

UNCLASSIFIED

INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D.C.

Project Paper

TECHNOLOGY TRANSFER

Tunisia

Project no. 664-0315

GRANT

1984

UNCLASSIFIED

PROJECT DATA SHEET

1. TRANSACTION CODE

A = Add  
 C = Change  
 D = Delete

Amendment Number

DOCUMENT CODE

3

2. COUNTRY/TERRITORY  
TUNISIA

3. PROJECT NUMBER

664-0315

4. BUREAU/OFFICE

NE

5. PROJECT TITLE (maximum 40 characters)

Technology Transfer

6. PROJECT ASSISTANCE COMPLETION DATE (FAGD)

MM DD YY  
01 21 81

7. ESTIMATED DATE OF OBLIGATION

(Under 'B' below, enter 1, 2, 3, or 4)

A. Initial FY  1

B. Quarter

C. Final FY  81

8. COSTS (\$000 OR EQUIVALENT \$) =

A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	1,450	0	1,450	2,450	0	2,450
(Grant)	(1,450)	(0)	(1,450)	(2,450)	(0)	(2,450)
(Loan)	(0)	(0)	(0)	(0)	(0)	(0)
Other U.S.	1					
Other (Donor(s))	100	0	100	21,080,570	0	21,080,570
<b>TOTALS</b>	<b>1,550</b>	<b>0</b>	<b>1,550</b>	<b>21,530,570</b>	<b>0</b>	<b>21,530,570</b>

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1)	750	870		4,650		4,800		9,450	
(2)									
(3)									
(4)									
<b>TOTALS</b>				<b>4,650</b>		<b>4,800</b>		<b>9,450</b>	

10. SECONDARY TECHNICAL CODES (maximum 8 codes of 3 positions each)

871 872 873 874 660

11. SECONDARY PURPOSE CODE

680

12. SPECIAL CONCERN CODES (maximum 7 codes of 4 positions each)

A. Code  
B. Amount

13. PROJECT PURPOSE (maximum 400 characters)

To enhance Tunisia's capability to acquire and incorporate appropriate technology into its development process.

14. SCHEDULED EVALUATIONS

Interim MM YY MM YY Final MM YY  
01 81 01 81

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000  991  Local  Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of 4 page PP Amendments)

This amendment adds funds to include AID support for training of Tunisian students at U.S. schools and modifies the project purpose to more accurately reflect project objectives.

17. APPROVED BY

Signature  
James R. Phinpard  
Title  
Director  
USAID/Tunisia

Date Signed MM DD YY  
01 21 81

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

MM DD YY

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LIST OF PROJECT COMMITTEE MEMBERS

1. Mr. Mark Karns, Project Development Officer
2. Ms. Anne Williams, Regional Legal Advisor
3. Mr. Ernest S. Hardy, Controller

USAID/Tunisia Project Approval Officer  
Mr. James R. Phippard - Director

PROJECT AUTHORIZATION AMENDMENT

Name of Country: Republic of Tunisia      Name of Project: Technology Transfer

Number of Project: 664-0315

1. Pursuant to Sections 106 and 531 of the Foreign Assistance Act of 1961, as amended, the Technology Transfer Project for Tunisia ("Cooperating Country") was authorized on August 31, 1981 and was amended on August 29, 1983 and on April 24, 1984 (the "Authorization"), and is hereby further amended as follows:

a. The second paragraph of Section 1 is deleted in its entirety and the following is inserted in lieu thereof:

"Pursuant to Section 531 of the Foreign Assistance Act of 1961, as amended, I hereby further authorize additional funding for the Technology Transfer Project involving planned obligations of not to exceed nine million four hundred fifty thousand dollars (\$9,450,000) in grant funds over a 30 month period from the date of the first amendment to the authorization, subject to the availability of funds in accordance with the AID OYB/allotment process, to help in financing foreign exchange costs for the Project."

b. Section 2 is deleted in its entirety and the following inserted in lieu thereof:

"2. The Project consists of assistance with the placement of Tunisian students in United States institutions of higher education and assistance with the revision of Tunisian manpower planning for technically trained persons and Tunisian curricula for the training of university students in engineering and related technical disciplines. For the purpose of faculty study tours, related technical disciplines shall include the field of medicine.

In addition AID's contribution will partially fund the training of graduate and undergraduate students in the United States, beginning with the academic year 1982/83, as well as project assessments, evaluation and financial audits, and the foreign exchange costs of English language training in Tunisia."

c. To Paragraph 3 is added the following:

"(c) Conditions Precedent to Third Amendment

Conditions precedent to disbursements under the Third Amendment shall be in substance as follows:

(1) Prior to first disbursement under the Third Amendment, or to the issuance of commitment documents pursuant to which disbursement will be made, the Grantee shall except as the parties may otherwise agree in writing, submit to A.I.D., in form and substance satisfactory to A.I.D., evidence that a satisfactory audit of the scholarship portion of this Project has been performed by the Grantee or independent accountants within the last calendar year."

d. Project Action Completion Date (PACD). "The PACD is hereby extended to February 28, 1986."

2. Except as hereby amended, the Authorization remains unchanged and in full force and effect.

Signature: James R. Phippard  
USAID Mission Director

Date: 12 22 81

Clearances: PROG: MAbassi (draft)  
PDO : MKarns (draft)  
CONT: ESHardy *dy for*  
RLA: AWilliams (Draft)

cc: C&R-2, S&T-3, PROG, RLA, CONT

ACTION MEMORANDUM

Date: December 21, 1984

TO : James R. Phippard, USAID Director  
FROM : Mark Karns, Project Development Officer *MC*  
SUBJECT : Technology Transfer Project 664-0315

**PROBLEM:** Your signature of the attached Project Authorization Amendment No. 3 and Project Paper Amendment supplement No. 3 is required to authorize \$4.8 million in FY 85 Economic Support Fund grant funds for the subject project.

**DISCUSSION:** This project initially was approved and obligated in FY 81. Since the date of the Agreement, August 31, 1981, a host country contract with the Academy for Educational Development (AED) was signed on August 18, 1982. This technical assistance contract constituted nearly all of AID's contribution to the project. The GOT's contribution was primarily the costs associated with the Government of Tunisia Scholarship Program in the U.S. for approximately 450 undergraduate and graduate students in a variety of development related fields. While there were some delays in signing the host-country contract, the project appears to be making adequate progress in meeting its overall objectives.

On August 30, 1983, AID and the GOT signed Amendment No. 1 to the Project Agreement adding \$2.0 million of FY 83 BSP funds to the project to be used to directly support training costs associated with Tunisian graduate students studying in the U.S. A Project Paper Amendment No 1 was prepared which provided the necessary justification and documentation. The project remained essentially unchanged and the \$2.0 million additional AID funds provided for an input which previously had been supplied exclusively by the GOT. The GOT had experienced foreign exchange problems which made it difficult to continue expanding the scholarship program at the expected pace and requested that AID directly contribute to the costs associated with training.

Because of continuing foreign exchange problems and steadily increasing costs of education in the U.S., the GOT requested that \$1.2 million of FY 84 BSP funds also be used by AID to support the costs of Tunisian students studying in the U.S. The GOT further requested, and AID agreed, that undergraduate engineering studies be funded within the framework of this project. Project Paper Amendment No. 2 updated the project implementation plan, the budget and the logical framework. These additional scholarship funds for the 83/84 school year were

authorized on April 24, 1984 by your signature of the Project Paper and Project Authorization Amendment No. 2. AID resources have now been used to fund 310 person-years of academic training in the U.S. for 325 Tunisian undergraduate engineering students and graduate students in priority development fields, such as management, computer sciences, engineering, architecture and food processing.

GOT foreign exchange problems have continued. Development of a technically skilled human resource base to strengthen Tunisian competitive advantage in attracting foreign investment in export manufacturing has retained a high priority. The GOT has requested that \$4.8 million of FY 85 ESF funds be added to the Technology Transfer Project to partially support the costs of Tunisian undergraduate and graduate students who will be continuing their studies in the U.S. during the '84-'85 school year (and partial costs of the first semester of the '85-'86 school year, funds permitting) as well as 108 new students who began U.S. engineering or related technical degree studies in fall '84. To permit financing of the entire 84-85 school year and possible financing for the first semester of the 85-86 school year, the PACD must be extended to February 28, 1986.

In order to ensure that adequate resources are available for scholarship and non-scholarship evaluation activities planned for FY 85, and the assessment of English language training being provided to scholarship students, the GOT has also requested that \$100,000 of FY 85 ESF funds be provided for project assessments, evaluations, and financial audits. An additional \$20,000 has been budgeted to support the FX costs of English language training in Tunisia. Also in response to GOT request, Tunisian medical faculty exchange visits to the U.S. will be added to the non-scholarship project activities in order to allow Tunisian medical schools to keep abreast of current U.S. medical school technologies. (See GOT letter No. 504879 dated November 7, 1984, attached at Annex D).

AID funds for this training will be provided directly to the GOT in support of its scholarship program. Because AID will provide support to a GOT managed scholarship program, this training activity represents a departure from traditional AID participant training policy and procedures in that AID will not necessarily fully fund any student's program to completion. However, Project Implementation Letter No. 5, signed and countersigned simultaneously with Project Agreement Amendment No. 1, stipulates that the original Agreement is understood to say that the Government of Tunisia will take all steps necessary so that students studying in the United States under this Project can complete their degree programs. PIL No. 7 will advise the GOT that disbursement procedures under Amendment No. 3 will be simplified through use of a modified FAR and that the project's new PACD is February 28, 1986.

STATE 377440 provided authority for you to sign the Project Authorization Amendment.

NOTIFICATION TO CONGRESS: Congressional Notification of our intent to obligate \$4.8 million in FY 1985 ESP funds for the Technology Transfer Project 664-0315 was made on December 5, 1984 and the fifteen day waiting period expired on December 20, 1984.

RECOMMENDATION: That you sign the attached Project Paper Amendment face sheet and the Project Authorization Amendment adding \$4.8 million to the Technology Transfer Project.

Approved : \_\_\_\_\_

Disapproved: \_\_\_\_\_

Date : \_\_\_\_\_

- Attachments: A. Project Authorization Amendment
- B. Project Paper Amendment and Face Sheet  
-Annex C contains Congressional Notification cables (TUNIS 08910 and STATE 376093) and Delegation of Authority (STATE 377440)  
-GOT Request for Assistance attached at ANNEX D

Clearances: PROG:MAbassi *CP 12/26*  
A/CONT:AGordon *AG*  
RLA:AWilliams (Draft)

cc: D/DIR, PROG. CONT, C&R-2, S&T-3  
PDO:MKarns:nm:12/11/84 \_\_\_\_\_

## I. Project Summary

This Project Paper Amendment describes the third amendment to the Technology Transfer Project (664-0315), initially authorized on August 31, 1981. The action described will increase AID grant funding for the project from \$4.65 million to \$9.45 million. The project purpose has not been modified and the project description and logical framework have been changed only to reflect increased AID grant funding, the increased number of Tunisian students who will benefit from AID funds, and funding for assessments, evaluations, and financial audits of project activities.

All project elements remain unchanged. The funds provided through this amendment will be used to finance the equivalent of approximately 456 additional person-years of training as partial funding for approximately 478 Tunisians studying at the graduate and undergraduate levels in the United States in '84-'85 in such fields as management, computer sciences, engineering, architecture, and food processing. AID funding of student costs will not require additional staff beyond the original level planned.

## II. Project Progress to Date

A. Overall Progress - While general project implementation progress was initially slow due to contracting delays and strained relations between the Ministry and the resident advisor, constructive steps have been taken to accelerate project activity. Activities are now proceeding on a revised implementation schedule under which all project objectives will be accomplished by February 28, 1986.

At the request of the GOT, the resident advisor was terminated after one year; a new resident advisor was not recruited. Instead, the advisory and planning role of the resident advisor was assumed on a part-time basis by a senior member of the AED staff. It was agreed in September 1983 that this AED staff member would make four or five two week visits to Tunisia each year to visit the faculties and carry out functions originally assigned to the resident advisor, particularly planning for U.S. faculty to visit Tunisia and for Tunisian faculty to visit the U.S. This part-time arrangement involved high overhead and daily rate costs without providing adequate project coordination.

During meetings between AED, the GOT, and USAID during May 1984, it was agreed that a fulltime AED project coordinator, resident in Washington D.C., would be recruited in order to move project activities along on a timely basis, and that the cost to the project of AED services could be significantly reduced if a fulltime staff member were to be engaged to fill this role. AED is now in the process of identifying candidates for this fulltime project coordinator, and final selection will require GOT approval. The new coordinator will work closely with the GOT Scientific Mission in Washington D.C., and will undertake periodic TDY's in Tunisia to define work programs for U.S.-Tunisian faculty exchanges, to plan U.S.-Tunisian institutional linkages, and to monitor the progress of project activities.

B. Specific Components - Progress since Amendment No. 2:

1. Manpower Planning - A committee for manpower planning has been established, as specified in the conditions precedent, composed of several key MHESR officials, representatives of the higher academic institutions involved and representatives of the Ministries of National Economy and of Plan. Several planning meetings have been held and a Tunisian researcher was employed by the MHESR to clarify and elaborate on previous manpower planning research efforts. A US manpower planning expert has carried out a five week analysis and projection of technical manpower requirements and supply in Tunisia and has submitted a detailed report including program recommendations. This report is currently under review by the GOT and by AED, who will together determine subsequent steps in this program element. The GOT's local consultant has also produced a study of Tunisian manpower needs as a response to the AED consultant report, but external distribution of this study is pending GOT ministerial review.
2. Student Placement - AED has supplied a full time student placement specialist to work as a member of the staff of the Scientific Mission of Tunisia in Washington, D.C. The project has also provided the same office with a microcomputer and software for the complex data management tasks associated with student placement and tracking. The combination of the Tunis MHESR office which selects the students and prepares their dossiers and the Washington office which places and manages them now appears self sufficient and has carried out a large number of placements with no apparent requirement for external assistance. Though the initial project funded staff member in Washington has resigned, a replacement has been recruited to continue for the completion of the programmed 30 months (through June 1985) to assist in carrying the expanding load. A small amount of consultation to the Tunis placement office is still planned.
3. Institutional Strengthening - The deans of the four engineering schools to be assisted have each made a two to three week visit to several U.S. engineering schools to discuss curricula and teaching methods and approach. From these visits, in which they were accompanied either by the resident advisor or by the AED project manager, the deans gained valuable knowledge of the nature of engineering training in the U.S. and the types of faculty and curriculum assistance which could be requested under the project. Each dean will be expected to give specifications for visiting professors for the current academic year. Several professors have already made visits, and AED continues recruitment. The architecture school dean also received project support for a visit to U.S. institutions in fall '84. and appropriate follow-up faculty exchanges are being planned by AED. An accelerated schedule of faculty visits is planned for this academic year in order to effectively use project resources and accomplish project objectives before the PACD.

An important project objective is the establishment of professional and institutional linkages between Tunisian and U.S. institutions of higher technical education. To this end, the project resources will be used to promote an institutional tie between each Tunisian institution assisted and a specific U.S. academic institution, and to the extent practicable, the flow of visiting U.S. professors and Tunisian administrators and faculty on study tours will occur between paired institutions. Arrangements have been tentatively established between the following institutions: Ecole National d'Ingenieurs à Gabès and the University of Houston; Ecole National d'Ingénieur à Sfax and the University of Wisconsin; Faculté des Sciences à Monastir and the University of Minnesota; Ecole Normale Supérieure d'Enseignement Technique and Ohio State University; Institut Supérieur de Gestion and Pennsylvania State University; and Institut Technique d'Architecture et Urbanisme and Kansas State University.

As part of the AID/GOT strategy is designed to accelerate institutional linkages in engineering-related fields, AID has approved the MHESR request to provide project technical assistance to the development of curricula for the new computer sciences school (Ecole Nationale des Sciences de l'Informatique) in Tunis which was legislated into existence in fall '84. AID agreed to expand faculty exchanges to this new institution for the following reasons:

- a. The addition of this institution will strengthen Tunisia in an area related to the main project purpose, since engineers will be able to obtain a specialized year of computer training at this new school;
- b. USAID Tunisia is supporting computer technology transfer in other projects such as energy planning assistance to MEN, curriculum and teaching materials for ISG, and student tracking at the Ministry of Higher Education itself. Supporting this new information sciences school will contribute to AID's multi-pronged program of developing computerized data management capability in Tunisia, and could provide an institutional home for some of the 664-0315 scholarship students who are now studying computer sciences in the U.S. before returning to Tunisia.
- c. The request provides an opportunity for the U.S. to assume a leadership role in supporting a new Tunisian institution which falls squarely within an area of U.S. technology strength and private enterprise interest. A paired U.S. institution will be selected by AED and the GOT in winter '84.

Medical faculty exchanges are also being added to the project's technical assistance package, in order to enable Tunisian medical schools to remain current in their use of up-to-date medical technology. Additional MHESR engineering-related research institutes are under discussion for inclusion in the project, potentially involving missions to Tunisia by senior U.S. researcher advisors in the field of water management and coastal water pollution control, consolidating and building upon other AID projects in industrial pollution abatement and wastewater recycling.

4. Training Programs - Partial AID scholarship funding was provided through Amendments One and Two for 90 graduate students and 295 undergraduates who were receiving GOT scholarships for higher technical education in the U.S. during the '82-'83 and '83-'84 school years (e.g. a total of 385 students). Table 1 provides more detail on the duration of scholarship assistance received by students under the project to date.

This Amendment No. 3 provides an additional \$4.8 million of USAID funds in partial support of the 102 graduate students and 376 undergraduates (a total of 478 students) who will be receiving GOT scholarships for U.S. higher technical education during the '84-'85 school year. Included in this number are 108 new students (81 undergraduates, 27 graduate students) who were sent by the GOT to begin U.S. degree programs in fall '84.

Since one of the goals of the scholarship project component is to provide the means for the GOT to gain experience in independently placing and monitoring students in the U.S., these scholarship students are not subject to USAID participant training surveillance. The project has provided the computer hardware and AED software development assistance for the GOT's establishment of a computerized student data bank and easily updatable monitoring system. AED has worked with the GOT to bring the data bank on line, although up-to-date reports on student grades and credits completed have not yet been submitted to USAID for '83-'84 scholarship students. A review of '82-'83 graduate student grades indicates that most students who had passed their English language training, and had therefore started earning degree credits, were averaging at least a "B" grade overall.

About twice as many '83-'84 graduate students were pursuing Ph.D programs as the number studying for Master of Science degrees. The GOT reported that Ph.D candidates had previously obtained Masters' degrees, and about 20% of the '83-'84 doctoral candidates had already finished their coursework, and were working on their dissertations. (See Table 2).

Of the '83-'84 undergraduate students, 58% were in their third year of study, 23% were second year students, and 19% were new students. (See Table 3).

To compensate for the lower level of new undergraduate student intake during the past two years, the GOT conducted two rounds of student selection in order to recruit a larger group of new undergraduates for the '84-'85 school year. These students were selected by the MHESR on the basis of a competitive nationwide solicitation and review of applicants' high school grades. The highest scoring students, up to the number of scholarships available, were given awards. Financial need was not a selection criterion, only overall academic excellence. Though a weighted coefficient emphasized grades in math, physics, chemistry, and English, thereby taking into account technical aptitude and English competence, no minimum level of English language ability was required for new scholarship students selected. The GOT will finance up to a semester of fulltime U.S. English language instruction for both graduate and undergraduate

Table 1  
Total No. of Scholarship Students Assisted by Project, '82-'85

GRADUATE STUDENTS

Assisted '82-'84 (4 semesters, expected to be continuing studies '84-'85):	49
Assisted '82-'83 Only (3 semesters, graduated or left program by end of '83):	2
Assisted '82-'83 Only (2 semesters graduated or left program):	11
Assisted '83-'84 (2 semesters, expected to be continuing '84-'85 studies):	17
Assisted Fall '83 Semester Only (includes 1 MS graduate and 1 drop out):	2
Assisted Spring '84 Semester Only (new students who will be continuing studies in '84-'85):	9
Subtotal Assisted by Project '82-'84:	<u>90</u>
New Graduate Students beginning U.S. Studies Fall '84:	<u>27</u>
Total Graduate Students Assisted by Project:	117

UNDERGRADUATES

Assisted by Project '83-'84 (expected to be continuing '84-'85 studies):	295
New Students Beginning U.S.-Studies in Fall '84:	<u>81</u>
Total Undergraduate Students Receiving Project Assistance:	376

TOTAL OF STUDENTS ASSISTED BY PROJECT: 493

Table 2  
'83-'84 Scholarship Students: Type of Graduate Degrees

Masters of Science	23
Ph.D.*	47
Unreported	9
Total	<u>79</u>

\*Note: 10 of these students were undertaking dissertation research in the fall semester.

Table 3  
'83-'84 Undergraduate Students: Year of Study

1st year	55	19%
2nd year	63	23%
3rd year	172	58%
Total	<u>295</u>	<u>100%</u>

scholarship students. Students generally enter language programs at the university where they will be later pursuing technical degree programs after the successful completion of language instruction. USAID has assisted with a GDT-sponsored intensive six week summer language course in the past, but only undergraduates were required to attend in summer '84. Graduate students were expected to prepare themselves at the Tunis Language School, or elsewhere, using their own resources. Since the GDT conducted two rounds of recruitment for new undergraduate scholarship students in 1984, only the initial group of students was selected in time to attend the USAID/GDT summer '84 English course, and the second group was sent directly to U.S. language studies.

To support its technical training investment, AID is concerned about strengthening English language preparation for Tunisian students prior to their departure for the U.S. In the long run, this is likely to be more cost-effective than GDT continued provision of up to a semester of U.S. support per student for language training alone. Such an approach would permit identification of students unable to attain the necessary English competence prior to departure from Tunisia. USAID plans to undertake an assessment of the cost, duration, and level of progress achieved by existing investments in U.S. language instruction for scholarship students to investigate alternative ways and means of preparing future GDT scholarship students for U.S. technical higher education.

The GDT requested that undergraduate engineering studies be included within the AID-funded portion of the project, and AID agreed to do so starting with academic year (1983-1984). In most engineering fields, the BS is the predominant degree and only those students planning research and teaching normally continue for the Ph.D. Because of the difficulty of the transition from the Tunisian academic system to the American system it not cost-effective to send a student from Tunisia for only the two year BS degree. Therefore, the GDT has chosen to send students directly to the U.S. for the lower for a combination BS and MS program, with the expectation that they will work as Engineer Principals upon their return. Persons holding that title or degree equivalence usually are appointed chief engineers for plants or organizations and are in positions to influence engineering practices and procedures within their organizations. These professionals can serve an extremely constructive role in technology transfer by introducing U.S. engineering approaches and techniques.

Given USAID's focus on stimulating private sector development in Tunisia, USAID's policy dialog will continue to discuss the future role of U.S.-trained engineers in stimulating development of a Tunisian private industrial sector.

Project-assisted students are studying a wide range of engineering specializations and related technical fields. (See Table 4) Large shares of civil, electrical, and mechanical engineers are already in the

pipeline, according to the AED Manpower Study which was released to AID and the GOT in January 1984. Based upon this study there is a need for a more requirements-based approach to GOT selection of priority technical fields for overseas training. ( See Table 7) Surpluses of Tunisian engineers are expected to be emerging in civil, mechanical, electrical, meteorological, maritime, computer, and telecommunications engineering. Deficits will be emerging in chemical, metallurgical, industrial, agro-industrial, mining, and petroleum engineering. Through AID's centrally funded Conventional Energy Training Program, long and short term training needs in petroleum engineering are being addressed, therefore, it has been recommended to the GOT that the scholarship funds added by Amendment No. 3 be targeted towards U.S. studies in chemical, agro-industrial, and industrial engineering, which are the technical fields in which Tunisia's greatest trained manpower deficits will be occurring. The GOT project offices in the MHERS and the Scientific Mission of Tunisia in Washington D.C. use the AED manpower study as a guide for choosing students' fields of study.

A large number of U.S. universities are involved in training GOT scholarship program students. In '83-'84, a total of 63 universities were training project-assisted students in engineering and related technical fields. (See Annex A).

The cost to USAID of training GOT students through providing support for the autonomous GOT program is about half the cost of AID participant training at the same institutions. On average, the centrally-funded Conventional Energy Training Program costs \$10,000/student/year for Master's degree training, including International Institute for Education (IIE) overhead and fees. In comparison, the GOT scholarship program is projected to cost approximately \$10,400/student/year for '84-'85 Master's degree training.

C. Ongoing Validity of Key Project Assumptions - Since the original Project Agreement and Amendments One and Two were signed, nearly all of the key project assumptions have proven to be valid. GOT legislation was amended to allow payment of application fees. Tunisian students are being accepted into appropriate U.S. academic institutions and are being sent according to schedule. English language training programs, however, have not been preparing all students for U.S. study according to schedule. For this reason, the special assessment of English language training for scholarship students will be undertaken in FY 85 as possible input into future USAID project development efforts.

The GOT's ability to meet its foreign exchange commitments for the project has become strained due to continuing balance of payments problems and growing budget deficits. While no plans have been made to reduce the number of students to be trained, the continued deterioration of Tunisia's foreign exchange situation and stringent national budget limitations have moved the GOT to request further AID support for its long-term commitment to the program. It is largely as a result of this situation that AID has agreed to provide additional funding for direct costs of the 478 Tunisian students in the program.

Table 4  
 '83-'84 Scholarship Students: Fields of Study

Fields	No. Grad Students	No. Undergrad Students
I. Engineering		
Civil	18	38
Electrical	9	92
Mechanical	5	70
Industrial	2	26
Chemical	-	21
Petroleum	-	11
Mining	-	6
Aeronautics	-	7
Nuclear	-	1
Environmental	1	-
Hydraulic	1	-
II. Related Technical Training		
Computer Sciences	3	-
Information Systems	1	11
Business/Management	7	1
Economics	4	-
Agricultural Economics	1	-
Accounting	3	1
Law	1	-
Architecture	1	-
Communications	1	-
Chemistry	1	-
Physics	2	-
Math	5	-
Ceramics/Glass Sciences	1	1
Linguistics	1	-
Clinical Psychology	1	-
Industrial Psychology	-	-
Metallurgy	-	-
Biology	-	-
III. Unspecified by GOT	10	177
Totals	78	478

SUPPORT GOT vouchers for '83-'84 school year.

III. Purpose and Description of Amendment No 3

A. Rationale for Proposed Change - By Amendment Number One to the Grant and in response to a strong request from the GOT for direct AID support of students in the U.S., AID increased the funding of this project in FY 1983 by \$2,000,000, to be used for Tunisian graduate and undergraduate studies in the United States.

The GOT created its U.S. scholarship program because of the strong belief that the U.S. represents the leading edge of technology and its desire to strengthen ties with the U.S. Discussions between senior GOT and U.S. officials have reaffirmed Tunisia's high level of political commitment to the U.S. and the importance to Tunisia of AID support to the Tunisian scholarship program in the US. Continued increases in higher education costs and a sustained commitment to a program of expanded technical and professional ties with the U.S. have caused the GOT to request additional support by AID for this program.

At the inception of AID scholarship support, the U.S. and Canada were second only to the USSR as the major countries training Tunisian engineers abroad. The USSR's predominance was undoubtedly attributable to its program of bilateral scholarships. The strengthening of the U.S. role in Tunisian technical training through initiation and continuation of support for bilateral donor scholarships is an appropriate use of BSP funds. (See Table 5)

The GOT has assigned a high priority to human resource development to compensate for its limited national resource endowments. As Tunisia becomes a net oil importer by the end of the '80's, improvement of its competitive position in export manufactures will become increasingly important. A major factor in developing a competitive edge for Tunisia in export manufactures will be its development of a quantitatively and qualitatively appropriate technical skill base. In recognition of this policy, Tunisia has made striking progress in expanding its tertiary school opportunities, increasing enrollments in Tunisia from 773 students in '55-'56 to about 32,800 students in '81-'82. Science and technology fields have been emphasized, with over 50% of university students majoring in these fields in '80-'81.

**Table 5**  
**Enrollment in University Engineering**  
**Courses in Foreign Institutions, 1982-83** <sup>1/</sup>

Country	Enrollment <sup>2/</sup>	
	Number	Percentage
U.S.A. and Canada <sup>3/</sup>	376	28.0
France <sup>4/</sup>	305	22.7
Federal Republic of Germany <sup>3/</sup>	145	10.8
Belgium <sup>5/</sup>	39	2.9
U.S.S.R. <sup>5/</sup>	478	35.6
<b>Total</b>	<b>1,343</b>	<b>100.0</b>

<sup>1/</sup> Norman Mc Evers, *Ibid.*, p. 7-10

Source: National Office of University Works (ONOU) (the MHESR office responsible for disbursing all GOT scholarship funds for university studies and those who are financed by bilateral donor agencies).

- <sup>2/</sup> Students enrolled in the foreign scholarship programs financed by the GOT and bilateral donors.
- <sup>3/</sup> GOT and bilateral donor scholarships.
- <sup>4/</sup> GOT and bilateral donor scholarships.
- <sup>5/</sup> Bilateral donor scholarships.

The VIth Development Plan ('82-'86) provides for a 100% increase in investments in manufacturing activities oriented towards intermediate inputs and exports, especially electrical and mechanical products, as well as textiles and miscellaneous industries. Manufacturing GDP was projected to increase by 10.6% per year from '81-'91, and even though overall GDP growth was much slower than projected in the early VIth Plan years, manufacturing performance has demonstrated real growth. Tunisia has been successful in developing its small industrial sector to the point where it accounted for over 32% of employment in 1983. This manufacturing sector is now gradually modernizing with advanced technology. Thus, its growth performance will be increasingly dependent upon the quality and quantity of highly trained and technically capable personnel.

Moreover, since import substitution markets are now saturated, Tunisia's potential for manufacturing growth lies in export markets where its competitive advantage will require equivalent technical skills at lower labor costs than Western Europe in order to exploit its geographic proximity to European markets. According to World Bank reports on Tunisian industrial competitive advantage, the country has extremely strong potential for export of a wide variety of engineering and electronics machinery; construction materials; processed foods; fertilizers and chemicals; plastics; wood and paper products; leather goods; basic textiles and clothing.

Former GOT policies have favored an emphasis on civil engineering to implement the VIth Plan's ambitious public works construction program. Most of the engineers estimated to be surplus in the Tunisian economy by 1993 will be civil engineers (see Table 6). Almost 25% of all Tunisian engineers are civil engineers, 4% are trained in the agro-industrial

field, and only 4.3% in industrial engineering, two fields in relatively more labor-intensive sectors and thus critical for future employment generation. (See Table 7)

The AED study reported that most currently employed engineers do not appear to be misallocated by major discipline or field of training. However, future technical manpower shortages need to be avoided by careful planning and targeted overseas training since 4-8 years lead time is required to produce graduate engineers. By 1993, the AED consultant has projected that 50% of all Tunisian engineers will be employed in manufacturing, therefore, correction of the current disequilibrium, in which local engineers have been predominantly trained in civil engineering, is critical. Almost 7,000 new engineers, will need to be trained by 1993, spanning a much greater diversity of specialized fields. (See Table 8) AID assistance will make a substantial contribution to meeting this demand, and will have an important influence on the Tunisian economy if U.S. training is targeted towards increasing Tunisian engineering expertise in specialized fields which are not yet taught in the country's own engineering institutes.

Table 6  
Estimated Manpower Balance  
1983-1993  
(+ surplus; - deficit)

Field of Engineering	Balance
Civil	+1,468
Mechanical	+298
Electrical	+284
Chemical	-376
Metallurgical	-204
Industrial	-223
Agro-Industrial	-230
Mining	- 11
Petroleum	- 93
Aeronautical, Pilots & Meteorological	+ 60
Maritime	+220
Agricultural	
Computer & Related	+160
Telecommunications	+717
Total	+1,980

Source: Norman Mc Evers, Ibid., p. 10-2

N.B: The bulk (64%) of surplus engineers are being trained in Tunisia, where needed specializations are unavailable. Tunisian engineering schools produce a limited number of graduates in specialized engineering branches, while also not providing a broad training base which would allow graduates to effectively develop new specializations through short courses and experience. Therefore, short-term retraining of Tunisian civil engineers does not appear to be a viable strategy for supplying trained manpower to meet projected specialized engineering deficits.

Table 7  
Estimated Stock of Engineers  
By Field, 1983 1/

<u>Field</u>	<u>Percentage</u>
Civil	24.5
Mechanical	17.8
Electrical	11.9
Chemical	10.0
Metallurgical	1.9
Industrial	4.3
Agro-Industrial	3.9
Mining & Geological	6.2
Petroleum	3.2
Aeronautical, Pilots, Meteorological	3.3
Maritime	0.8
Agricultural	3.3
Computer Related	5.1
Telecommunications	3.8
<u>Total</u>	<u>100.0</u>

1/ Norman McEvers, *Ibid.*, p. 4-6. Sources: Consultant estimates from individual enterprises, l'Enquête sur l'Encadrement Technique et Administratif des Industries, C.N.E.U., 1981, 1983 membership lists of the Tunisian Society of Engineers, the 1981 Industry Census by the National Statistics Institute.

Table 8  
Estimated Total Requirements  
for Engineers by Fields; 1983-1993 1/

<u>Field of Engineering</u>	<u>Total Requirements</u> 2/	
	<u>Number</u>	<u>Percentage</u>
Civil	1,201	17.3
Mechanical	1,484	21.3
Electrical	986	14.2
Chemical	834	12.0
Metallurgical	232	3.3
Industrial	426	6.1
Agro-Industrial	399	5.7
Mining and Geological	263	3.8
Petroleum	171	2.5
Aeronautical, Pilots, and Meteorological	238	3.4
Maritime	45	0.7
Agricultural	120	1.7
Computer and Related	424	6.1
Telecommunications	131	1.9
<u>Total</u>	<u>6,954</u>	<u>100.0</u>

1/ Source: Norman McEvers, *Ibid.*; p. 6-6

2/ The sum of replacement (due to attrition) plus additional needs.

B. AID Inputs - All elements of the project remain unchanged in substance. The \$4.8 million of AID funds added by this amendment will provide the equivalent of 456 academic person-years of training benefitting 478 Tunisian students, 108 of whom are new students. This will bring the total number of student academic person-years funded to approximately 766. The project will fund Tunisian engineering undergraduate students and graduate students in priority development fields such as management, international marketing, engineering, and food processing. The GOT will continue to be responsible for all international travel and for the local currency costs of English language training in Tunisia for the AID-supported students.

#### IV. Implementation

##### A. AID Disbursement Schedule and Projections

1. Disbursement of past AID scholarship funds has proceeded as follows:

- a. AID reimbursed \$562,584 towards the GOT's costs for 62 Tunisian graduate students who studied in the United States during the 1982-83 academic year, including all allowable expenses.
- b. A further \$271,650 of allowable expenses for the first semester costs for 70 graduate students in the 1983/84 academic year were reimbursed by AID.
- c. \$1,947,112 for the first and second semester costs for 295 undergraduate engineering students in the 1983/84 academic year were reimbursed by AID.
- d. Total disbursements as of November 1984 are \$2,781,346.

2. Disbursement of Amendment No. 3 funds is projected as follows:

- a. \$2.34 million will be reimbursed towards GOT scholarship costs for first semester fulltime graduate and undergraduate students in the 84/85 school year.
- b. \$2.34 million will be reimbursed towards GOT scholarship costs for second semester fulltime graduate and undergraduate students in the 84/85 school year.
- c. Funds (\$120,000) for the English language training assessment, the end-of-project evaluation, the financial audit, and FX costs of English language training in Tunisia will be disbursed by AID directly, based upon GOT concurrence with the implementation plan for each element.

3. AID scholarship funds will be used to reimburse GOT costs for eligible students, using a modified FAR procedure. Eligible students are defined as follows:

- a. Undergraduate students enrolled full-time in a degree-seeking program in engineering in a U.S. university and in good standing for the academic term.
- b. Graduate students enrolled full-time in a degree-seeking program in engineering and related technical fields in a U.S. university and in good standing for the academic term. (See Annex F page 2 which provides an example "Certification" statement to establish student eligibility).
- c. Students enrolled in English language instruction programs in U.S. universities or language schools, subject to achieving an acceptable level of English to permit entry into a degree-seeking program mentioned above in IV. A. 3.a. Up to one semester of full time English language instruction will be reimbursed using grant funds.

4. Up to \$20,000 will be available to reimburse the FX costs of English language training in Tunisia for pre-departure language preparation of scholarship students.

5. Up to \$100,000 will be available to finance costs of project assessments, evaluation, and financial audits.

B. Specific Assessment of Method of Project Implementation and Financing

1. Controller Concurrence with Financial Implementation

The FY 1985 USAID contribution to this project cost is \$4,800,000 and will cover costs associated with long-term training in the U.S., FX costs of in-country English Language training, audit costs, and evaluation costs.

The GOT contribution will comprise: International travel costs, In-country English language training (as appropriate), salaries of participants, project personnel costs and support costs for the Scientific Mission of Tunisia in Washington D.C.

The financing method outlined in this Project Amendment No. 3 is a modified Fixed Amount Reimbursement (FAR). This is an AID preferred method of financing and full justification for its use is not required. USAID will modify this method to finance scholarship training in the U.S. according to the following procedure.

The GOT, prior to any request for disbursement under this project amendment, will submit documentation to USAID supporting costs for long term participants under the program who meet the criteria detailed in Section IV. A. 3. a. and b. This documentation will be summarized and presented in the format indicated in Annex F.

Upon acceptance of this documentation, USAID will negotiate a FAR based on an average of the estimated cost per student payable in two installments for each term's expenses. At the beginning of each academic term and upon presentation to USAID of documentation by MHESR that each participant is a full-time student enrolled in an accredited degree-seeking program or full-time English language training at a U.S. University, USAID will make an initial disbursement (first installment) equal to 90% of the estimated average cost per student, using the tabular method shown in Annex F, times the number of students for which documentation has been submitted. The second disbursement (second installment) under the FAR will be made subject to satisfaction of all covenants and conditions precedent to disbursement. To receive the second installment payment, the GOT will provide, for USAID approval, documentary evidence that each student, for which final payment is being requested, meets the criteria outlined in Section IV. A. 3. for the academic term involved. This documentation will include a certification from the Scientific Mission of Tunisia in Washington, D.C. that each participant was a full-time student who successfully completed the academic term in an accredited degree-seeking program or full-time English language training at a U.S. University. (See Annex F for example certification). The total amount to be disbursed by USAID will in no event exceed the amount payable for each student meeting the criteria above at the end of the academic term times the negotiated FAR. The total amount payable for each eligible student for each academic term will be exactly the average cost per student as determined using the tabular method shown in Annex F.

## 2. Provision for Audit

Most of the expenditure of funds under this project will be made in the U.S. This project amendment will provide for audit coverage by independent public accountants in the U.S. and/or Tunisia as required. A preliminary procedural audit will be made to insure that adequate procedures are in place to provide good internal controls. This audit, or documentary evidence by the GOT that a satisfactory audit has been performed by the GOT is a condition precedent to a second disbursement under the FAR. Subsequent audit will be determined by the results of the preliminary audit.

C. Implementation Plan - The revised project implementation plan is projected as follows:

August 1981	Project Agreement signed.
August 1982	Contract signed with Academy for Educational Development.
October 1982	Resident Advisor arrives in Tunis.
February 1983	Advisor starts work with MHESR Washington Office.
February 1983	Committee for Manpower Planning established.
May 1983	Visits of deans of engineering schools to U.S. start.
June 1983	Resident Advisor departs Tunis. AED starts recruitment of visiting faculty for fall 1983.
September 1983	Joint project assessment completed and AED submits life of project plan to GOT and AID.
September 1983	Approximately 70 new Tunisian students (55 undergraduate and 15 graduate) start technical studies in the U.S.
Nov.-Dec. 1983	AED manpower planning expert conducts research in Tunisia initiating preparation of action plan for LOP.
December 1983	First visiting U.S. professors arrive in Tunisia.
January 1984	Additional 9 new Tunisian grad students start technical studies in the U.S. AED Manpower Study submitted to GOT.
February 1984	First Tunisian faculty on study tours arrive in U.S. for academic year 1983/84.
March 1984	Mid-project review carried out jointly by AED, AID, and GOT.
Sept.-Oct. 1984	108 new Tunisian students start technical studies in the U.S.
Sept.-Oct. 1984	Resumés for new AED fulltime project advisor submitted to GOT.
December 1984	GOT selects new AED advisor, and he initiates field missions in Tunisia.
March 1985	Consultant undertakes English Language Training Assessment.
July 1985	Final project evaluation carried out by an independent contractor, AID, and the GOT.
February 1986	PACD.

#### D. Evaluation Plan

Since the project is integrated within a large and growing GOT program of technical training in the U.S., AID and the GOT have concluded that project interests are better served by several informal joint project assessments instead of the more conventional mid project evaluation.

Three assessments are scheduled for the project, those done in September 1983, and in March 1984 near the mid-point of the project, and another in March 1985 which will assess English language preparation. Additional assessments may be scheduled as mutually agreed. The first two assessments were undertaken collaboratively by representatives of the AED, the GOT and A.I.D. A.I.D. funds for these first two assessments were included within the project and the resulting host-country contract. The English language training assessment, and the end-of-project evaluation scheduled for July 1985 will be undertaken by specialized consultants (outside the AED host country contract) to be selected by AID with GOT concurrence, and will be funded by the \$120,000 in project funds which are added through this amendment No. 3 for assessments, evaluations, financial audits and English language training in Tunisia.

#### V. Financial Plan

A. U.S. Contribution - It is anticipated that the \$4.8 million added in FY 85 through this amendment will be expended by February 28, 1986, as outlined in Sec. IV, A. This will cover costs of two semesters for the 84-85 school year for 478 Tunisian students. Any residual funds available will be used to partially cover costs of the first semester of the 85-86 school year.

B. GOT Contribution - The GOT's contribution to the Project has decreased from that presented in Project Paper Amendment No. 2 (\$30,050,000) to \$21,080,570. This reduction in GOT contribution is attributable to updated calculations of project costs, as described in Annex G and to the increase in AID's scholarship contribution. Since ESF funds were obligated in Project Amendments Nos. 1 and 2 and are the funding source of AID's contribution for this Amendment No. 3, no minimum GOT contribution rule applies.

C. Total Project Cost

	<u>GOT (DT)</u>	<u>GOT (\$)</u>	<u>AID (\$)</u>	<u>TOTAL (\$)</u>
1. <u>AED Contract for Technical Assistance and Short Term Faculty Exchanges</u>			1,450,000	1,450,000
2. <u>GOT Previous Undergraduate Scholarships '81-'83</u>		\$ 3,327,340		3,327,340
3. <u>Fall '82-Spring '84 Grad. + Undergraduate Scholarship Costs</u>		856,391	3,200,000	4,056,391
4. <u>GOT Airfares (\$1,700 full fare economy/ student/ year):</u>				
Undergraduates		\$ 3,196,000		
MS Students		107,000		
PhD Students		306,000		
Other Grad Degree Candidates (degree not yet reported by GOT)		214,000		
Grad students who have left the program (graduated or dropped out 6/84).		13,600		
Subtotal:				<u>3,836,600</u>
5. <u>GOT Administrative , Logistic Support and Placement Costs</u>				
Academic Affairs Office	400,000			
Salaries	126,700			
Logistical Support	48,300			
English Language Training	170,000			
R/T Airfares for Tunisian Faculty and MHESR Visits to US	80,000			
Subtotal	<u>825,000</u>			
U.S. \$1.00 equals TD 0.720				
subtotal dollar equivalent:		\$1,145,833		\$1,145,833

no

	<u>GOT (DT)</u>	<u>GOT (\$)</u>	<u>AID (\$)</u>	<u>TOTAL (\$)</u>
6. Estimated additional costs for completion of current students' degrees, fall '84 to estimated end of degree program:				
Known MS Candidates				298,480
Known PhD Candidates				1,108,640
Grad Students who started 1/84 (Degree candidacy unknown)				309,816
Graduate Students who started fall '84 (Degree candidacy unknown)				1,116,315
Undergraduates who started fall '84				5,093,361
Undergraduates who started fall '83				2,629,110
Undergraduates who started fall '82				2,318,324
Undergraduates who started fall '81				3,720,360
GOT share of degree completion costs ('84 - '85 school yr. to end of degree)		11,914,406		
USAID share of degree completion ('84-'85 school year)			\$4,680,000	
7. Project assessments, evaluation, financial audits, and English Language Instruction in Tunisia			120,000	
8. TOTALS		\$21,080,570	\$ 9,450,000	\$30,530,570

Note: .720 DT equals \$1 is projected average exchange rate from 8/81-12/85.

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U.S. Universities at which 1983 - 1984  
GOT Scholarship Students were Enrolled

	<u>Undergraduates</u>	<u>Graduates</u>
University of Akron	3	
Alfred University	5	1
University of Bridgeport	3	
California State University, Long Beach		10 1
Colorado School of Mines	9	
Columbia University	1	
East Carolina University	1	
University of Florida	3	4
University of Houston	4	
University of Illinois	4	4
Iowa State University	14	
University of Kansas	3	
University of Louisville	8	
Louisiana State	5	
University of Miami	7	
Michigan State University	24	
University of Michigan	5	2
University of Minnesota	18	4
Ohio State University	27	
Oklahoma State University	10	
Penn State University	20	2
University of Pittsburgh	2	
Purdue University	11	2
University of Rochester	11	
Smith College	1	
South Western, Los Angeles	9	
Syracuse University	12	1
University of Tennessee	14	4
University of Texas, Austin	12	
University of Toledo	1	
University of Tulsa	4	
Washington University, St. Louis	10	2
Wichita State University	7	
University of Wisconsin	17	
Caltech University		1
University of California, Davis		3
University of Missouri		2
Colorado State University		5
University of Kentucky		1
University of California, Los Angeles		5
Wharton		3

	<u>Undergraduates</u>	<u>Graduates</u>
University of Alabama		1
Case Western Reserve University of Ohio		1
University of South Carolina		1
Princeton University		1
MIT		1
University of Colorado, Boulder		6
University of Southern California		1
New York State University, Buffalo		1
GIT		1
University of Wisconsin		6
Harvard Law School		1
Georgetown University		1
University of Oklahoma		1
Rensselaer Polytechnic		1
New York University		2
Cornell University		1
University of Notre Dame		2
South Bend University, Indiana		1
University of Kansas		2
George Washington University		1
Stanford University		1
	<hr/>	<hr/>
	295	79

TECHNOLOGY TRANSFER PROJECT

LOGICAL FRAMEWORK

Narrative Summary

Goal: Long-term Technology Transfer to Tunisia

Indicators

1. Graduates of project sponsored training in U.S. serving on S and T faculties in Tunisia.
2. Technology manpower needs being met in Tunisia by Tunisians.
3. Regular flow of published cooperative research between the U.S. and Tunisia.
4. Graduate research being conducted on Tunisian topics in U.S. and elsewhere abroad.

Purpose to Goal Assumptions

1. U.S. technology is relevant and adaptable to Tunisia. GOT continues to recognize benefits of U.S. technologies.
2. Tunisian researchers will be motivated (by peer recognition) to produce publishable research.
3. Subjects relevant to Tunisia and Tunisian researchers will be stimulating to U.S. researchers.
4. Tunisian graduates will be motivated to join Tunisian faculties.

Purpose: Institutionalization of GOT capability to effectively and economically acquire and manage technology

1. 480 Tunisian students successfully pursuing academic degrees in technical fields in U.S. institutions.
2. Course offerings in Tunisian technical institutions increased in quantity, quality, and appropriateness to Tunisian economic development potential.
3. MHESR and MP have capability to accurately forecast labor needs in S and T sector.
4. Student placement services to MHESR in Tunis and Washington have capacity to screen, place and support students in U.S.

Output to Purpose Assumptions

1. GOT English training is sufficient for Tunisian students to function in the U.S.
2. GOT continues commitment to technical transfer objectives.
3. Faculties of Tunisian technical institutions receptive to U.S. curricula and pedagogical innovations.

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5. Institutional links developed between faculties of Tunisian technical institutions and U.S. institutions.

Outputs

1. Management planning task force established and functioning, and manpower training strategy adopted.
2. Tunisian institutions of higher technological studies are strengthened.
3. Student placement offices of MHESR in Tunis and Washington, D.C. are fully functional.

Indicators

1. Task force established within the Ministry of Higher Education composed of representatives from GOT ministries and Tunisian academic institutions by February 1983
2. 54 person months of U.S. faculty counselling on curriculum development, research programs, and pedagogical methods given to Tunisian technical institutions.  
36 faculty seminars conducted.  
Curricula offerings examined at 4 engineering schools, the business school, and schools of architecture and computer sciences.
3. 480 Graduate and undergraduate Tunisian students recruited and placed in U.S. universities during life of project.

Inputs to Output Assumptions

1. GOT can meet foreign exchange commitments through PACD.
2. U. S. professors available for missions to Tunisia and attracted by AID-supported daily rates.
3. GOT can identify and prepare students for U.S. university studies according to project implementation schedule.
4. U.S. universities and consortia respond to RFTP.
5. Tunisian students accepted into appropriate U.S. academic programs on schedule.
6. GOT legislation amended to include application fees.
7. Up to a year of GOT and AID supported English language training in the U.S. will enable Tunisian students to qualify for academic course work in technical higher education.

Inputs

Total project cost: U.S. \$30,530,570

Total U.S. contribution: U.S. \$9.45 million; 33 person-months of consultative services; recruitment, travel, and salary support for 54 person-months of U.S. faculty; student placement advisor in GOF office in Washington; up to 22 study tours of Tunisian faculty and administrators to U.S.; fulltime U.S.-based advisor to MIESR; tuition, room, board and other AID allowable expenses for approximately 700 person-years of academic study in the U.S.

Total GOF contribution: U.S. \$21,080,570: All travel for students; tuition, room and board expenses for those Tunisian student costs not funded by AID; travel and salaries for Tunisian professors on faculty exchanges in the U.S., administrative support in Tunis and Washington, D.C.

PACD: February 28, 1986

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 UNCLAS TUNIS 28910

ANNEX C

CLASS: UNCLASSIFIED  
 CMOB: AID 11/13/84  
 APPV: DIR: JRP/PHIPPARD  
 DRPTD: PROG: E/LEONARD: LBR  
 CLEAR: 1. SGT: D/PRINDLE  
 2. CONT: E/SHARDY  
 DISTR: AID 1

AIDAC

E.O. 12356: N/A  
 SUBJECT: CONGRESSIONAL NOTIFICATION FOR PROJECT 664-8315  
 (TECHNOLOGY TRANSFER)

REF: PETERS-PHIPPARD TELCONS

1. FY 1985 OBLIGATION \$4.8 MILLION. (PACD FEBRUARY 1985). LOP FUNDING \$9.45 MILLION OF WHICH \$7.9 MILLION FOR SCHOLARSHIPS; \$1.55 MILLION FOR TA, FACULTY EXCHANGES, ASSESSMENTS.

2. TUNISIAN STUDENTS RECEIVING SCHOLARSHIPS FOR TRAINING IN U.S.: LOP-493; IN ACADEMIC YEAR 1984-85 - 478 STUDENTS, NUMBER OF NEW STUDENTS IN 1984-85 - 108.

3. LOP PERSON YEARS FUNDED - 766.

4. FIRST GRADUATE RECEIVED MASTER'S DEGREE DECEMBER 1983. NUMBER OF GRADUATES BY PACD - 15 MASTER'S AND AT LEAST 22 UNDERGRADUATES (WE ARE WAITING FOR DATA FROM TUNISIAN SCIENTIFIC MISSION WHICH WILL PERMIT MORE PRECISE ESTIMATE OF B.S. GRADUATES).

5. 1983-84 STUDENTS: FIELDS OF STUDY

FIELDS	NO. GRAD STUDENTS	NO. UNDERGRAD STUDENTS
I. ENGINEERING		
CIVIL	18	38
ELECTRICAL	9	92
MECHANICAL	5	79
INDUSTRIAL	2	26
CHEMICAL	-	21
PETROLEUM	-	11
MINING	-	5
AERONAUTICS	-	7
NUCLEAR	-	1
ENVIRONMENTAL	1	-
HYDRAULIC	1	-
UNRELATED TECHNICAL TRAINING	-	-
INFORMATION SYSTEMS	1	-
BUSINESS/MANAGEMENT	7	11
ECONOMICS	4	1
AGRICULTURAL ECONOMICS	1	-

<input checked="" type="checkbox"/>	INFO
<input checked="" type="checkbox"/>	DIR
<input checked="" type="checkbox"/>	D/DIR
<input checked="" type="checkbox"/>	PLR
<input checked="" type="checkbox"/>	PHIP
<input checked="" type="checkbox"/>	T/S
<input checked="" type="checkbox"/>	TE/P/ABNALL
<input checked="" type="checkbox"/>	COFF
<input checked="" type="checkbox"/>	3 cys
<input checked="" type="checkbox"/>	F/A
<input checked="" type="checkbox"/>	RD
<input checked="" type="checkbox"/>	RHINO
<input checked="" type="checkbox"/>	P/C
<input checked="" type="checkbox"/>	FMB/ADMIN
<input checked="" type="checkbox"/>	FMB/OSO
<input checked="" type="checkbox"/>	FOI
<input checked="" type="checkbox"/>	FCOM
<input checked="" type="checkbox"/>	C&R USAID
<input checked="" type="checkbox"/>	CHRON
<input checked="" type="checkbox"/>	RF

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UNCLASSIFIED

TUNIS 9910

ACCOUNTING	3	1
LAW	1	-
ARCHITECTURE	1	-
COMMUNICATIONS	1	-
CHEMISTRY	1	-
PHYSICS	2	-
MATH	5	-
CERAMICS/GLASS SCIENCES	1	5
LINGUISTICS	1	-
CLINICAL PSYCHOLOGY	1	-
INDUSTRIAL PSYCHOLOGY	-	1
METALLURGY	-	2
BIOLOGY	-	1
III. UNREPORTED BY GOT	10	1
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ANNEX C

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STATE DEPT  
 OFFICE OF THE ASSISTANT SECRETARY FOR  
 INTERNATIONAL DEVELOPMENT  
 ECONOMIC AND BUSINESS AFFAIRS  
 DIVISION  
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AIDAC

E.O. 12356-N/A

TAGS:

SUBJECT: TECHNOLOGY TRANSFER PROJECT (664-3197); DELEGATION OF AUTHORITY

REF: (A) TUNIS 89699 (B) TUNIS 83197 (C) STATE 861821 (D) STATE 359835

1. THE ASSISTANT ADMINISTRATOR HEREBY AUTHORIZES USAID/TUNIS TO AMEND SUBJECT PROJECT PAPER AND REDELEGATES APO EOC AUTHORITY TO THE USAID/TUNIS MISSION DIRECTOR TO AMEND THE PROJECT AUTHORIZATION TO EXTEND THE LIFE OF PROJECT UP TO FEBRUARY 28, 1986 AND INCREASE FUNDING AVAILABLE TO THE PROJECT BY AN AMOUNT NOT TO EXCEED AN ADDITIONAL DOLLARS 4.8 MILLION.

2. PBA REPTEL (C) MISSION MAY PROCEED WITH OBLIGATION OF SUBJECT PROJECT FUNDS UPON NOTIFICATION THAT CM HAS EXPIRED WITHOUT OBJECTION AND ADDITIONAL BUDGET ALLOWANCE IS RECEIVED. BUDGET ALLOWANCE IS IN PROCESS AND WILL BE PROVIDED SEPTEL. DAM

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4eme : Contribution financière à la construction et à l'Equipement de l'Institut Régional des Sciences Informatiques et Technologiques Associées (IRSIT) = 2 Millions de \$ US

5eme : Financement des études effectuées par des Universitaires et des experts et toute assistance technique requise pour la mise sur pieds de Carthago Institute of Technology (CIT) = 1,5 Millions \$US étant précisé que tout reliquat disponible non affecté de cette dernière rubrique servira à financer des équipements pour l'IRSIT ou pour tout autre institut relié à l'environnement informatique en général.

6eme : Financement complémentaire au projet 664-0328 : 1 Million de \$ (projet de transfert de technologie et développement de secteur privé).

S'agissant d'une aide à caractère spécifique qui est destinée aux pays amis des Etats-Unis d'Amérique pour les aider à assurer et à garantir, compte tenu de leurs priorités, leur sécurité économique, le Gouvernement Tunisien considère que la programmation ci-dessus avancée de la subvention des 20 Millions de \$ US (ESF), répond au mieux à ses objectifs tendant à développement économique harmonieux et sécurisé de la Tunisie.

Toute autre programmation du Don en question sera d'une portée moindre en ce qui concerne la réalisation de nos objectifs de développement.

Aussi vous saurais je gré de la diligence avec laquelle vous voudriez bien informer, de ce qui précède, vos autorités compétentes afin de pouvoir procéder à la signature des Accords de projets dans les meilleurs délais possibles en tenant compte des éléments de précision sus-visés.

Veuillez agréer, Monsieur le Directeur, l'expression de ma considération très distinguée.



A.I.D. Project No. 664-0315  
Amendment No. 3  
December 26, 1984

AMENDMENT No. 3  
TO  
PROJECT GRANT AGREEMENT  
BETWEEN  
THE REPUBLIC OF TUNISIA  
AND  
THE UNITED STATES OF AMERICA  
FOR  
TECHNOLOGY TRANSFER

AMENDMENT No. 3, dated December 26, 1984 to the Project Grant Agreement, dated August 31, 1981 and amended August 30, 1983 and April 27, 1984 (the "Agreement") between the REPUBLIC OF TUNISIA ("Grantee") acting through the Ministry of Foreign Affairs and the UNITED STATES OF AMERICA acting through the Agency for International Development ("A.I.D.")

WHEREAS, the REPUBLIC OF TUNISIA and the UNITED STATES OF AMERICA entered into an Agreement for Economic, Technical and Related Assistance dated March 26, 1957, pursuant to which this Amendment is entered into by the Grantee and A.I.D., and

WHEREAS A.I.D. has agreed to provide an additional contribution of \$4,800,000 for the Project which the Parties have mutually agreed shall be used to support the Grantee's program of training students in the U.S. and

WHEREAS the Grantee is meeting its commitments to the Project, and

WHEREAS the Parties confirm their mutual responsibilities under the Project,

NOW THEREFORE the Parties agree as follows:

1. SECTION 2.1 of the agreement is amended by adding at the end "Under this project, related faculty disciplines for the purpose of faculty study tours shall include the field of medicine."
2. SECTION 3.1 of the Agreement is amended by deleting the words "not to exceed Four Million Six Hundred Fifty Thousand (\$4,650,000) United States (US) Dollars (the Grant)" and substituting in lieu thereof "not to exceed Nine Million Four Hundred Fifty Thousand United States (\$9,450,000) (US) Dollars (the Grant)".
3. SECTION 3.2(b) is amended by deleting "Thirty Million, Fifty Thousand (\$30,050,000) U.S. Dollars including costs borne on an "in-kind" basis, but in no event less than twenty-five percent (25%) of the Total Project Cost," and substituting in lieu thereof "Twenty One Million Eighty Thousand Five Hundred and Seventy (\$21,080,570) U.S. Dollars, including costs borne on an "in-kind" basis."

4. SECTION 3.3(a) is amended by changing the PACD to February 28, 1986.

5. ARTICLE 4 is amended to add the following sections:

SECTION 4.5 Conditions Precedent to Second Disbursement under Amendment No. 3. Prior to the second disbursement under the Third Amendment or to the issuance of commitment documents pursuant to which disbursement will be made, the Grantee shall, except as the Parties may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D., evidence that a satisfactory audit of the scholarship portion of this project has been performed by the Grantee or independent accountants within the last calendar year.

6. SECTION 4.3 is amended by adding "and Section 4.5" after "4.2."

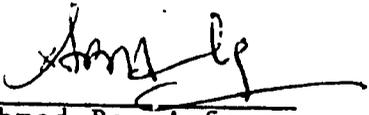
7. SECTION 6.1 Foreign Exchange Costs is amended by adding after ("Foreign Exchange Costs") the following: "and to finance the foreign exchange costs of English language training in Tunisia".

8. Annex 1 is amended as shown in attachment 1 to this amendment.

9. Except as amended hereby, the Agreement remains unchanged and shall continue in full force and effect.

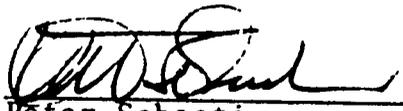
IN WITNESS WHEREOF, the REPUBLIC OF TUNISIA and the UNITED STATES OF AMERICA, each acting through its duly authorized representative, have caused this amendment No. 3 to be signed in their names and delivered as of the day and year first above written.

REPUBLIC OF TUNISIA

By:   
Mr. Ahmed Ben Arfa  
Secretary of State to  
Minister of Foreign  
Affairs in Charge of  
International Cooperation

Date: DEC 26 1984

UNITED STATES OF AMERICA

By:   
Peter Sebastian  
Ambassador of the United  
States of America

Date: DEC 26 1984

By:   
James R. Phippard  
Director  
USAID/Tunisia

Date: DEC 26 1984

## ANNEX 1

### A. THE PROBLEM

Among the matters receiving priority attention by the Grantee in the implementation of its Sixth Development Plan (1982-1986) are education and employment. Education is seen as the vital link to modernization. The Grantee annually allocates one-third of its national budget to education, making Tunisia's percent of budget invested in education and training one of the highest in the world. The Grantee is making considerable effort to relate the products of the educational system to the needs of the general economy.

As the Grantee initiates implementation of the Sixth Development Plan it is seeking new ways to address education and employment for high school and college graduates alike. At the college level, the Grantee recognizes the need to produce significantly more engineers and related technicians in the next five years. It further recognizes that its access to U.S. scientific and technological expertise through its higher education and research communities is limited. The problem for the Grantee is how best to absorb and adapt U.S. technology to meet its own educational and employment needs.

### B. THE PROJECT

The Grantee has approached the U.S. Government for assistance in solving its short-term need to train more technical students overseas and its long-term requirement to strengthen its technical training capability and to develop ties between the U.S. technological community and Tunisian higher education institutions.

The Grantee has requested assistance from A.I.D. in (1) enhancement of curricula at both graduate and undergraduate levels at selected Tunisian technical institutions, (2) support of the placement process of the Grantee program for sending a large number of Tunisian students to U.S. technical schools, (3) efforts to develop and maintain institutional links between U.S. and Tunisian research communities, (4) development of institutional capacity in planning the supply of technical manpower to meet national priority needs and (5) direct A.I.D. support in the U.S. for undergraduate engineering degrees and for graduate degrees in priority development fields, such as management, computer sciences, engineering, physics, architecture and food processing.

A.I.D. has intensified efforts to support projects which are likely to produce lasting impact on Tunisian development. To this end, A.I.D. and the Grantee have agreed on this project to institutionalize technology transfer in engineering and other technical fields. During the life of the project over 470 Tunisian

students will be placed in U.S. universities at both the graduate and undergraduate levels, a manpower planning system in the fields of science and technology appropriate to Tunisia's needs will be developed and put into operation, procedures for expeditious preparation of student academic dossiers for placement in the United States will be developed and staff will be trained in placement procedures, and selected Tunisian higher institutions of technical training (as mutually agreed by the Grantee and A.I.D.) will be assisted in enhancing their curricula and teaching methodologies through short-term consultants and through the presence of visiting U.S. professors.

The project will be implemented through the Office of International Cooperation (DCI) of the Ministry of Higher Education and Scientific Research (MHESR). This office will cooperate closely with the Directorate of Higher Education and the Directorate of Scientific and Technical Research (both of MHESR), the Scientific Mission of Tunisia in Washington, D.C., the Manpower Planning Office of the Ministry of Plan and appropriate offices within the Ministry of National Economy and other Ministries as required. The role of these ministries will focus primarily on inputs to manpower planning in technology fields and on some placement of students.

Technical assistance will be provided to the Grantee through a host-country contract with a qualified U.S. university, firm, organization or consortium of such organizations, and through additional contracts as required. The former will provide both long-term and short-term assistance in Tunisia and in the United States, while the latter will assist the Tunisian Student Placement Service in Tunis with the processing of student dossiers for placement in the United States.

### C. Project Components

The project will provide technical, material and financial support to Tunisia's Ministry of Higher Education and Scientific Research: (1) to develop a manpower planning capability to estimate and plan for the future human resource needs of Tunisia, expanding Tunisian scientific and technical institutions in a pattern consistent with Tunisian development priorities, (2) to direct selected Tunisian students in scientific and technical fields to appropriate institutions and fields in the U.S., (3) to provide U.S. professors who will assist Tunisian educational institutions, upgrade curricula and pedagogic methods, organize research and teach selected courses, and (4) to support the training of selected Tunisian students in the U.S. in fields of high development priority. In carrying out these activities emphasis will be placed on appropriate and development related applied technology, and on the establishment of lasting professional linkages between Tunisian and U.S. institutions.

The project will consist of the following components:

1. Manpower Planning

Currently Grantee manpower planning is carried out on a macro scale by the Directorate of Manpower Planning of the Ministry of Plan. The sources of data for the work of the Directorate are the other line ministries, primarily through their statistical and planning units. For the Ministry of Higher Education and Scientific Research (MHESR) the institutional link with the Ministry of Plan is the Office of Planning, Statistics and Data Processing. A major responsibility of this office is to determine demand by academic field for higher education. The determinations are based on manpower requests from each ministry and also serve as the starting point for planning for faculty and facilities required to meet the demand for training.

This component of the project will assist the MHESR and MP to develop and put into operation a manpower planning system that is commensurate with the Grantee's needs in the fields of science and technology. Early in project implementation a manpower planning task force made up of representatives from the MHESR, the MP, the Ministry of National Economy and ad hoc members from other relevant ministries, and the long-term advisor or other host-country contractor's representative will be created and will direct technical manpower planning in higher education for the MHESR. Its initial task will be to identify short-term technical assistance needs to strengthen the MHESR manpower planning capacity in science and technology and to examine the feasibility of adapting the MP manpower planning model to the forecasting requirements of the MHESR, thereby establishing a planning system capable of working with supply and demand projections in all technical fields

The scheduling and monitoring of the short-term consultants in manpower planning will be the responsibility of the long-term advisor and the principal counterpart, the Director of International Cooperation (DCI) of the MHESR. However, the task force will be the principal beneficiary of the short-term manpower planning assistance provided by this project and will be the channel through which the consultants will provide assistance to obtain data from other ministries involved with technical manpower, as either suppliers or end-users.

2. Student Placement

At the request of the Government of Tunisia, the MHESR has embarked on a program to send a large number of Tunisian undergraduate and

graduate students to the United States for academic training in technical fields. Approximately 214 students were placed in the United States for academic year 1981-82, before A.I.D. assistance began, and 91 and 80 were placed in 1982-83 and 1983-84 respectively. The Grantee now proposes to place an average of 100 students per year during each of the remaining years of the project. Prior to departure they will receive English language training at the English Language Center recently established by MHESR or through secondary school curriculum modification which the Grantee may arrange.

A.I.D. financing of this component will include technical assistance to the Grantee in placement of students for academic studies in engineering and other technical fields. A short-term advisor in Tunis will work with and train the staff of the MHESR in the design of a system to place Tunisians in U.S. technical institutions and in the preparation of student academic dossiers necessary to make application to U.S. institutions.

His/her principal counterpart will be the Chief of the new Service for Student Placement in the United States, who will be responsible for the preparation of documentation for U.S. placement of Tunisian students. This service is being created separately from other services within the DCI which handle foreign placement of students because the size of the new program is substantially larger and much more complex than the previous experience of the DCI in student placement abroad. In addition, the MHESR has created the Scientific Mission of Tunisia in Washington, D.C. to service the participants of this project and to develop institutional contacts and exchanges. This office is staffed by a Tunisian director and a deputy director qualified in student placement, administration and counselling and familiar with Tunisian technical schools. A.I.D. financing will provide for a long-term consultant in Washington to assist this office to develop a comprehensive placement, counseling and student orientation program. This office began activity in the spring of 1982 and is expected to continue at a minimum until February 1986.

### 3. Strengthening Tunisian Scientific and Technological Academic Institutions

The function of this component is to strengthen the institutional capacity of Tunisia's advanced technological training institutions through the integration of U.S. technical curricula and teaching methods in undergraduate and graduate programs of selected technical institutions. As mutually agreed by the Grantee and A.I.D. such development will take place at three different levels. First, it will assist at the national level through the provision of technical assistance to the Directorate of Higher Education of MHESR to address questions such as degree equivalency and institutional growth patterns.



Second, at the institutional level it will provide 54 person months of senior level visiting U.S. engineering professors. This will expose Tunisian faculty to U.S. curricula and pedagogic methods at several engineering schools and will foster long-term institutional and professional contacts. An important objective of the project is the establishment of professional and institutional linkages between Tunisian and U.S. institutions of higher technical education. To this end, the project resources will be used to promote an institutional tie between each Tunisian institution assisted and a specific U.S. academic institution, and to the extent practicable the flow of visiting U.S. professors and Tunisian administration faculty on study/tours will occur between paired institutions.

Third, at the classroom level it will provide in-service training of Tunisian counterparts on a one-to-one basis by the visiting professors. Each professor will be assigned one or more counterpart faculty members who will work with him/her during his stay and who will be expected to take over any courses and research programs established by him. This component will also introduce new course content, teaching strategies and teaching materials through inputs of short-term consultants.

A final feature of this component deals with the limited access of Tunisian officials in higher education to U.S. technology and the U.S. higher education system. A.I.D. will finance the cost of course materials and travel within the United States for approximately 22 short-term study tours by Grantee administrators or senior professors associated with advanced training in engineering and related fields. These trips will enable the Tunisian scientific and technological leadership to develop an understanding of how best to transfer U.S. technology to their institutions and to initiate what is intended to be lasting personal and institutional relationships with U.S. professionals. The selection of participants will be determined by the Grantee's project manager in consultation with the long-term advisor(s).

#### 4. Training Program

This component will provide A.I.D. financing to the ongoing U.S. training program operated by the Tunisians. A.I.D. will finance approximately 766 person-years of training for engineering undergraduate degrees and graduate degrees in development priority fields such as management, computer sciences, engineering, architecture, food processing, physics, and other fields as the parties may agree. A.I.D. will finance tuition, books, maintenance expenses, transportation within the U.S., health insurance, and other expenses normally paid for A.I.D. participants. The Grantee will be responsible for international transportation of the A.I.D. financed students, as well as all costs for the non-A.I.D. supported students.

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## D. PROJECT IMPLEMENTATION

### 1. Project Committee

Because the activities of this project involve more than one ministry, and in the case of MHESR multiple offices within a single ministry, a committee will be established to guide the effort. The committee will be chaired by the Director of International Cooperation (DCI) of MHESR and will include the Director of Higher Education, the Director of Scientific and Technical Research, and the Chief of the Service for Student Placement in the United States (all of MHESR), and representatives from the ministries of Plan (MP) and National Economy. It will meet periodically and its particular role will be to provide overall policy guidance and to assure coordination among key project components such as the placement of U.S. faculty members, recruitment and predeparture preparation of participants, utilization of short-term technical assistance and the functioning of the manpower planning task force. The contractor's long-term advisor will act as a technical advisor to the committee and will coordinate the technical assistance provided by this effort for the life of the project.

### 2. Manpower Planning Task Force

A second body that will be established and which will have a role in the project will be the Manpower Planning Task Force. This task force will be the meeting ground for the producers and end-users of technically trained manpower. Among its members will be the A.I.D. funded contractor's long-term advisor, the Director of Higher Education of MHESR, the head of the statistical and planning unit of the same office, a member of the manpower planning unit within the MP, a representative of the Ministry of National Economy and ad hoc representatives of other ministries as required.

This task force will determine the appropriate mix of consultant expertise to be provided by the project to (a) develop the MHESR manpower planning capability in science and technology and (b) if found appropriate by the MHESR, to adapt, select, or develop a manpower-planning model to be compatible with current MHESR procedures. In the long-term it is expected that this task force will become a permanent body gradually expanding its sphere of activity until it provides guidance on technical manpower planning for all sectors of the Tunisian economy.

### 3. Project Coordinator

The project will be administratively located in the MHESR. The Tunisian project coordinator will be the Director of DCI of MHESR who within the organizational structure of the MHESR reports directly to the Minister. He will either manage the details of the project or delegate authority to manage such details, and he will chair the project committee, sign vouchers and resolve issues as they may arise among the heads of the technical offices involved with project implementation.

For discrete project activities the project coordinator will designate operational responsibility to the heads of various organizations within the MHESR. For example, the Directorate of Higher Education of MHESR will be the office involved with the placement of visiting professors in Tunisians technical institutions, the selection and assignment of short-term technical experts, and the handling of degree equivalency issues. The determination of the numbers of students who are to be sent for training in the United States, their fields of study and the process for selection of candidates for placement, and general curriculum development and planning for institutional growth is the responsibility of the Cabinet of the Minister of MHESR. Moreover, the project coordinator will be the principal representative of MHESR in dealing with the MP in manpower planning efforts.

#### 4. Service for Student Placement in the United States

Preparation of academic dossiers for students prior to their departure will be the responsibility of the newly created Service for Student Placement in the United States. This service will be located in the DCI of MHESR. It will be staffed by a Chief of Service, a professional assistant with expertise in student dossier preparation and a secretary, and the service will report directly to the project coordinator, the Director of DCI of MHESR. This service will be parallel to but outside of other student placement units supervised by the Deputy Director of DCI which are also involved with the placement of students in universities overseas. The rationale for creating a separate service with a unique reporting arrangement is a result of the large volume of students that will be processed and the complex placement information required by U.S. universities. Moreover, it attests to the importance placed on this effort by the Grantee.

#### 5. The Scientific Mission of Tunisia

The Scientific Mission of Tunisia has been established in Washington, D.C. and will work directly with the Student Placement Service in Tunis. It will be directly responsible for fostering long-term educational exchanges with U.S. universities and in that sense will have a much broader mandate than student placement. However, one of its major responsibilities will be to provide for the orientation and placement of more than 385 students to be sent to the United States during the life of the project. It will be staffed by a Director and a Deputy Director who are both senior level professionals knowledgeable of the Tunisian technical higher education system. It is expected that the Director will concentrate

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on establishing long-term contacts with U.S. universities while the Deputy Director focuses on matters of student placement and orientation. This office is responsible to the Minister, but on practical matters affecting student placement it will report directly to the project coordinator, the Director of DCI of MHESR. It will have its own operating budget, including funds for office space, a secretary, and operating expenses. U.S. financing will support the provision of a long-term (30 month) technician to assist this office to implement workable orientation and placement procedures, the organization and support of student orientation seminars, and the development of a computerized data base and data management capability for this office

#### 6. A.I.D. Training Costs

A.I.D. will finance approximately 766 person-years of training for approximately 470 Tunisian students pursuing academic degrees. A.I.D. will provide \$8,000,000 for this purpose to the Grantee. The allocation of these funds is described below:

Disbursement of A.I.D. scholarship funds under Amendment 1 and 2 has proceeded as follows:

- a. A.I.D. reimbursed \$562,584 towards the GOT's costs for 62 Tunisian graduate students who studied in the United States during the 1982-83 academic year, including all allowable expenses.
- b. A further \$271,650 of allowable expenses for the first semester costs for 70 graduate students in the 1983-84 academic year were reimbursed by A.I.D.
- c. \$1,947,112 for the first and second semester costs for 295 undergraduate engineering students in the 1983-84 academic year were reimbursed by A.I.D.
- d. Total disbursements as of November 1984 are \$2,781,346.

Disbursement of Amendment No. 3 funds is projected as follows:

- a. \$2.34 million will be reimbursed towards GOT scholarship costs for first semester full-time graduate and undergraduate students in the 1984-85 school year.
- b. \$2.34 million will be reimbursed towards GOT scholarship costs for second semester full-time graduate and undergraduate students in the 84-85 school year.
- c. Funds (\$120,000) for the English language training assessment, the end-of-project evaluation, the financial audit, and FX costs of English language training in Tunisia will be disbursed by A.I.D. directly, based upon GOT concurrence with the implementation plan for each element.

#### E. PROJECT INPUTS

The total cost of this project is estimated at U.S. \$30,530,570. Of this total U.S. \$9,450,000 will be funded by A.I.D. with the balance

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(equivalent to U.S. \$21,080,570) contributed by the GOT. A.I.D. financed inputs include technical assistance and training. The Grantee will provide Tunisian staff and office space, both in Tunisia and in the U.S., facilities for in-country language training, international travel for Tunisian students, all tuition maintenance and fees for Tunisian students, international travel for all but 11 of the Tunisian administration and faculty members visiting the United States under study tours, and local transport and logistical support for visiting U.S. faculty members and technical specialists.

1. AID Inputs

a. Technical Assistance

A significant portion of the A.I.D. inputs to this project will be the financing of a host-country contract for technical assistance with a U.S. university, firm, organization or consortium of such organizations. This assistance will include a long-term advisor in Tunis and/or an intermittent visiting advisor or set of intermittent advisors, the exact mix to be agreed upon between the GOT and their contractor and concurred in by A.I.D. He/she will have as a counterpart the Tunisian project manager, the DCI of MHESR, and will work closely also with the Director of Higher Education, MHESR. He will coordinate implementation of the key elements of the project, including refinement of manpower planning methodology, assessment of the needs of the technical and engineering faculty curricula, recruitment of U.S. visiting professors, and placement and supervision of project-financed short-term consultants. An advisor or advisors will be involved on a continuing basis through the life of the project and will have a background in engineering with relevant experience in teaching and university administration.

Another part of the host-country contract will provide approximately 33 person-months of short-term technical assistance. These consultants, under the guidance of the contractor's advisor(s), will provide expertise on curriculum reform, teaching methodology, manpower planning, library development, and other technical and administrative matters as determined to be useful. Under a separate contract A.I.D. will fund a short-term student placement specialist in Tunis. He/she will train the staff of DCI, MHESR in establishing a student academic dossier transfer system in cooperation with the Scientific Mission of Tunisia.

Another part of the host country contract will provide approximately 54 person-months of short to medium term visiting professors. These professors, under the guidance of the contractor's advisor(s), will teach courses, conduct faculty and student seminars, organize and oversee student research and otherwise provide expertise in technical training and the transfer of American teaching and research methods by instruction and by example, as determined to be useful.

Also financed under the host-country contract will be the services of one foreign student specialist for 30 months who will be stationed in Washington, D.C. in the Scientific Mission of Tunisia. This specialist will provide assistance to the office in organizing and operating a large-scale placement and follow-up system in support of Tunisian students.

b. Training

The largest component of A.I.D. funding will be used for training and will total U.S. \$8,140,000. This component will consist of \$7,880,000 for approximately 766 person-years of training benefitting an estimated 470 Tunisian students in the U.S., \$120,000 for training costs under Section C.6.c. above, and \$140,000 for about twenty-two short-term study tours for Tunisian higher education administrators and academics. The purpose of the tours will be to provide key Tunisian officials with exposure to contemporary technology training methods in the U.S. and the opportunity to establish long-term personal and institutional ties with the U.S. technology and higher education communities.

2. Government of Tunisia Inputs

The Grantee will contribute approximately 70 percent of the total dollar value of this project. The Grantee will pay the recurring costs of the Student Placement Service within DCI, MHESR, the start up and recurrent costs of English language training and the recurrent costs of the Scientific Mission of Tunisia in Washington, D.C. The English Language Training Program, the Service for Student Placement in the United States and (in terms of its major task) the MHESR Office in Washington have been created at the initiative of the Grantee specifically in order to support the larger program of an increased flow of Tunisian technical students to the United States.

The Grantee will provide total academic and personal financial support, including international travel, for Tunisian students sent to the U.S. The Grantee will furnish complete administrative and logistical support for the long-term advisor(s) and for the short-term student placement consultant to the office of the DCI, MHESR and will provide administrative support for the long-term advisor to the Scientific Mission. Finally, the Grantee will provide local transportation for 54 person-months of visiting U.S. professors and will provide administrative support at their host Tunisian technical institutions, and to the extent that budgetary resources are available the Grantee will pay locally based salary and/or per diem for professors visiting a semester or longer.

F. PROJECT BUDGET

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<u>Total Project Cost</u>	<u>GOT (DT)</u>	<u>GOT (\$)</u>	<u>AID (\$)</u>	<u>TOTAL (\$)</u>
1. <u>AED Contract for Technical Assistance and Short Term Faculty Exchanges</u>			1,450,000	1,450,000
2. <u>GOT Previous Undergraduate Scholarships '81-'83</u>		\$ 3,327,340		3,327,340
3. <u>Fall '82-Spring '84 Grad. + Undergraduate Scholarship Costs</u>		856,391	3,200,000	4,056,391
4. <u>GOT Airfares (\$1,700 full fare economy/ student/ year):</u>				
Undergraduates		\$ 3,196,000		
MS Students		107,000		
PhD Students		306,000		
Other Grad Degree Candidates (degree not yet reported by GOT)		214,000		
Grad students who have left the program (graduated or dropped out 6/84).		13,600		
Subtotal:				3,836,600
5. <u>GOT Administrative , Logistic Support and Placement Costs</u>				
Academic Affairs Office	400,000			
Salaries	126,700			
Logistical Support	48,300			
English Language Training	170,000			
R/T Airfares for Tunisian Faculty and MHESR Visits to US	80,000			
Subtotal	825,000			
U.S. \$1.00 equals TD 0.720 subtotal dollar equivalent:		\$1,145,833		\$1,145,833

	<u>GOT (DT)</u>	<u>GOT (\$)</u>	<u>AID (\$)</u>	<u>TOTAL (\$)</u>
6. Estimated additional costs for completion of current students' degrees, fall '84 to estimated end of degree program:				
Known MS Candidates				298,480
Known PhD Candidates				1,108,640
Grad Students who started 1/84 (Degree candidacy unknown)				309,816
Graduate Students who started fall '84 (Degree candidacy unknown)				1,116,315
Undergraduates who started fall '84				5,093,361
Undergraduates who started fall '83				2,629,110
Undergraduates who started fall '82				2,318,324
Undergraduates who started fall '81				3,720,360
GOT share of degree completion costs ('84 - '85 school yr. to end of degree)		11,914,406		
USAID share of degree completion ('84-'85 school year)			\$4,680,000	
7. Project assessments, evaluation, financial audits, and English Language Instruction in Tunisia			120,000	
8. TOTALS		\$21,080,570	\$ 9,450,000	\$30,530,570

Note: .720 DT equals \$1 is projected average exchange rate from 8/81-12/85.

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## G. PROJECT EVALUATION

Because the AID project is integrated with a large and growing GOT program of technical training in the U.S. and because the system of technical higher education is in a period of change requiring periodic adjustment to the nature of assistance given it for maximum effectiveness, AID and the GOT have concluded that the interest of the project is better served by a larger number of informal joint project assessments rather than by the more conventional mid-and final project evaluations.

Three assessments are scheduled for the project, one in September 1983, one in March 1984 and another in July 1985. Additional assessments may be scheduled as mutually agreed. Assessments are undertaken collaboratively by representatives of the contractor, the GOT and A.I.D. A.I.D. funds for project assessment are included within the project and the resulting host-country contract. The assessments will take place concurrently with project implementation and there will be no delay in on-going project activities.

### 1. Timing

The first assessment took place in September 1983 and the second took place in March 1984 at a time when the project had been active through one and a half academic years. This timing allows the assessment to evaluate the function and effectiveness of the student placement and orientation system and the visiting professor program. In future assessments interviews should be held with Tunisian students returned from training and with both U.S. and Tunisian faculty members who have been involved in the program.

At the time of the second assessment the Manpower Planning Task Force had been established for one year and short-term technical assistance to the task force had been initiated six months before. The role and capability of the task force should therefore have been clear by the time of this assessment. Technical assistance in curriculum development for the technical institutions had also been in progress for over a year, and the impact on the curricula planned for the fall of 1984 was examined. All policy issues within the project, such as the process for degree equivalency advance evaluation and the role of the Manpower Planning Task Force, should have been clearly defined by the time of the mid-project assessment, and it should recommend any mid-project corrections to be implemented during the balance of the project.

The final project assessment is scheduled for July 1985 and will focus on the effectiveness of methods and procedures used during the project to augment Tunisian technical training capacity and to improve manpower planning capability. It will make recommendations for future actions to be taken by the GOT. It will also examine the success of the training programs.

## 2. Criteria

The success of the project will be judged along two major dimensions:

a. The efficiency of the project will be seen in whether or not contributions have been made on schedule, technicians have arrived when needed, prescribed roles have been carried out, administrative units, committees and task forces have been established and staffed, resources have been properly managed, U.S. professors have been placed, students have been enrolled and a number of other actions described by the project have been carried out as projected. The criterion to be applied here focus on whether or not obligations have been met and prescribed actions have been carried out in a timely manner.

b. The effectiveness of the project is measured along a very different dimension. Here one must look at issues such as the degree to which U.S. faculty members have been integrated into Tunisian faculties and properly utilized, the effectiveness of the Manpower Planning Task Force and its acceptance by MHESR and other involved ministries, the impact of academic technical assistance on curricula and pedagogical methods, and the degree to which any such impacts appear to affect institutional operation and the quality of technical education. The criterion applied here is the impact of the various project elements and the apparent desirability of such impacts. The assessment should not hesitate to recommend termination of an ineffectual project element, and should make constructive recommendations for new or altered actions, either for the remainder of this project or to be carried out in the future by the GOT.

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FIXED AMOUNT REIMBURSABLE  
DOCUMENTATION  
(US \$)  
Average Student Cost per Academic Term

	<u>1.</u> <u>Tuition</u>	<u>2.</u> <u>Books/Ed. Mat.</u>	<u>3.</u> <u>Monthly Allowance</u>	<u>4.</u> <u>Misc. Medical</u>
1.				
2.				
3.				
4.				
.				
.				
.				
493				
TOTAL	_____	_____	_____	_____
AVERAGE	_____	_____	_____	_____

Sum of Averages of: (Tuition, Books/Ed. Mat., Monthly Allowance, and Miscellaneous Medical Expenses). =  $\frac{\text{Average cost per Student per Term}}{\text{Student per Term}}$

CERTIFICATION STATEMENT

I, \_\_\_\_\_, for the \_\_\_\_\_, do hereby certify that \_\_\_\_\_, enrolled as a candidate for \_\_\_\_\_ degree in \_\_\_\_\_ was a full-time student in good standing for the fall/springs semester (or other academic term) of the 1984/1985 Academic year.

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Director, Scientific Mission for Tunisia  
in Washington, D.C.

Assumptions Upon Which Calculations are Based:

1. Including an estimated one year of English language provided by MHESR in the U.S. for scholarship students:

BS degree requires 5 years  
MS degree requires 3 years  
PhD degree requires 4 years (since GOT PhD candidates have already reported obtained a Master's degree before entering a PhD program)  
For graduate students whose degree has not yet been reported by the GOT, an average requirement of 3.5 years of scholarship support was assumed.

2. In estimating '81 - '83 GOT undergraduate scholarship costs, (prior to USAID undergraduate support) the following data was used:

172 students had already received 2 years of support  
68 students had already received 1 year of support

Estimating 10% annual rate of inflation in scholarship costs, and given the \$ 9,364/year cost of '83 - '84 undergraduate scholarship students, costs were about \$8,428/student in '82-'83, and \$7,585/year in '81 - '82.

Previous GOT scholarship expenditures on graduate students who received AID scholarship support in mid-degree could not be determined from the data at hand, so no estimate was calculated. All graduate degree costs have been estimated on the basis that no graduate scholarship students began his or her degree work prior to the onset of USAID project funding in fall '82.

3. GOT student airfare estimates are based upon the GOT report that annual roundtrip Tunis - U.S. airfares are provided to each student, using the length of program estimates above, and the average rate of \$1,700/trip for roundtrip full fare economy tickets.

Total students funded under the program are as follows (based upon GOT billing data):

Full Degree Students

376 Undergraduates  
21 MS candidates  
45 PhD candidates  
36 Other graduate degree candidates  
(degrees not yet reported)

An additional 8 airfares were included for students who have left the program (graduated or dropped out) according to '82 - '84 billing information:

- 2 graduate students supported for 3 semesters
- 2 graduate students assisted for 2 semesters
- 2 graduate students assisted for 1 semester only

4. Estimates for cost of completion of degrees are based upon length of degree program estimates above, and 10% annual inflation in actual '83 - '84 per student scholarship costs.

a. Included in budget line 5 are the estimated student costs for the '84 - '85 school year as follows:

Undergraduate Scholarships	\$3,872,800
Graduate Scholarships	1,060,800
Student Airfares	<u>812,600</u>

Total Estimated Student Costs \$5,746,200  
Number of Students on Scholarship: 478

Assumes that no scholarship students have graduated or dropped out since spring '84. Assumes \$10,400/graduate student/year, and \$10,300/undergraduate student per year, a 10% increase over actual '83 - '84 average scholarship costs per student.

b. For future planning purposes, the following '85 - '86 school year costs have been estimated for continuing students' costs:

Continuing graduate students	\$1,006,720
Continuing undergraduate students	4,260,080
Roundtrip airfares (all continuing students)	<u>788,800</u>
TOTAL	\$6,055,600

Total Estimated Continuing Students: 464

No projection has been made of the number of new GOT scholarship students who would be sent to the U.S. to begin their degree programs in fall '85. Assumes 14 Master's degree candidates will have graduated in spring '85, and that all other '84 - '85 students will be continuing their degree programs. Also assumes 10% inflation over '84 - '85 estimated per student costs implying \$11,330/undergraduate and \$11,440/graduate student for the year.

The USAID supported share of \$4.8 million for 2 semesters of student costs fall '84 - 2/86 is matched by a GOT contribution of approximately \$1,324,000. The GOT is supporting over 21% of the 12 months' direct student costs, in addition to administrative and identical support for student placement and services.

5. Estimates of GOT administrative and logistic support, and student placement costs, and the average '81 - '84 exchange rate for the Dinar value in dollars, have been retained from Amendment 2, since more detailed estimates were not available from the MHESR project coordinator.

The 75,000 dinars originally budgeted as GOT support costs for U.S. professors in Tunisia have been deleted, since this project component has not been implemented. A lower estimate for the cost of GOT English language training provided predeparture for scholarship students is used, since most graduate students and a little over half the new undergraduate students sent to the U.S. in '84 did not participate in the GOT/USIS summer '84 intensive English course. An LOP budget estimate of cost to the GOT of 48 roundtrip airfares for MHESR and Tunisian faculty visits to the U.S. has been added as support to the AED exchange program.