had as its specific targets a) the establishment of an effective recruitment and placement service, b) the collection, analysis, and dissemination of necessary labor market information, c) the establishment of a modest employment counseling service and d) assistance to agencies concerned with social and economic planning or implementation involving manpower. By the time Project 045 was phased out in FY 1966, it was found that it had not resulted in the establishment of a viable program for collecting and analyzing labor market information, nor had some of the other goals been met. ]

Three American technicians were directly involved in the project, one on a part-time basis until his departure from the post in mid-1967, the other two (one labor statistician/economist and one occupational analyst) on a full-time basis.

After the arrival of the labor statistician in November 1966, existing GOT manpower collection and analysis programs were evaluated; on the basis of these reviews, he set out to help establish an efficient system for the collection and analysis of statistical and economic data. Questionnaires and procedures for collecting detailed manpower data from industrial establishments were prepared; a pilot survey in the wood industry was conducted, an index of Tunisian business establishments was begun, etc. However, it soon became obvious that the relatively unskilled staff of the Employment Service was not in a position to employ the rather sophisticated data-gathering techniques necessary to provide

their headquarters with the required information. As a result, the statistician subsequently spent a considerable part of his time in the development and training of local professional and semi-professional employees, while at the same time working with available personnel on statistical analysis.

The occupational analyst arrived in October 1967, his arrival delayed due to difficulties encountered in recruiting a suitable individual. Before departing on June 14, 1969, he concentrated his efforts on preparing an index of occupational titles from a variety of sources, the formation of Vocational Advisory Committees to assist in the development of occupational definitions, and a training program encompassing the study and development of methods and procedures for defining and classifying occupations.

### Results and Evaluation

The project resulted in a substantially increased data collection capability of the OFPE. A staff was recruited and given considerable training, a workable organization evolved, data collection and analysis programs were started. The work accomplished will serve as a solid base for continuing assistance being provided the Office by other donors. In the area of statistical analysis, the results were less positive, due in large part to the absence of qualified manpower and the need for longer-term training, although here too considerable progress has been made, especially pertaining to strengthening the OFPE's capacity for some of the more routine statistical and research functions. The work of the occupational analyst was hampered by the absence of counterparts, but nevertheless resulted in the first steps towards establishing a meaningful system of occupational definitions and job descriptions. Probably the most detrimental aspects both technicians encountered, aside from the absence of qualified manpower, was the fact that the Employment Office during their stay was in a constant state of reorganization, with individuals and units shifted continuously.

Note: For details on this project, see USAID/T Evaluation Report 69/3 of 12/31/68 and PARs prepared as of 4/1/69 and 9/30/69.

Project No.: 664-22-620-226  
Project Title: Agricultural Vocational Training Institutions  
Project Dates: Funding: 2/67 - 5/67  
Physical Work: CY 1966 - 1970  
Contribution: U.S. (104 (f) Loan - Dollar equiv.) \$2,327,326  
GOT (Dollar equiv.) \$1,176,937

Location:

The schools covered by this project are 5 Agricultural Training Centers (Centres de Formation Professionnelle Agricole) in Bizerte, Beja, Medenine, Tozeur and Sfax, and 9 Agricultural Middle Schools (Colleges Moyens Agricoles) in Sfax, Tabarka, Bou Cherk, Beja, Kasserine, Bizerte, Gabes, Souk El-Khemis and Gafsa.

Objective

The objective of this project, which is a continuation of Project 182, was to expand the 14 above-mentioned schools so as to increase their enrollment capacity. As indicated in the Four-Year Plan, Tunisia was faced with an expected shortage of skilled agricultural workers. Between 1965 and 1971 - according to the ten year projections - enrollments of agricultural training centers had to be increased from 1,300 to 3,500 students. Similarly, agricultural middle schools, during that period, had to produce 215 more graduates per year; this project was expected to produce 80 of these 215.

Project History

From the outset, the expansion of the agricultural schools under this project met with difficulties in view of their rural locations and the resulting lack of a utilities infrastructure. The need to construct, in conjunction with the projected school expansion, such facilities as water tanks and staff housing, and to procure and install electric generators, kitchens as well as laundry and shower facilities has delayed the completion of the projected expansion. Further delays were encountered when the Agricultural Middle Schools came under the jurisdiction of the Ministry of Education in 1967. In 1970, most of the schools were

transferred back to the Ministry of Agriculture, which has resulted in renewed and active attention to these educational facilities. However, in view of the recent reorganization of agriculture in Tunisia, the future utilization of the facilities completed is now undergoing an extensive reappraisal.

### Results

The construction of new facilities has been completed at 13 of the 14 agricultural schools covered by this project. The fourteenth school - the Souk El Khemis (Bou Salem) Agricultural Middle School - has been set up on an old farm which was renovated for this purpose. Construction of new premises for this school had to be delayed due to the GOT's dissatisfaction with the proposed site; in addition, the 1969 floods damaged the proposed site to such an extent that further construction plans had to be abandoned.

It should be noted, however, that of the 14 schools, 5 are not now being used as originally proposed in the project agreements. The Agricultural Middle Schools of Gafsa and Kasserine have been transferred to the Ministry of Education and are functioning as Teacher Training Schools. The Colleges Moyens Agricoles in Gabes and Bou Salem have been turned into Children's Villages and the Tabarka Middle School has become the Forestry Institute. Finally the College Moyen Agricole of Beja has been upgraded into what is now referred to as the "Institut de Machinisme Agricole et de Genie Rural."

### Evaluation

In spite of the manifold changes and delays that occurred during the execution of this project, it appears that initial targets have largely been met. Enrollments for the 14 schools under this project was 1,759 in 1965 and 2,668 in 1969, an increase of approximately 52%.

Project No.: 664-22-310-227

Project Title: Road Construction and Improvement

Project Dates: 5/5/66 - 12/31/67

Contribution: U.S. (Counterpart/Loan) \$835,000

GOT (Dollar equiv.) \$314,000

### Objective

Improvement of Tunisia's road system, including grading, resurfacing and widening of existing roads and the construction of bridges and entirely new roads.

### Results

The project included construction of:

1. new section of road about 11 km. long, located 8 km. west of Kairouan and connecting Highway GP 3 (Pont du Fahs - Kairouan) with GP 3 (Kairouan - Gafsa), while bypassing Kairouan;
2. a 22 km. section of road beginning about 25 km. east of Sbeitla, to complete Highway GP 3 from Kairouan to Gafsa;
3. a 10 km. section to complete the Gafsa - Tozeur road.

### Evaluation

This improvement of highway infrastructure favorably influences industrial, agricultural and tourist development of the country by providing better communication, while at the same time providing employment to large numbers of the unemployed.

### Review (September 1968)

Roads have been constructed and are being fully utilized.

Project No.: 664-22-370-235 (Loan H-028) <sup>1/</sup>  
Project Title: Tunis/Carthage Airport - Fire/Crash, Rescue & Service Equipment  
Project Dates: Funding: 3/28/67 - 10/15/69  
Physical Work: 3/28/67 - 10/15/69  
Contribution: U.S. (DL) \$193,000

### Objective

The objective of this project - one of several related to the development of a modern international airport in Tunis - was to finance foreign exchange costs of procuring fire/crash, rescue and service equipment and related services to raise the level of protection at the Tunis/Carthage International Airport to the standard recommended by the International Civil Aviation Organization.

### Project History

The Loan Agreement for \$225,000 was entered into by the GOT and USG on March 28, 1967. A procurement contract was executed between the GOT and the Afro-American Purchasing Center, Inc. (AAPC) on April 20, 1967. The AAPC placed purchase orders for the equipment (for which bids had been received in December 1966) in June 1967. All equipment was received by September 1968 and the last shipment of spare parts arrived in June 1969.

The following equipment was procured:

- 2 fire trucks
- 1 rescue truck
- 1 foam generating (nurse) truck
- 1 ambulance
- 1 runway vacuum sweeper
- 1 rescue boat
- plus miscellaneous other items, chemicals and spare parts.

Training in the use of the equipment was provided by the factory representative of the Yankee Walter Corp. and by an expert of the UN's ICAO. In addition, the chief of the airport fire and rescue service had previously (in 1966) been sent to the U.S. under another project for 26 weeks of training by the FAA.

<sup>1/</sup> For details on related activities, see Projects 186, 236 and 260.

## Results

As a result of the equipment and training supplied by the equipment manufacturer and the ICAO fire fighting expert, and participant training for the head of the fire fighting unit, Tunis/Carthage International Airport now has adequate protection in accordance with ICAO's standards. The equipment has been in continual use since October 1968 and is being adequately maintained.

Project No.: 664-22-370-236 (Loan H-027) <sup>1/</sup>  
Project Title: Tunis Carthage Terminal Building  
Project Dates: Funding: 1/17/68 - 12/31/69  
Physical Work: 1/17/68 - 11/30/69  
Contribution: U.S. (DL) \$470,000  
(104 (f) Loan) \$ 15,000

Objective

To provide, as part of the USG's continued assistance to the GOT in developing a modern international airport in Tunis, the final design for the passenger terminal, aircraft apron and taxiways, and ground installations at the Tunis/Carthage International Airport.

Project History

The GOT and USG signed this Loan Agreement on April 17, 1967. On January 17, 1968, the GOT entered into a contract with the Parsons Company for the preparation of final contract documents and assistance to the GOT in the latter's preparation for award of the construction contract. The construction drawings and related contract documents were completed and provided to prospective bidders in August 1969.

Results

The final plans called for a structure containing 22,000 square meters which could handle a daily population of 7,000 and 1,000,000 passengers per annum with a capacity to process up to a peak load of 500 persons per hour.

The designs were such that the GOT received bids from two contractors that were below the Engineers' estimates.

1/ For details on related activities, see Projects 186, 235 and 260.

Project No.: 664-21-120-238  
Project Title: Groundwater Development Drilling Training Program  
Project Dates: Funding: 12/68 - 12/70  
Physical work: 12/68 - 7/70  
Contribution: U.S. (DL) \$390,000\*  
GOT (Dollar equiv.) \$180,000

Location

Tunis and Sidi Meskine, 160 kms west of Tunis.

Objective

To provide training for Tunisian personnel in groundwater development, maintenance and utilization including well drilling, assembly, maintenance and repair of drilling rigs; installation and repair of well pumps; and well field management.

Project History

Great dependance must be placed on the use of underground water in order for Tunisia to approach self-sufficiency in agriculture; this fact and the availability of underground water resources brought out the necessity of training a cadre of well drillers and operation and maintenance crews for the drilling and equipping of deep wells. In December 1967, the U.S. Government and the Government of Tunisia entered into a loan agreement to provide the funds for one-year basic training courses in well drilling for 30 to 40 new trainees; six week advance training courses in well drilling for approximately 12 trainees annually and special training courses ranging from one week to one month duration in drilling rig repair, well maintenance, pump installation, etc. for approximately 80 experienced GOT technicians annually. On December 11, 1967, the Ralph M. Parsons Company of California signed a contract with the GOT to carry out these training functions.

\* A 104 (f) Loan (of the Dinar equivalent) of \$549,000 was made under Project 664-21-120-254 to cover the local currency expenditures of this project.

## Results

Over the life of the project, 26 high school students received a one year drilling course, 12 "old hands" participated in a 3 month 2-shift course in special lines of activity, 6 graduates of the Lycee Technique of Tunis were given four months training directed towards developing a basic knowledge of drilling, supervision, maintenance and operation, 10 chief drillers (foremen) participated in a three-month intensive course in drilling supervision, while another 185 men received some formal instruction and on-the-job training in mechanical operations, warehousing and specialized well-drilling techniques and operations. In addition, 7 professionals and sub-professionals were given on-the-job training in irrigated perimeter development.

The contractor prepared and printed a two-volume manual (total of 597 pages) in French, covering the drilling of water wells by rotary machine.

Special studies were prepared by the Project Manager to assist the GOT organization in charge of well drilling to become a semi-autonomous "regie" that would in time be self-supporting.

The project has supplied Tunisia the trained crews that can provide two-shift operations. These crews will have the ability to provide training to new personnel as they are required.

## Evaluation

The project provided a cadre of drillers and supervisory personnel that should fill the GOT manpower needs in this area for an extended period. Their full effectiveness is still limited, however, by the over-all management problems still prevailing, such as delays encountered in moving from site to site and having proper supplies on site and in time. This problem is recognized by the GOT and they are now in the process of setting up an autonomous agency that will be in charge of all well drilling. The basis for the organization of this agency has been provided by the Parsons activity.

There have been two significant, though not totally unexpected results from this and related activities. One the positive side, over the past five years, the well construction cost in Tunisia dropped approximately 35-40%. The GOT well-drilling organization had, as a third unit, put a stop to the virtual monopoly of drilling previously enjoyed by the two private companies operating in Tunisia. It is assumed that the training provided under this contract will make it possible for the GOT to continue to operate in such a fashion as to forestall substantial increases in well development costs that have been experienced in neighboring areas.

On the negative side, the low government wage scale and poor personnel practices has caused some of the personnel trained under this contract (estimated at 10% of the drillers and a somewhat higher percentage of mechanics and lower-level technical personnel) to leave the government service and accept employment with private firms and international organization, both in Tunisia and in another countries.

Project No.: 664-26-995-240  
Project Title: Non Project Loan H-026  
Project Dates: 5/5/66 - 10/31/68  
Contribution: U.S. (DL) \$14,726,995

### Objective

To lend the Tunisian Government (GOT) the foreign exchange costs of U.S. source and origin goods and related services to help GOT balance of payments and to generate local currency counterpart which will assist in carrying out Tunisia's Development Plan.

### History

The Loan was signed on May 5, 1966 with an original final disbursement (FDD) date of November 4, 1967. Subsequently, the FDD was changed to October 31, 1968 and the terminal date for shipment was September 15, 1968.

### Results

Approximately 75% of the loan was used by the private and commercial sector. The loan enabled the economy to obtain required imports during a period when Tunisian foreign currency reserves were low. Among the areas of the economy assisted by the loan were touristic hotels, irrigation and drilling equipment for agriculture and TV broadcasting.

### Evaluation

The loan succeeded in its objective by helping relieve much of the short-term GOT balance of payments problems, while at the same time providing needed local currency for government use.

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Project No.: 664-22-660-243

Project Title: Teacher Training Schools

Project Dates: Funding: 5/67 - 12/67

Physical work: CY 66-70

Contribution: U.S. (104 (f) Loan - Dollar equiv.) \$1,594,000

Location

The schools covered by this project are five "Ecoles Normales d'Instituteurs" located in Tunis, Sousse, Sfax, La Marsa and Monastir.

Objective

The objective of this project was to assist the GOT in financing the construction of 3 teacher training schools in Sfax, Sousse and Monastir and the expansion of another two in Tunis and La Marsa. This financing was designed to assist the GOT in its effort to reduce the chronic shortage of qualified teachers - a key problem in Tunisian education.

Project History

Construction work proceeded routinely in the case of all schools except La Marsa. In the latter case, expansion plans for the existing school were abandoned in favor of constructing entirely new facilities. However, La Marsa municipal authorities objected to the location of the new buildings on which work had actually started, and work on an alternate site commenced on August 1, 1968.

Results

Physical work has been completed on 4 of the 5 schools under this project. The fifth one - the Ecole Normale d'Instituteurs of La Marsa - is about 85% completed, although as noted above, the initial plans for this school did not provide for the construction of new facilities.

Consequently, the project as described in the original ProAgs can be considered as fully carried out.

#### Evaluation

A review of the increase of enrollment of these schools between 1967 and 1969 is an indication of the success of this project. In 1967, the enrollment at 4 of these schools (Sousse had not yet opened) was 1,697. In 1969, enrollment at the same 4 schools, plus that of Sousse, was 4,451 students.

Project No.: 664-22-660-243  
Project Title: Teacher Training Schools  
Project Dates: Funding: 5/67 - 12/67  
Physical work: CY 66-70  
Contribution: U.S. (104 (f) Loan - Dollar equiv.) \$1,594,000

Location

The schools covered by this project are five "Ecoles Normales d'Instituteurs" located in Tunis, Sousse, Sfax, La Marsa and Monastir.

Objective

The objective of this project was to assist the GOT in financing the construction of 3 teacher training schools in Sfax, Sousse and Monastir and the expansion of another two in Tunis and La Marsa. This financing was designed to assist the GOT in its effort to reduce the chronic shortage of qualified teachers - a key problem in Tunisian education.

✓ Project History

Construction work proceeded routinely in the case of all schools except La Marsa. In the latter case, expansion plans for the existing school were abandoned in favor of constructing entirely new facilities. However, La Marsa municipal authorities objected to the location of the new buildings on which work had actually started, and work on an alternate site commenced on August 1, 1968.

Results

Physical work has been completed on 4 of the 5 schools under this project. The fifth one - the Ecole Normale d'Instituteurs of La Marsa - is about 85% completed, although as noted above, the initial plans for this school did not provide for the construction of new facilities.

Consequently, the project as described in the original ProAgs can be considered as fully carried out.

#### Evaluation

A review of the increase of enrollment of these schools between 1967 and 1969 is an indication of the success of this project. In 1967, the enrollment at 4 of these schools (Sousse had not yet opened) was 1,697. In 1969, enrollment at the same 4 schools, plus that of Sousse, was 4,451 students.

Project No.: 664-22-690-244

Project Title: School Construction and Equipment

Project Dates: Funding: 5/67 - 1/70  
Physical Work: CY 67-70

Contribution: U.S. (104 (f) Loan - Dollar equiv.) \$4,093,326  
GOT (IDA/IBRD Loan - Dollar equiv.) \$13 Million

Location

The schools covered by this project are listed on the original ProAg as follows:

<u>Location</u>	<u>School</u>
1) Mateur	Collège Secondaire et Secondaire Professionnel (C.S.S.P.)
2) Kerkennah	C.S.S.P. Mixte
3) Akouda-Kalaa Kebira	C.S.S.P.
4) Moknine - Kessar Hellal	C.S.S.P.
5) Jendouba (ex-Souk El Arba)	C.S.S.P.
6) Dubosville	C.S.S.P. Mixte
7) Houmf Souk (in Djerba)	Lycée Mixte
8) Kebili	C.S.S.P.
9) Gammouda (ex-Sidi Bou Zid)	C.S.S.P.
10) Gabes	Lycée de Garçons
11) Gabes	C.S.S.P. de Garçons
12) Kairouan	Lycée de Garçons
13) Menzel Bourguiba	Lycée Mixte
14) Rades	Lycée Technique
15) Tunis El-Omrane (Rhalila Park (2))	Lycée de Jeunes Filles
16) Le Bardo	C.S.S.P. de Jeunes Filles
17) Djebeniana	C.S.S.P. Mixte
18) Gabes	C.S.S.P. de Jeunes Filles
19) Hammam-Lif	C.S.S.P. de Jeunes Filles
20) Kasserine	C.S.S.P. Mixte

<u>Location</u>	<u>School</u>
21) Mahares	C.S.S.P. Mixte
22) Mahdia	Lycee Mixte
23) Makthar	C.S.S.P.
24) Mednine	C.S.S.P. Mixte
25) Nabeul	Lycee de Garçons
26) Sousse	C.S.S.P. Mixte
27) Tozeur	C.S.S.P. Mixte
28) Tunis - Bab El-Khadra	C.S.S.P. de Garçons
29) Tunis - Montfleury	Lycee de Jeunes Filles

In addition, the GOT expenditure reports include the following two further schools:

30) Jendouba	C.S.S.P. de Garçons
31) Sousse	C.S.S.P. de Garçons

### Objective

The ProAg stipulated that funds loaned to the GOT under this project "will be used in support of a \$13 million loan by the IDA/IBRD for the Tunisian School System. This 104 (f) financing will be utilized to initiate construction of nine new schools (Items 1-9 above); to expand the buildings of six schools (Items 10-15), and to provide equipment for 14 schools (Items 16-29)".

However, GOT expenditure reports also indicate that equipment was provided for the 15 schools being constructed or expanded and for the additional two schools which were not included in the ProAg.

### Project History

The history of this project has been rather drawn-out though uneventful. Work has been progressing satisfactorily, and facilities were utilized as soon as completed.

### Results

At the present time, it is estimated that 95% of the construction and expansion activity has been completed; approx. 85% of the equipment has been received and installed to date. However, all 31 schools covered

by this project are fully operational.

Evaluation

From 1967 to 1969, enrollments in the 31 schools under this project increased by 34% from 34,146 to 45,636 students.

Project No.: 664-42-120-245  
Project Title: El Mahrine Perimeter - Medjerdah Valley  
Project Dates: Funding: 9/67 - 10/68  
Physical Work: CY 1967 - 1970  
Contribution: U.S. (104 (f) Loan - Dollar equiv.) \$714,187  
GOT: (Dollar equiv.) \$578,000

Location:

The El Mahrine Perimeter lies in the Medjerdah Valley, a few kilometers south of the town of El Bathan and surrounds the village of El Mahrine.

Objective

The objective of the project was to irrigate nearly 2300 ha of land as a means of increasing Tunisia's agricultural productivity. The U.S. loan assisted by expediting the completion of this project.

History

The irrigation system is designed to irrigate nearly 2300 ha. of land in the Medjerdah Valley, using water from the OMVVM main canal from the Medjerdah River. The irrigation distribution system consists of a concrete-lined main canal in earth, a relift pumping plant, concrete flumes that are usually elevated, surface drainage canals, some service roads, numerous canal and drainage structures, some land shaping and misc. construction. Approximately one quarter of the construction was finished prior to the fall of 1967 when the loan was made. Construction of the irrigation and drainage system was about 93 per cent completed by the end of August 1970 and the system was able to deliver water to nearly all of the project area.

Results

The project was able to serve practically the entire 2300 ha. during the 1970 irrigation season. Of this area, a significant part was irrigated in summer crops in 1970 and most of the remainder was planted in wheat, which received some project irrigation water.

The project has been well constructed and functions as planned. The agricultural development is still in the development stage and the intensity of cropping and value of the irrigated agriculture can be expected to increase as the farmers adapt to the project.

#### Evaluation

The project is accomplishing its intended purpose. Considerable improvements are still necessary in the way of land shaping, improved irrigation and agricultural practices and increase in the area irrigated before the project reaches its full potential.

Project No.: 664-21-590-248  
Project Title: Harvard Research Project.  
Project Dates: Funding: 7/1/67 - 9/30/68  
Physical work: 6/28/63 - 6/30/68  
Contribution: U.S. (104 (f) Loan-Dollar equiv.) \$14,380

Location

While offices were located in Sidi Bou Said and Tunis, field work was primarily conducted in rural (e.g. Tadjerouine), poor urban (e.g. Djebel Djelloud) and middle level urban (e.g. La Goulette) communities.

Objective

The purpose of this project was to provide, on several occasions, local currency in support of the AID/W-financed Harvard University Research Project in North Africa (Contract Number: HU/AID/csd-297).

Project History

On June 28, 1963, AID/W awarded a grant to Harvard University in support of the "Harvard University Research Project in North Africa", designed to launch an exploratory multidisciplinary study under the auspices of four divisions of the University. The inquiry focused on the measurement of health and education conditions and their relation to economic and social development in Tunisia and concentrated on Djebel Djelloud, a slum community on the outskirts of Tunis.

Total costs of the venture were initially shared equally between AID and Harvard University. However, later amendments increased AID/W's share which totaled \$206,822 from inception through 3/31/69.

The above mentioned grant provided funding for field work in Tunisia through 30 June, 1968, and for analyses of data and preparation of reports at Harvard between that date and March 1969. AID Washington decided not to consider additional funding requests until Harvard's reports on work to date had been made available.

Local funds were provided to the above regional project as follows:

- 7/1/67 thru 12/31/67 (pending preparation by AID/W of Amendment No. 8 to Harvard Grant)	D6,000
- 6/4-20/68 (British Consultant)	D 320
- 7/1/68 thru 9/30/68	D1,230
<u>TOTAL</u>	<u>D7,550</u>

In connection with the last payment (D1,230), it might be noted that Harvard decided to continue with its field work after the deadline of 30 June 1968 set by Washington. For this purpose, the USAID/T and the GOT agreed to provide a 104 (f) Loan - to be reimbursed by Harvard, if possible - to support the Harvard field staff work from July through September 1968, in order to give the University time to solicit financing from other sources.

However, Harvard was not able to obtain such financing or to reimburse the 1,230 Dinars. USAID Trust Fund records were adjusted accordingly and the project was closed out.

#### Results and Evaluation

About 15 preliminary reports on various aspects of the research program resulted from this pilot study phase of the project. Significant findings to date suggest that better yardsticks for social and economic planning, as they affect health and education programs, may be nearer at hand than previously recognized. In fact, no project of similar scope or involving the same range of academic disciplines has been reported in the literature or is known to have been undertaken elsewhere.

In Tunisia, such projects as the "Growth and Development of Children in Tunis" have partly originated from the Harvard findings.

Project No.: 664-26-230-250  
Project Title: Mandustrie Millwork Plant (664-E-030)  
Project Dates: Funding: 2/1/67 - 8/28/68  
Contribution: U.S. (104 (e) Cooley Loan - Dollar Equiv.) \$104,500

Objective

To assist in financing the local costs in Tunisia for the procurement of goods and services and working capital relating to the establishment and operation of the millwork plant. This plant was set up to produce standardized windows, doors and other building components made of wood.

Results

Since the plant commenced its operations in February 1967, it experienced difficulty in obtaining a fair share of millwork production. Whatever job-orders Mandustrie was able to get hardly covered to company's overhead expenses. Following the draw-down of the Cooley loan, Mandustrie was beset with financial difficulties which prompted Marshall Erdman, its founder and major shareholder to decide to withdraw or to subject the company to voluntary liquidation. In July 1969, Mandustrie ceased production and by the end of 1969, AID/W concluded a compromise settlement agreement with Erdman and Mandustrie; it provided for the takeover of Mandustrie by Bechir Ben Njima (Tunisian) against the payment of 3,000 Dinars to AID. In order to make such a sale legally valid under Tunisian law, the purchase must be approved by the Central Bank. Once this approval has been obtained, Mandustrie's sales agreement will be considered finalized.

Project No.: 664-26-830-251

Project Title: Maisons Tunisiennes Carnoy

Project Dates: Funding: May 2, 1967

Physical Work: 5/67 - 7/69

Contribution: U.S. (Cooley Loan - Dollar equiv.) \$300,000

Location:

El Manzah - Tunis

Objective

The construction of 565 houses in El Manzah, Tunis under the AID Housing Guaranty program.

Project History

This project was initiated in early 1967, and was completed by the end of July 1969. It was made possible under the AID Housing Guaranty Program, whereby a loan of about \$5,000,000 was made available by three U.S. insurance companies to Maisons Tunisiennes Carnoy for a duration of 20 years. The Cooley Loan of TD 157,000 (\$300,000) was to assist in financing the local currency costs of goods and services required under the project.

Results

This housing project is the first of its type in Tunisia. It stimulated private home ownership by middle income families by means of long-term mortgage financing. Moreover, the technical know-how and skills developed throughout the construction of this project have proved to be of great benefit to the local construction industry, and should facilitate the construction of similar housing developments throughout the country.

Evaluation

This housing project completed the construction of 565 single family houses which were made available to middle class Tunisians on the basis of 20 year mortgages. It also provided modern living quarters for about 3,000 people.

Project No.: 664-22-120-252  
Project Title: Reforestation Program  
Project Dates: 11/3/67 - 6/30/68  
Contribution: U.S. (104 (f) Loan-Dollar equiv.) \$1,905,000

Objective

To provide funds to assist the GOT in the realization of its Four Year Program submitted to USAID. Major project activities comprise cultivation of trees and purchase of equipment and material necessary to carry out the project with the aid of LCSD labor.

Results

The project provided the GOT with U.S. owned dinars to meet part of the GOT's expenses in carrying out the regular LCSD program.

Project No.: 664-22-120-253  
Project Title: Soil Conservation Program  
Project Dates: 12/18/67 - 6/30/68  
Contribution: U.S. (104 (f) Loan) \$1,428,000

Objective

To support the GOT's extensive soil conservation program described in the Four-Year Plan submitted to USAID. Major project activities comprise terracing by hand and machine with LCSD labor.

Results

The project provided the GOT with U.S. owned dinars to meet part of the GOT's expenses in carrying out the regular LCSD program.

Project No.: 664-21-120-254  
Project Title: Training of Well Drillers & Improvement of  
Well Drilling Techniques  
Project Dates: Funding: 5/68 - 1/70  
Physical work: 12/68 - 7/70  
Contribution: U.S. (104 (f) Loan)- Dollar equiv.) \$548,960

Location

Sidi Meskine, 160 kms west of Tunis

Under this project, local currency was provided in connection with Project 664-21-120-238, Groundwater Development Drilling Program. See Project 238 for description of activity.

Project No.: 664-24-950-259  
Project Title: Watkins Salt Co. - Cooley Loan  
Project Dates: Funding: 5/69 - 12/69  
Contribution: U.S. (Cooley Loan (104) s) \$476,190  
(TD250,000)

Location

COTUSAL Salt production facilities at Sfax and Sousse.

Objective

The construction of facilities which will increase the salt production capability of the Compagnie Generale des Salines de Tunisie "COTUSAL" at Sfax and other related properties in Tunisia, by approximately 100,000 metric tons annually.

Project History

Cooley Loan Agreement was signed in December 1968; the loan was disbursed between May and December, 1969.

Results

Work on this project is still in process. The completion of this project is expected to increase COTUSAL's annual salt production by 100,000 M.T. (from 340,000 M.T. to 440,000 M.T.), with the planned increase to be exclusively earmarked for export. This additional export is expected to increase the company's revenues by about 150,000 D or the equivalent of \$300,000 in hard currency, thus increasing its annual export proceeds from the equivalent of \$1,000,000 to \$1,300,000. This additional earnings in hard currency will help to augment the country's exchange reserves.

Project No.: 664-22-660-262  
Project Title: Faculty of Medicine  
Project Dates: Funding: 7/69 - 12/69  
Physical Work: CY 1969/70  
Contribution: U.S. (104 (f) Loan - Dollar equiv.) \$100,209

Location

Charles Nicolle Hospital, Tunis

Objective

The purpose of this project was to support the expansion of the Faculty of Medicine. This expansion consisted of the construction of two additional buildings incorporating the following facilities:

- a demonstration room and/or lecture room
- autopsy laboratories
- X-ray photography laboratories
- cold rooms

Project History

The ProAg dated June 26, 1969 and revised on September 24, 1969 only covers "phase 3" of the GOT project for the construction of the Faculty of Medicine. Work on the first two phases (Buildings 1 and 2) started in 1964 and was completed in 1968. For the final phase of the project, consisting of an additional building, a construction contract is being awarded and the work is expected to terminate by October 1971. No USAID funds will be provided for the construction of this last building.

Results

All work covered by subject ProAg has been completed.

Evaluation

Even though the GOT Faculty of Medicine Project has not yet been completed, the US-assisted portion has been functioning since October 1969. The 104 (f) funds provided the GOT under this project represent approximately 1/8 of the estimated total cost of the Faculty.

Enrollments at the Faculty of Medicine (not including Preparatory Year enrollments) have increased between 1967-68 and 1969-70 from 231 to 473.

The full cycle of theoretical studies (5 years not including the Prep. Year) and practical internship (one year for 1969-70 and 2 years in the future) is given in Tunis. The first group of students (24) who have completed this full cycle at the Tunis Faculty of Medicine graduated in June 1970.

Project No.: 664-22-820-265  
Project Title: National Committee  
Project Dates: Funding: 7/18/69  
Contribution: U.S. (104 (f) Loan) \$188,378

### Objective

To make available to the GOT, and more specifically to the National Committee for Social Solidarity, funds for the purchase of 14 trucks (6 10-ton and 8 5-ton) to facilitate the transport of PL 480 Title II commodities within Tunisia.

### Project History

During the past several years, the U.S. voluntary agencies and USAID have encountered serious problems with the internal transportation of PL 480 Title II commodities for certain food assistance programs.

Although the overall responsibility for commodity transportation has been delegated to the NCSS, this agency was often unable to make timely deliveries due to the lack of sufficient vehicles. As a result, program officials in the regions were left with the alternative of supplying their own transportation or going without the commodities. Because of regional budgetary restrictions, the use of local transportation was not a satisfactory solution.

In an endeavor to solve this problem, this 104 (f) loan was jointly agreed upon by the GOT and the USAID.

### Results

The NCSS now has at its disposal sufficient facilities to transport the PL 480 Title II commodities to the regions on a timely basis.

Project No.: 664-21-995-269  
Project Title: DDT for Flood Disaster  
Project Dates: Funding: 11/69 - 3/70  
Contribution: U.S. (104 (f) Loan) \$142,336

Objective

To assist the GOT in the procurement of DDT for the use in the anti-malaria program following the Fall 1969 floods.

Project History

During the past several years, the GOT has made extensive efforts to totally eradicate malaria. Major campaigns were held in 1968 and 1969, with DDT being procured under AID loans.

In the aftermath of the 1969 floods, it became necessary to take immediate steps to extend this malaria control. In this connection, 325 MT of 75% water dispersible DDT and 10 MT of 25% emulsifiable concentrate DDT were procured under the Non-Project Loan 664-H-033. According to Section 6.3 of the loan agreement, the GOT was obliged to deposit counterpart funds. In view of the dimensions of the flood disaster and due to the fact that all GOT resources were being taxed to the fullest, the USAID made available this 104 (f) loan to allow the GOT to cover the required counterpart deposit.