

PROJECT EVALUATION SUMMARY (PES) - PART I

Report Symbol U-447

1. PROJECT TITLE  Science and Technology Development			2. PROJECT NUMBER 664-0300	3. MISSION/AID/W OFFICE TUNISIA
5. KEY PROJECT IMPLEMENTATION DATES			4. EVALUATION NUMBER (Enter the number maintained by the reporting unit e.g., Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) 81-2	
A. First PRO-AG or Equivalent FY 78	B. Final Obligation Expected FY 79	C. Final Input Delivery FY 82	<input checked="" type="checkbox"/> REGULAR EVALUATION <input type="checkbox"/> SPECIAL EVALUATION 6. ESTIMATED PROJECT FUNDING A. Total \$ 3,450 B. U.S. \$ 2,088	
			7. PERIOD COVERED BY EVALUATION From (month/yr.) April 1979 To (month/yr.) December 1980 Date of Evaluation Review March 1981	

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIQ, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
1. Amendment of Project Paper and Grant Agreement to: A. Reduce number of active sub-projects and focus remaining activities on development of institutional relations to continue after departure of AID. B. Focus additional funding upon development of an institution in the GOT which will facilitate the transfer of technology and the prioritization of Tunisia's needs for such transfers through an appropriate amendment to project authorization.	R.S. Stevenson (Project Officer)  C. Coleman (Project Support Officer NE/TECH)	June 1981  July 1981
2. Re-design sub-project No. 2: Computer Technology. Decision concurred in by National Center of Data Processing (counterpart). Will use Sub-project No. 6 funds for any technical assistance needed for re-design.	R.S. Stevenson (Project Officer) and R. Bouhaouala (Ministry of Plan and Finance)	May 1981
3. Change counterpart organization for National Bureau of Standards TA and training element of Sub-project No. 5, Pollution Control, from the Central Laboratory to the Office of Environment and Standards. Concurred in by Office of International cooperation, Ministry of Plan and Finance.	Same	May 1981

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS	10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT
<input type="checkbox"/> Project Paper <input type="checkbox"/> Implementation Plan e.g., CPI Network <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Financial Plan <input type="checkbox"/> PIO/T <input type="checkbox"/> Logical Framework <input type="checkbox"/> PIO/C <input type="checkbox"/> Other (Specify) _____ <input type="checkbox"/> Project Agreement <input type="checkbox"/> PIO/P	A. <input checked="" type="checkbox"/> Continue Project Without Change B. <input type="checkbox"/> Change Project Design and/or <input type="checkbox"/> Change Implementation Plan C. <input type="checkbox"/> Discontinue Project

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)	12. Mission/AID/W Office Director Approval
Richard S. Stevenson, S&T Officer	Signature William F. Gelabert, Director
	Typed Name <i>William F. Gelabert</i>
	Date 13 March 1981

### 13. SUMMARY

The attached project evaluation was developed by a contractor, Michael Codi, largely in discussion with officials of the Government of Tunisia (GOT). It found that the various sub-projects were in varying stages of completion, some having largely met their purpose, one being substantially unstarted because of miscommunication of project purpose to the contractor, others being in intermediate stages of completion. All remaining sub-projects were still proceeding in the direction originally designed and the prospects of achieving the purpose and goal were in most cases still reasonable. The GOT continues to place a high priority on technology transfer and in most aspects of the various sub-projects it is reasonable to assume that the project has had and will continue to have a positive impact on national planning and thereby on national economic growth and on the economic and social well being of the Tunisian people.

The evaluation found that the principal problems encountered in the project were managerial rather than technical and resulted from too loose or dispersed a project design. There was no overall project concept other than the general purpose of increased access by the Tunisian science and technology community to appropriate scale U.S. technology. The sub-projects were not integrated, either in concept or in implementation, and required a high level of administrative attention from AID personnel. Moreover, they did not address the key problem of the process of selecting technology for transfer or the management of the process of technology transfer.

The evaluation recommended that the project be amended to limit the number of sub-project and focus remaining effort on development of institutional links to continue after the phase out of U.S. assistance. Any additional funding of the project should focus on the process of selection and management of technology transfer and should be implemented through a host country contract with a single GOT entity.

Pending AID/W approval of the necessary authorization, this will be done.

#### 14. EVALUATION METHODOLOGY

Neither the project grant agreement nor its amendments call for evaluation of the project; either unilaterally by AID or the GOT, or jointly. The Project Paper amendment calls for an in-depth evaluations in May 1980, not otherwise described in terms of participants and scope. The Mission invited the Office of International Cooperation (DCI), Ministry of Plan and Finance, to carry out a joint evaluation of the project. Because of the short notice available prior to arrival of the AID contract evaluator and the lack of available staff within the DCI, the offer of a joint evaluation was declined. The DCI did arrange for a senior representative of the relevant Ministry to make initial sub-project review visits with the USAID evaluator to the GOT project manager for each sub-project. This involved a different GOT representative for review of each of the four active sub-projects. These representatives contributed higher level ministry viewpoint to the evaluator, but did not further participate in drawing conclusions or drafting of the evaluation document.

The evaluation was conducted through a series of conversations between the evaluator, Mr. Codi, and 1) the GOT project manager, 2) members of the GOT staffs involved in the project, and 3) AID management. Because the evaluator was not a technical evaluator, the decision was made to focus the evaluation on the management of the project not on the technical performance or measurement of technology transfer accomplished. This approach is explained on page 2 of the attached Science and Technology Development Project, Evaluation of Phase I, prepared by Michael Codi, December 5, 1980 (the evaluation).

#### 15. EXTERNAL FACTORS

There have been no significant changes during the evaluation period covered in either socio-economic conditions in Tunisia or in host government priorities. Economic growth has continued as expected and the GOT continues to place high priority on technology transfer. The viewpoint changed as to the desirability of sub-project no.1, Systems Analysis/Operations Research, which was to have been implemented in the Office of the Prime Minister. For this reason sub-project No. 1 was discontinued before it ever started.

The decision to shift the counterpart organization for sub-project No. 5, Pollution Control, reflects the fact that the original counterpart never was and never has become more than a testing laboratory. This does not reflect a shift in general conditions or priorities. The recent emergence of another GOT office more directly concerned with pollution control standards than is the former counterpart organization offered a logical and productive shift of counterpart for completion of the sub-project.

#### 16. INPUTS

There have been no significant problems with commodity or training inputs in terms of quality, quantity or timeliness, from a supply point of view. Commodity inputs to the Pollution Control project have on occasion been delayed because of inaction on the part of the GOT project manager.

In terms of technical assistance, inputs for the Pollution Control Remote Sensing and Petroleum Technology Sub-project have been timely and of high quality. Technical assistance inputs to the Computer Technology sub-project have been both delayed and ill chosen, and are discussed in detail on pages 5-7 of the evaluation.

17. OUTPUTS

- A. Sub-project No. 1, Systems Analysis/Operations Research: Sub-project discontinued
- B. Sub-project No. 2, Computer Technology: due to inadequate technical assistance input effective start up of the sub-project is still delayed and the sub-project is being re-designed. There is no output as of this date.
- C. Sub-project No. 3, Remote Sensing: The overall objective of the sub-project was to provide an operational capability in Tunisia to perform land use mapping through interpretation and analysis of remote sensing data. This was to be done through the output projected, the equipping of a remote sensing interpretation laboratory and the training of Tunisian staff in the U.S. in interpretation and analysis of satellite remote imagery. All objectives and outputs of the sub-project as specified in the project documents, in terms of commodities to be supplied and training and mapping to be performed have been met, and the remote sensing laboratory is staffed and operating. For further details, see pages 8-11 of the evaluation.
- D. Sub-project No. 4, Petroleum Technology: The output projected for the sub-project is 1) the short and medium and long term advanced academic and advanced technical training in the U.S. in fields related to exploration and exploitation of petroleum and gas; 2) technical assistance in the form of short technical seminars conducted in Tunisia for GOT personnel; and 3) small amounts of training materials. With the exception of portions of the training materials which have not yet been selected by the GOT, and a small balance remaining available for participant training, the sub-project is complete and all outputs specified have been realized. See pages 12-13 of the evaluation for further detail.
- E. Sub-project No. 5, Pollution Research: The overall objective of the sub-project is to establish a pollution control laboratory capable of testing for industrial environmental pollutants. Outputs specified for the sub-project include U.S. training of laboratory personnel, providing of laboratory equipment, on-site training of laboratory personnel in the use of laboratory equipment for pollutant sampling, the conduct of seminars on state-of-the-art of pollution control techniques, and training of laboratory staff, both in the U.S. and

in Tunisia, in industrial environmental standards. All outputs have been accomplished except the training of laboratory personnel in use of laboratory equipment for pollutant sampling and the training in standards. The former was not accomplished because equipment ordered by the lab had not arrived and because appropriate laboratory personnel for training were not available at the time the U.S. technicians were present. The latter has been deferred to be implemented with a different and more relevant counterpart organization. For further details, see pages 14-16 of the evaluation.

- F. Sub-project No. 6, Scientific Cooperation, Management, Design and Evaluation: This sub-project had no specified output and was to be used for development of further technology transfer projects, management and evaluation of this project and the bringing of short term technical assistance to Tunisia in a broad range of fields. It has been used to study the needs of the computer technology sub-project, to mount a desalinization seminar, to fund the attached evaluation, to assist in design of the proposed amendment to this project, to pay invitational travel to the U.S. of two key GOT officials involved in technology transfer, to pay for preliminary analysis for development of an energy assessment study, to fund a study of cartographic and topographic methods used in Tunisia with recommendations for improvement, and to fund for an extended period the contract services of a science and technology adviser and assistant adviser.

#### 18. PURPOSE

The purpose of the individual sub-projects and progress of each toward the projected end of the project status is dealt with in detail in the attached evaluation and in no 17 above. The overall purpose of the project is to transfer a mix of American technologies appropriate to Tunisian conditions. The Project Paper expresses this as increased access by the Tunisian science and technology community to appropriate scale U.S. technology. The objectively verifiable indicators listed in the project paper are all expressed in terms of the individual sub-projects. The overall purpose of the project was therefore never conceptualized or elaborated in a verifiable form, and the implementation of the project as effectively on arbitrary collection of independently proceeding projects reflects this lack of overall integration of concept. Short falls in the project cannot be measured in terms of the project as a whole, but only to specific sub-projects and thereby relate to causal linkages in the individual sub-projects. These shortfalls are discussed in detail in the evaluation.

#### 19. GOAL

The program goal stated in the Project Paper is improved development performance, particularly through more effective planning and management. The verifiable indicators cited are a GDP growth rate for the 5th Plan period (1977-1981) exceeding that for the 4th Plan period (1973-76) after adjustment for wholly external factors and GOT planners and managers at the top level in at least a few key sectors having available on a current basis the essential

information they require for decision making. In regard to the former indicator, annual GDP growth in the 5th Plan period is estimated at 6-6%, compared to the slightly over 6% achieved in the 4th Plan.

In a project such as this, with impacts spread across a number of different economic sectors, it is not possible to directly relate project purpose achievement to changes in GDP. In regard to the second indicator, progress can be observed in access of managers and planners to data for decision making as a direct result of the Remote Sensing and the Petroleum Technology sub-projects. In the case of Pollution Control the laboratory is too recently operational for useful results to have been produced, and the Computer Technology sub-project has not effectively started. Sub-project No. 6 has brought essential information to the hands of decision makers in the sectors of energy planning and water desalinization.

#### 20. BENEFICIARIES

The direct beneficiaries of this project are the scientific, technological and government managerial community whose work is facilitated through increased technological training and access to data and equipment. Given the assumption that the scientists, technologists and managers so assisted are engaged in research, planning and project implementation directed toward national economic growth and an improved standard of living for the people of Tunisia, the indirect beneficiaries will be all levels of the Tunisian population and the project will thereby have a positive impact on such diverse fields as agriculture, industrial technology, health, and public administration.

#### 21. UNPLANNED EFFECTS

The project has had no negative unplanned effects. On the positive side the problems encountered in the Pollution Control sub-project have served to draw to the attention of GOT policy makers the fragmented nature of responsibility in the sector of pollution control and the need for further actions by the GOT in the domain of pollution control and regulatory development.

#### 22. LESSONS LEARNED

Project design of a project such as this should be based on a more clearly articulated overall objective and the elements should be integrated and implemented through a central authority responsible for either planning or implementation of technology transfer. The implementation of this project has required a level of administrative support from AID equal to implementing six separate projects. The amendment will incorporate this lesson.

#### 23. ATTACHEMENTS

SCIENCE AND TECHNOLOGY DEVELOPMENT PROJECT: Evaluation of Phase I  
Prepared for U.S.A.I.D. Mission to Tunisia by Michael Codi, December 5, 1980.  
27 Pages.