

X D - AAQ - 653 - A

ISN : 38012

AGRICULTURAL TECHNOLOGY TRANSFER  
AND  
I.N.A.T.  
PROJECTS  
(664-0304 and 664-0316)

Report of Mid-Term Evaluation

Prepared by: Dr. Habib Ketata  
Mr. Mounir Hedri  
Mr. George Armstrong  
Mr. Saïah Mahjoub

December, 1982

## TABLE OF CONTENTS

	<u>Page</u>
ACKNOWLEDGEMENT	
I. SUMMARY	1
II. INTRODUCTION	3
III. NATURE AND METHOD OF EVALUATION	5
1. Type of Evaluation	5
2. Method	6
IV. FINDINGS	10
1. Participants	10
Selection of participants and predeparture arrangements	10
Arrival in the U.S. - Orientation	11
Academic Program	12
General Points	12
M.S. and M.A. Programs	13
Ph.D Program	14
Participants' Conditions of Stay in the U.S.	16
Stipend	16
Complemental Stipend	17
Insurance Coverage	17
Travel to Tunisia	17
Social Environment and Cultural Adaptaion in the U.S.	18
Professional Reintegration	18
In-Service Training Programs	19
Description	19
Evualtion of In-Service Training	20
2. American Research Assistants	20
3. Equipment	21
Bibliographical Documents	21
Scientific Equipment Acquired by the Participants	21
4. Scientific Consultancies	21
5. Reports	22
6. Project Management	22
Contribution and Value of the Project Coordinating Committee	22
Role of Coordinating Director	23
Role of Project Supervisor	24
Role of the Tunisian Project Director	25
Role of A.I.D.	26
Women in the ATT Project	26
Conclusion	27
V. RECOMMENDATIONS	28

## TABLE OF CONTENTS

(continued)

### ANNEXES

- 1 - U.S. Contribution
- 2 - Tunisian Government Contribution
- 3 - List of Consultants
- 4 - List of Short-Term Participants
- 5 - Participants' Status
- 6 - List of Interviewed Participants and Advisors
- 7 - List of Interviewed U.S. University Authorities
- 8 - List of Interviewed Government of Tunisia and  
A.I.D. Officers
- 9 - Plan for Graduate Training Program
- 10 - Potential Evaluation Questions

### ABBREVIATIONS USED IN THE REPORT

A.T.T.	Agriculture Technology Transfer
I.N.A.T.	Institut National Agronomique de Tunisie (National Agronomic Institute of Tunisia)
E.S.H. Chott Meriem	Ecole Supérieure d'Horticulture - Chott Meriem (Horticulture School at Chott Meriem)
I.N.R.A.T.	Institut National de la Recherche Agronomique de Tunisie (National Agronomic Research Institute of Tunisia)
E.N.M.V.	Ecole Nationale de Médecine Vétérinaire (National School of Veterinary Medicine)
E.S.E.P.R.	Ecole Supérieure d'Economie et de Promotion Rurale de Moghrane (School of Economics and Rural Development at Moghrane)
E.S.I.A.	Ecole Supérieure des Industries Alimentaires (Food Technology School)
D.E.R.V.	Direction de l'Enseignement, de la Recherche et de la Vulgarisation (Directorate of Education, Research and Extension)
C.R.G.R.	Centre de Recherche du Génie Rural (Research Center for Rural Engineering)
I.N.R.F.	Institut National de la Recherche Forestière (National Institute of Forestry Research)
I.R.A.	Institut des Régions Arides (Arid Lands Institute)
E.S.A.K.	Ecole Supérieure d'Agriculture du Kef (Agriculture School at Kef)
E.S.I.E.R.	Ecole Supérieure des Ingénieurs et de l'Équipement Rural (School of Agricultural Engineering and Farm Mechanization)
D.A.A.F.	Direction des Affaires Administratives et Financières (Directorate of Administrative and Financial Affairs)
E.S.E.M.	Ecole Supérieure d'Élevage - Mateur (Livestock Production School at Mateur)
C.C.P.	Comité de Coordination du Projet
F.C.C.	(Project Coordinating Committee)
G.P.	Comité du Projet
P.C.	(Project Committee)
O.E.P.	Office de l'Élevage et des Pâturages (Office of Livestock and Pastures)
A.I.D.	Agence Américaine pour le Développement International (Agency for International Development)
U.S.A.I.D.	Mission de l'A.I.D. en Tunisie (A.I.D. Mission to Tunisia)
O.N.O.U.	Office National des Oeuvres Universitaires (National Office for University Students' Administrative Affairs)

## ACKNOWLEDGEMENT

The members of the evaluation team wish to express their gratitude to all the American and Tunisian administrative officials (DERV, DAAF, AID/Washington, lead university project offices, university authorities and MIAC officials) for their invaluable collaboration during the carrying out of the work covered by this report.

They would also like to thank the Tunisian students and their academic advisors, and also His Excellency the Tunisian Ambassador to Washington and his staff for the assistance they have given with regard to the Project for the Transfer of Agricultural Technology.

## I. SUMMARY

This first evaluation of the Agricultural Technology Transfer Project (664-0304) was conducted by a joint USAID/GOT (Ministry of Agriculture DERV) team. The project was initiated in 1979 and should be completed in 1986. Its primary objective is to strengthen existing training, research and extension capabilities in 13 Tunisian institutions. This is being accomplished by: Training 68 Tunisian high level scientists (M.S. and Ph.D) degree training), short-term training and scientific consultations, providing the equipment needed to operate a laboratory (fertilizing and foliar diagnosis) and finally the purchase of scientific materials for INAT and INRAT libraries.

The evaluation team contacted and interviewed most persons directly or indirectly concerned with the project (DERV, DAAF, USAID/Tunis, institutions of assignment, trainers and researchers, participants, U.S. universities, U.S. academic advisors, "MIAC" representatives, etc.).

The results achieved so far are encouraging and make us believe that the initial project objectives will be fully attained. However, a few weak points do exist and are commented upon below.

### 1. Long-Term Training

The academic results obtained by participants are good in general, and even "outstanding" in most cases. The training syllabuses are rich and of a high level.

Some "deviations" in the training programs occurred and could have been averted with a better exchange of informations between the institution of assignment, the project team and the U.S. university department which accepted the participant.

The topics selected for Ph.D theses dealt either with problems directly related to Tunisian economy or with scientific issues that could have an impact on Tunisian agriculture. Numerous factors favor the preparation of some of the Ph.D theses in Tunisia, namely

- Favorable opinion of a large number of U.S. academic advisors;
- Existence of Tunisian academic advisors in several scientific disciplines;

- Willingness of U.S. university authorities to accept Tunisian academic advisors as full members of the board of examiners for the evaluation of theses;
- Availability of a budget to support thesis research work in Tunisia (\$370,000 equivalent).

The number of students scheduled to carry out research work in Tunisia is small (6). It is recommended that a seminar be held in each MIAC affiliated university to activate contacts between Tunisian and U.S. supervising professors. Each seminar should bring together the project coordinator, university authorities, potential Ph.D students and their academic advisors. These seminars would discuss all information needed for the preparation of theses in Tunisia, and, based on such discussions, a final list of candidates would be drawn up and the topics of theses would be selected.

Finally, it should be noted that participants' living conditions in the U.S. are, in most cases, satisfactory (except for a few exceptions) and enable them to pursue their training effectively. Furthermore, the amounts of the scholarships and other grants paid to participants are considered adequate.

## 2. Short-Term Training

Short-term training programs were profitable according to trainees' opinion and reports. However, in some cases, training could have been more efficient if a detailed program were developed, approved by all parties concerned and followed by the beneficiaries. Out of 24 person-months programmed for short-term training, 11 have been utilized.

## 3. Equipment

Although laboratory equipment was delivered in time, the laboratory construction work started only recently, that is one year behind schedule. It is advisable that the concerned authorities (Sous-Direction des Batiments - DAAF) take steps to speed up construction work.

As regards the purchase of library materials, a first shipment of 353 books was already delivered. Steps should be taken to speed up the purchase and delivery of the 2 other book orders.

#### 4. Scientific Consultations

In order to profit from the experience of U.S. university experts, Tunisian training and research institutions called upon nine (9) U.S. consultants to meet specific scientific needs (information, data processing, soil analysis). Oral and written reports have been prepared, and a certain number of recommendations contained therein have been deemed very interesting by GOT. Practical decisions have been taken to implement them. Out of 16 person-months programmed for consultation under the MIAC/MOA contract about 4 have been utilized.

#### 5. U.S. Research Assistants

Finally, it should be noted that, in two cases out of three, the program regarding U.S. research assistants was not implemented as initially planned. The continuation of the implementation of this portion of the program should be discussed during the forthcoming Project Coordinating Committee Meeting.

## II. INTRODUCTION

As a result of the Grant Agreement signed on August 31, 1978, as amended, between the Tunisian and American Governments for the Agricultural Technology Transfer Project the Ministry of Agriculture signed a contract on April 13, 1979 with the Midamerica Agricultural Consortium (MIAC) to carry out this project. Financing of the Agricultural Technology Transfer Project (664-0304) is as follows:

U.S. contribution	\$5,800,000
Tunisian contribution	\$2,493,000 (in dinars)

(For details see annexes 1 and 2).

The Institut National Agronomique de Tunis Faculty Development Project (664-0316)\* was added to the MIAC/Ministry of Agriculture contract on November 23, 1981. The financing is as follows:

---

\*This project, whose goals are identical to those of the Agriculture Technology Transfer Project (664-0304), is for the training of 5 Ph.D students. Two of these students are on PIO/T and the three others have been added on to the MIAC/Ministry of Agriculture contract.

Tunisian contribution	\$ 264,960
U.S. contribution	\$ 380,000

(of which \$200,000 have been added to the MIAC contract for the training of 3 Ph.D students in addition to the 79 scientific students provided for in the Agricultural Technology Transfer Project No. 664-0304).

It appears that at the current rate of expenditure, the American and Tunisian resources available will be adequate.

The Project's objectives are:

1. The training of 79 agricultural scientists (plus another three under the INAT project contracted to MIAC), who are needed for the reinforcement of programs in 13 Tunisian research, teaching and extension institutions. These specialists will be called upon to identify, select and operate technical innovations appropriate to Tunisian agriculture in general, and to small farms in semi-arid zones in particular. This long-term academic training program covers 42 M.S. and 37 Ph.D participants.

2. The organization of short courses for researchers, faculty and directors of Tunisian institutions connected with the project in order to meet special requirements: library, technical training, research management, research and teaching systems development.

3. The organization of scientific consultations necessary for the improvement of research programs is already underway. This will permit the establishment of beneficial links between Tunisian institutions and American universities.

4. The supply of scientific equipment necessary for the setting up of a laboratory at INRAT (analysis of soils and foliar diagnosis) and a support library for the documentation services at INAT and at INRAT.

Participant Training Schedule

Long-term Training (integrated Agriculture Technology Transfer and  
INAT Faculty Development Projects)

	<u>Planned</u>	<u>Actual</u>	<u>Degree or Training completed</u>
Ph.D	30	33 <sup>1/</sup>	1
M.S./M.A.	42	41	12 <sup>2/</sup>
M.S. and Ph.D	0	9	0
<u>Short-Term Training</u>	20 PM	11.5 PM	11.5 PM

1/ This includes 3 participants under INAT Faculty Development Project and one participant to depart in January 1983.

2/ This includes 9 participants who completed their M.S. and were allowed to continue for a Ph.D as identified in the "M.S. and Ph.D" line.

### III. NATURE AND METHOD OF EVALUATION

#### 1. Type of Evaluation

##### References

On one hand, the principle of evaluation appears in Annex 1 of the contract concerning the Agricultural Technology Transfer Project, which stipulates in its paragraph (c) that annual evaluations will be carried out jointly by MIAC, JSAID and the Ministry of Agriculture.

However, the project's coordinating committee decided at a meeting held on April 28, 1981 in Columbia (Missouri) to delay the first evaluation until 1982.

##### Timing

Three years after the beginning of the project, it appears worthwhile to take stock of how the project is functioning. The period chosen for this internal evaluation comes just at the right time because it coincides with the arrival of the last group of participants in the U.S. and the return to Tunisia of the first diploma holders from the group sent in August 1979.

##### Purpose

The evaluation mission proposed to cover, as much as possible, all aspects of the Agricultural Technology Transfer Project:

- Selection of participants for long-term and short-term training;
- Preparation before departure for the U.S., and the role accomplished by the support services (USAID and DERV);
- Orientation of participants towards different American universities;
- Actual stay in the U.S.: studies, university work, etc.
- Preparation of doctoral dissertations;
- Scientific consultations;
- Procurement of commodities: laboratory equipment, books, etc.
- Role played by the coordinating committee, and the overall operation of the project.

Objective study of the different points mentioned above allows for verification of whether the project is conforming to its objectives, and also allows for recommendations to improve its subsequent operation.

## 2. Method

The evaluation process is based on a study of available documents, and interviews with participants, officials at the Ministry of Agriculture, A.I.D. and MIAC, and the American universities which the students attend.

### Documentation

The following documents ~~were supplied to the evaluation team:~~

- Project Paper for Agricultural Technology Transfer, Tunisia, dated September, 1978 (664-0304);
- Project Agreement for the Agricultural Technology Transfer Project, Tunisia, dated August 31, 1978;
- Amendment No. 1 dated September 29, 1978;
- Amendment No. 2 dated December 30, 1980;
- Amendment No. 3 dated June 26, 1981;
- Project Implementation Letters Nos. 1 and 2;
- Agricultural Technology Transfer contract between the Tunisian Government, acting through the Ministry of Agriculture, and MIAC, dated April 13, 1979;
- Amendment No. 1 to the contract, dated November 23, 1979;
- Agricultural Technology Transfer Project Annual Report 1979
- Agricultural Technology Transfer Project Annual Report 1980
- Agricultural Technology Transfer Project Annual Report 1981
- Quarterly MIAC reports from the beginning of the project through September 1982;
- Minutes of the meetings of the Project Coordination Committee;
- University files and exam scores for the participants;
- MIAC bills and accounting documents;
- Letters: MIAC/Ministry; MIAC/Academic Counselors; MIAC/Participants; MIAC/USAID; Ministry of Agriculture/ Ministry of Higher Education and Scientific Research;
- USAID quarterly reports;
- Agricultural Technology Transfer Project, Tunisia: Handbook for Future Students.

A certain number of professors and agricultural research scientists were also contacted:

The questions asked dealt mainly with the following subjects:

- Selection of participants
- Permission to take leave of absence
- Reintegration of the participants in appropriate institutions
- Degree equivalency
- Choice of thesis subjects
- Procurement of commodities
- Construction of the service laboratory for soil, water, and plant tissue analysis
- Research work in Tunisia for Ph.D students
- American research assistants in Tunisia

Interviews with MIAC member university representatives

Apart from the MIAC Coordinating Supervisor in Tunisia, the following representatives of MIAC were interviewed in the U.S.:

- The Executive Director of MIAC
- The Coordinating Director of the Project
- The Director of International Programs and the Assistant Dean in charge of agriculture at the lead university (University of Missouri at Columbia)
- The Director of International Programs at the University of Nebraska, Lincoln
- The Director of International Programs at Kansas State University
- The Dean and Associate Dean in charge of agriculture at Iowa State University
- The Director of International Programs at Iowa State University.

For a more academic point of view, the students' principal advisors were also contacted at the universities which were visited.

The questions asked generally dealt with the following themes (for details see Annex 10):

- Participant's aptitude to speak and write the English language (expression).
- Participant's adaptation to the American teaching system

- Academic performance
- Thesis subject, and relevance to Tunisian agriculture
- Participant's involvement in the research program of the department or laboratory
- Communication between the participants and the Coordinating Director
- Communication between the participant and the academic advisor
- Communication between the academic advisor and the Coordinating Director of the project
- Use of research funds by the participant under the direction of the academic advisor
- Participant's attendance in scientific meetings
- Research work in Tunisia by Ph.D candidates
- Participation by Tunisian co-advisors in graduate committees
- American research assistants in Tunisia
- Project Management

Interviews with participants

The interviews included those participants listed in Annexes 4 and 6:

- 10 short-term participants (in Tunisia)
- 4 participants who have already completed their academic programs and who have returned to Tunisia
- All the students enrolled at each of the following universities:
  - University of Missouri, Columbia, Missouri
  - University of Nebraska, Lincoln, Nebraska
  - Kansas State University, Manhattan, Kansas
  - University of Georgia, Athens, Georgia
  - Iowa State University, Ames, Iowa
  - University of Wisconsin, Madison, Wisconsin

At Columbia, the students were not interviewed individually but were invited for a group meeting with the evaluation team. Although some students did not take part in the meeting, all of them were dealt with either directly or indirectly during meetings with their academic advisors (or both).

The questions asked of the students dealt with the following:

- Selection of students
- Predeparture arrangements
- Intensive English language training program
- Selection of university and of principal advisor
- Communication participant/advisor
- Academic performance
- Participant's motivation to complete the program in the required time
- Thesis subject, relevance to Tunisian conditions
- Research work in Tunisia for Ph.D candidates
- Living conditions (allowance, lodging, insurance)
- Vacation in Tunisia
- Reintegration in the Ministry of Agriculture at the end of the studies
- Usefulness of short-term training.

Interviews in Tunisia were held by Messrs. Hedri and Ketata for the Ministry of Agriculture and Mr. Mahjoub for USAID. Mr. George Armstrong, AID/Washington representative, joined the team in the United States. The four members of the team together visited three universities

- University of Missouri, Columbia, Missouri
- University of Nebraska, Lincoln, Nebraska
- Kansas State University, Manhattan, Kansas.

The team then split up into two:

Group 1 (Armstrong and Ketata) visited Iowa State University at Ames, Iowa and the University of Wisconsin at Madison, Wisconsin.

Group 2 (Hedri and Mahjoub) visited the University of Georgia at Athens, Georgia, and the University of Florida at Gainesville, Florida.

The evaluation covered seven universities and a total of 53 participants. Although not exhaustive, this sample is wide enough to give a true and representative view of the participant program. After visiting these universities, the four team members met and spent four days in Washington (11-15 October) to discuss the results and prepare the outline of their report. During this week, the team met the Tunisian Ambassador to the United States. The purpose

of the visit was to obtain more information pertaining to the participants.

## V. FINDINGS

### 1. Participants

#### Selection of participants and predeparture arrangement:

Following communication by the DERV of a note to all the departments and agencies under the Ministry of Agriculture announcing the existence of a program of academic training, the process of gaining access to graduate training begins with the participant's application for a position in a specific agricultural field. The candidate submits his or her request, accompanied by supporting documents concerning academic performance and, if appropriate, professional experience and leave approval from his supervisor. On the basis of these documents, the selection is made by the Project Committee (PC), composed of the directors of Tunisian agricultural institutions, the DERV representatives, and the project's local director. The selection process is designed to give a fair chance to all candidates. According to members of the Project Committee, selection is not an easy task because the number of candidates is generally higher than the number of positions available. Altogether, 71 candidates were chosen for graduate training, and with only one exception they have all left Tunisia for the United States. The last candidate will leave Tunisia for the U.S. in January 1983, as soon as he completes his M.S. It should, however, be noted that 3 students who are on the INAT Faculty Development Project were added later, making a total of 74 participants (of which 73 have already left for the U.S.) covered by the MIAC contract falling within this evaluation. If a selected candidate is not proficient in the English language, he or she may take an intensive English language course in Tunis at the end of which he or she must pass the TOEFL exam with a score of not less than 450.

The authorization to leave the country which is granted by the Ministry of Defense sometimes takes a rather long time to obtain. Two participants had to delay their departure by several days.

The airline ticket is provided to the candidate by the Ministry of Agriculture. The local director, in collaboration with the DERV personnel (project chief, etc.) plans the trip and informs MIAC of the participant's arrival date and time in the U.S. No complaints have been received from the participants concerning this phase of the program.

Arrival in the U.S. - Orientation

Policies and procedures for admission to U.S. universities within the framework of the Agricultural Technology Transfer Project are laid out in detail in the Manual for "Future Participants". This manual is a useful tool for a participant's orientation and is provided to all the participants. The evaluation team believes this document should be supplied to potential Tunisian advisors of Agricultural Technology Transfer Project participants doing research in Tunisia.

As soon as the participant arrives in the U.S., he travels to the University of Missouri in Columbia, where first of all he meets the Coordinating Director who supplies additional information pertaining to his stipend allowance, housing and academic program. The main issue at this stage is the level of mastery of English which has been achieved. Although the minimum condition required before leaving Tunisia is a 450 score in the TOEFL exam, we learned at Columbia that certain students had left Tunisia with a score of 400, if not less. Since all universities require a mark of 500 or more in the TOEFL exam, most participants had to take intensive English study courses. The University of Missouri offers an intensive English study program in direct collaboration with the International Program Center, which has highly qualified personnel and well equipped laboratories. In an ordinary intensive English study program, a participant takes 25 hours English per week (being five hours a day for a semester - i.e. 16 weeks). The English classes currently include 10 participants, of which nine are registered at the University of Missouri and one at the University of Texas A&M. A certain number of participants would like to take English classes in the same institution as that in which they do their other studies. But the majority of the participants had no objection to taking intensive English classes at the University of Missouri. In any event, all the participants interviewed were satisfied with the English program at the University of Missouri.

Examination of training programs for all the 73 participants in the U.S. revealed that 44 (including the last group that arrived in the fall of 1982) took a semester of intensive English, 12 took two semesters, four took one year, and 13 did not need to take intensive English classes. These last 13 were holders of degrees from American universities or had obtained good scores in the TOEFL exam.

During the first month after arrival in the U.S., each participant receives a daily allowance of \$50, then the amount of this allocation falls to \$850 per month for the rest of the duration of the intensive English course. It should be noted that the participants in the English courses have had no complaints about lodging or other expenses.

#### Academic Program

##### General Points

At the end of the English courses, each participant is linked up with a specific department in a given university. The choice of university and of academic advisor is made by the Project's Coordinating Director in collaboration with other MIAC representatives. Criteria for the choice of university take into account the following:

- the participant's major field
- the existence in the chosen university of a strong program in this field
- participant's undergraduate and/or graduate performance
- advisor's agreement to accept the participant.

However, priority was generally given to MIAC universities. If, within the MIAC universities, there is no program which would meet the participant's major, MIAC then tries to find other appropriate universities.

In general, with the exception of very few cases, the placing of the participants has been satisfactory. The Agricultural Technology Transfer Project calls for a total of 79 either Ph.D or M.S. degree persons. Two Ph.D candidates, M.H. Abdelghani and T. Chattaoui, did not finish their studies. Abdelghani had to leave for family reasons while he was taking intensive English classes, whilst Chattaoui left the university and disappeared 10 months after the start of his graduate studies, apparently without special reason. These two positions have been counted as "one Ph.D", i.e. one Ph.D slot already used. Existing slots are occupied as follows:

39 M.S.

2 M.A.

36 Ph.D plus one Ph.D due to leave for the U.S. in  
January 1983.

This makes a total of 79. If the three Ph.D candidates who are part of the INAT Project (664-0316) are added, the total is then 81.

It should be noted that 9 of the participants who initially were to study for a M.S. have been authorized to continue their studies up to Ph.D and hence the total number of participants who have or will benefit from a complete training program will be 69, if we exclude the two students who broke off their studies and the three participants who are part of the INAT project.

#### M.S. and M.A. Programs

The programs cover 39 M.S. candidates and 2 M.A. candidates. Six participants have already finished the M.S. program, of which three have returned to their institutions in Tunisia to work whilst the others are continuing Ph.D. studies. Academic achievements of those M.S. candidates questioned are generally good or acceptable. Most marks were either A or B grades. A few participants have gained one or two C grades in their university marks.

According to the principal advisors, certain participants are interested and participate in laboratory or research work whilst others devote themselves to their own research work and course work.

The subjects of the theses are linked either directly to Tunisian agriculture (four cases, three in agricultural economics and one in forestry), through analysis of data obtained in Tunisia or on Tunisian material, or indirectly through studies related to general scientific methods in agricultural research.

The time required to complete the M.S. program, including the intensive English training, has varied between 26 and 36 months for the six students who have already completed their program. This is an average of 32 months, less than the 33 1/2 months average which had been estimated.

All the participants who were interviewed indicated that within the structure of their training program, they had or were going to participate in conferences and professional and scientific seminars directly involved with their respective major fields of study. It should be noted that a certain number of M.S. candidates gathered data for their theses during their 1981 and 1982 summer vacation in Tunisia.

Certain Tunisian officials said they feared some participants would change their field of specialization (e.g. Marouani). This is generally due to lack of precision in Tunisian documentation concerning the program of the participant in question. This lack of precision has left open the possibility for

participants to deviate willingly for a particular reason or personal desire. This needs to be avoided through a closer follow up by MIAC to insure participants continue in agreed fields of study.

#### Ph.D Program

This program concerns 37 participants. As mentioned above, nine of the participants who were initially on a M.S. program have been authorized to continue their studies up to Ph.D level in their respective fields of specialization. In effect, a large number of students have stated their desire to continue their studies up to Ph.D level. Only nine have been authorized to do so because of fund limitations.

Selection done by the Project Committee, presided over by the DERV Director in liaison with the Coordinating Director is based on the following criteria:

1. Participant's request
2. Academic records
3. Recommendation of the principal academic advisor
4. Priority needs of Tunisian institutions
5. Completion of M.S. program no later than  
December 1982
6. Social behavior and attitude

Certain participants complained because, according to them, they were not informed of this procedure sufficiently in advance.

The Coordinating Director informed us, however, that a description of this procedure had been sent to all the principal advisors in the different universities in plenty of time.

Yet other participants were authorized by the Project Committee to continue their Ph.D studies despite opposition from the directors of their institution in Tunisia. These had expressed their opposition because of an urgent need for researchers and professors. The academic advisors whom the evaluation team met in the visited universities indicated that they regularly receive information from the lead university (University of Missouri at Columbia) on the project's policies and also on the participants.

Only one participant (Med Bouslama) has already finished his Ph.D program and is now at ESAK at Le Kef, where he is a researcher/professor. This participant's Ph.D program lasted three years.

For others, it could be longer and in some rare cases take longer than the average 52 months estimated in the project. It does seem, however, that this length of time is sufficient in the majority of cases.

Academic performances are generally good, although some exceptions exist, particularly in Agricultural Engineering, where a lack of experience in design has been noted by the professors.

#### Integration in the Laboratories

Apart from the courses taken, certain participants take an active role within the department to which they are assigned (teaching, research on a particular subject). In general, Ph.D candidates are more motivated in this than M.S. students. However, certain participants are more independent and spend their time solely on their own course work and thesis. The integration of a participant into the work program of the laboratory to which he is assigned is of major importance in the training of a participant. It is obvious that by being a part of the work staff of a laboratory, the participant will profit more from his stay in the U.S. than if he was just merely a student.

According to the results of this evaluation, certain participants (unfortunately a too limited number) have been well integrated in their respective departments and have gained the confidence and admiration of their academic advisors. These participants must serve as an example to those other participants who just want to follow their own study program.

In the majority of these cases, the academic advisors have indicated that they are aware of the funds available to the participants to support their education and research work (a total of \$1500 per year per participant), and have begun to use them for the acquisition of equipment (\$1000/year), and student participation in scientific meetings and seminars (\$500/year). It does seem, however, that the question of ownership of equipment procured

for that purpose is not always very clear to the academic advisors.

### Thesis Preparation

The work on the thesis is of major importance in the Ph.D program and this leads us to make the following remarks:

a) The thesis subjects already selected deal either with questions directly linked to agricultural economy in Tunisia, or to scientific matters which could be of interest to Tunisian agriculture.

b) Possible deviation from the planned subject is more likely at Ph.D level than at M.S. level. The risk of deviation exists with those students whose thesis subject was only vaguely defined (principally because of lack of precision in the translation or interpretation of technical terms).

c) Certain participants should be encouraged to do research work in Tunisia. Several factors are in favor of this option:

- Favorable opinion of a large number of American academic advisors.
- Existence of Tunisian academic co-advisors in several scientific fields.

- Agreement of American university authorities to accept Tunisian co-advisors as full members of graduate committees.

- Existence of a budget to support thesis preparation work in Tunisia (equal to \$370,000).

However, an obstacle to this is caused by lack of contact between American advisors and potential Tunisian co-advisors. Better circulation of information, particularly among the latter, would remove this stumbling block. Apart from the purely academic side, the co-direction and guidance of the participants will contribute to the establishment of long-lasting relationships between American and Tunisian institutions.

### Participants' Conditions of Stay in the U.S.

#### Stipend

The candidate's stipend varies from one university to another, according to rates set by AID. These are adjusted periodically in accordance with the cost of living in each state. From an average amount of \$440 per month at the beginning of the project (second quarter of 1979) the monthly rate is now about \$570 (second quarter of 1982). Analysis of information gathered from fifty participants spread out between the seven universities visited leads to

the conclusion that the amount of the stipend is sufficient to cover expenses normally incurred while in academic training. However, some particular cases should be noted, and these concern married participants with children. For these participants, the stipend is insufficient. Most of them have been able to get over this difficulty thanks to additional resources earned by their wives who work on the university campus

#### Complemental Stipend

From January to July 1981, a complemental stipend equal to 20 TD per month was granted to students by the National Office for University Students Administrative Affairs (ONOU). In 1982, it was decided to suspend this complemental stipend because of financial problems. This caused discontent among all the ATT participants.

#### Other Allowances

Besides the stipend, various allowances are available to participants to cover costs directly linked to their studies and research work. These are mainly:

- \$35 per month book allowance
- \$500 per year for attending scientific seminars
- \$1000 per year for procurement of specific equipment needed for carrying out research work
- \$900 to 1600 for editing and printing of reports, papers and theses.

On the whole, those students interviewed considered that the respective amounts of the allowances mentioned above are sufficient. For their part, the academic counselors who were contacted were pleased of the availability of an allowance to support participants' research work. They think the granting of this allowance would have a catalytic effect.

#### Insurance Coverage

The participant's affiliation to the A.I.D. insurance system is automatic but only covers the participant. His dependents are excluded. This causes difficulties, due to the absence of provision for those dependents accompanying the insured person.

#### Travel to Tunisia

Several participants benefitted from a round trip airline ticket to enable them to spend their vacation in Tunisia in the summer of 1981. This was granted by the National Office for University Students Administrative Affairs with a promise to repeat it annually. However, in 1982, and because of

budget reductions it was decided to grant a ticket only once every two years. This has caused discontent among several of the participants who were contacted. Following a discussion between the evaluation team and an official from the Tunisian Scientific and Cultural Mission in the USA, the evaluation team learned that grant students sent by the Ministry of Higher Education and Scientific Research (MHESR) will, starting in the 1982/83 academic year, benefit from a trip once every two years only. The ATT project participants are concerned by this measure just as much as the MHESR participants. Nevertheless, as far as graduate students aiming at doctoral degrees are concerned, it would be worthwhile for them to make the most of the slower rate of activity in American universities during the summer months in order to advance in their studies (bibliography, summer courses) or do research work. Thus a trip once every two years appears justified.

#### Social Environment and Cultural Adaptation in the U.S.

The first months of the stay have been rather tough for the majority of the participants, due to the sharp change in the way of life, type of teaching system, etc. This social and cultural shock is due to the absence of information and lack of preparation prior to the departure from Tunisia, particularly on questions such as the education system, university life, American civilization, and the American way of life. However, efforts made by the project team based at the lead university towards providing the social and cultural set-up necessary for the participants have helped remove certain apprehensions and facilitated adaptation to the American way of life. It should be noted that certain academic advisors have made a real contribution towards this. Finally, the evaluation team notes the important role which sport plays in student life at those universities which were visited.

#### Professional Reintegration

The return of the participants to Tunisia after they have obtained their diplomas, and their subsequent professional reintegration poses serious problems - mostly due to red tape which delays the regularization of their situation. These administrative difficulties can be overcome and the amount of lost time can be reduced if the following precautions are taken:

- Advance planning of the return of the different groups
- Preparation of dossiers, including all necessary elements, in order to accelerate the degree equivalency process.

It should be pointed out that the equivalency of American and Tunisian degrees no longer poses a problem. The final difficulty has now been resolved - it concerned the M.A. degree granted to participants specializing in library science.

On this subject, the equivalency of the M.A. with that of the specialized engineer's diploma has been obtained, thanks to efforts made by local project officials. This permits future degree holders to obtain the grade of "Ingénieur Principal" in the Tunisian Civil Service.

Finally, the evaluation team wishes to draw the attention of the Tunisian authorities to the thorny problem of those future Ph.D's destined to work in research institutes (INRAT, INRF, CRGR). These institutes still do not have specific by-laws governing scientific personnel that recognize and compensate people for obtaining a Ph.D and working at that level.

The team believes that the absence of adequate promotion and career prospects in agricultural research institutions will incite future Ph.D's not to reintegrate into the institutes to which they were originally assigned but to look for employment other than in the field of agricultural research. For the M.S. and Ph.D graduates assigned to agricultural education institutions their assignments present less problems for the moment because promotion and career prospects are better. All participants however were notified of their assignments well before their departure.

#### In-Service Training Programs

##### Description

First of all, in-service training should be divided into two categories:

- Information and exchange programs
- In-service technical training programs

On this subject, the project contract calls for 24 months of short-term training designed for Tunisian staff for information visits and training in specific fields in American universities. From project inception to date (1979-1982), 10 participants took short-term training in the following fields:

- library service
- soil analysis
- agricultural economics

- rural education
- cereal technology
- rural engineering
- administration and university systems

The duration of each program depends upon the type of training, varying between 3 and 8 weeks. To date, 47 weeks of short-term training were used which is a little less than half of the total amount planned.

#### Evaluation of In-Service Training

a) Information and exchange visits have provided a valuable opportunity for the institutions' directors (INAT, ESH Chott Meriem) and faculty to learn about the many parts of the American university system: organization, how it functions, curricula content, methodology, means used, university life, satellite activities

The participant programs were designed so that they would have a good idea about a system not well known in Tunisia. Written and verbal reports made by the participants have underlined the advantages gained from the visits to American universities. In addition, these programs have allowed the initiation of links between Tunisian and American faculty which could favor the establishment of relations between scientific departments. This in turn could, if well planned, have favorable repercussions on their respective scientific activities.

b) In-service technical training programs: Apart from one particular case, most of the participants in these programs are pleased with the courses attended, and consider that their stay in American universities and the contacts made have been extremely profitable from both a personal and professional point of view. Nevertheless these courses would have been more successful if a detailed program had been planned and agreed upon by all the parties concerned and followed by the participants.

#### 2. American Research Assistants

The program set in the project document, as amended, calls for four Ph.D research work programs to be carried out in Tunisia jointly by American and Tunisian students in a binomial form. Up to now, the implementation of this part of the project has concerned three theses but, in two out of the three cases, has not worked out as planned. It should be added that the allowance budgeted to cover the financing of these theses amounts to about \$7500 for each American student, all costs included. However, the three cases mentioned above benefitted from a travel allowance over and above this.

### 3. Equipment

Scientific material for the equipping of the soil and plant tissue analysis laboratory at INRAT had been completely delivered by the beginning of 1982. However, putting it into operation has not been possible because of the delay in construction of the laboratory building. Some of the equipment which has been delivered is sophisticated and requires delicate handling. It is to be hoped that the completion of the construction work will not be delayed further, so that this scientific equipment can be put to good use.

#### Bibliographical documents

The budget allocated to the ATT project includes \$100,000 for the purchase of books to reinforce the INAT and INRAT libraries. Out of three lists of titles, only one containing 353 titles has been purchased, and the books arrived in July 1982. An Invitation for Bids has been issued for the two others.

#### Scientific equipment acquired by the participants

In order for research work to run smoothly, and in order to warrant normal progress, each of the participants benefits from an equipment allowance of \$1000 per year. Equipment acquired which is of a durable nature, such as computer material and audio-visual material, will be sent to Tunisia when the study program is finished, and will then become the property of the institution to which the returned participant is assigned.

### 4. Scientific Consultancies

Nine consultancies have been conducted since the beginning of the project. They were organized at the request of the DERV and the Tunisian teaching and research institutions who wished to profit from the experience of American university faculty and scientists. These consultancies covered the following fields:

- Management
- Agricultural documentation
- Agronomy
- Soil Analysis
- Agricultural machinery
- Soil and water conservation
- Computer science

The total time used by them is 17 weeks (4 person-months). Verbal and written reports were made following these consultancies and the recommendations contained therein attracted a great deal of interest from the Tunisian authorities. A number of practical decisions have been made to implement some of these recommendations.

5. Reports

Section 2.09 of the MIAC/Ministry of Agriculture contract stipulates among other things "that the contractor should submit quarterly reports to the Ministry on the project's progress, and should also submit annual reports. Each report should include a narrative and statistical summary of the project's achievements during the period covered by the report, and also a comparison with the project's stated objectives. The report should also identify existing or potential problems and those steps which should be taken by the parties concerned." The evaluation team noted that the reports mentioned above have been prepared and conform to requirements. They have been submitted regularly in both English and French.

6. Project Management

Contribution and Value of the Project Coordinating Committee

The Project Coordinating Committee (PCC) provided for in Section B (iii) of Annex I of the MIAC/Ministry of Agriculture (MOA) contract, consists of the Coordinating Supervisor or other MIAC representative, a USAID representative, and representatives of DERV as selected by the Ministry. The PCC meets quarterly or at intervening times if needed and is assigned responsibility to review and appraise progress and formulate on-going plans. One major function is the selection and processing of participants.

In accordance with the above, the PCC met 8 times since the signing of the MIAC/MOA contract (13 April 1979) as follows:

October 1979	In Tunisia
February 1980	In Tunisia
July 1980	In Tunisia
November 1980	In Tunisia
April 1981	In U.S.
November 1981	In Tunisia
April 1982	In Tunisia
November 1982	In Tunisia

It is the opinion of the evaluation team that the PCC has been an excellent forum for resolving issues and establishing policy. Without it, overall project strategy and direction would have been less than clear. Decisions taken by the PCC have enabled the project to move more rapidly than would have been possible otherwise. Meetings have always been enhanced by the open, sincere and face to face discussions that have facilitated communications between all persons concerned with the project.

Role of Coordinating Director

Quote from page (iii) of the Project Work Plan contained in MLAC/MOA contract: "Will be responsible for the overall administrative management and coordination of the participants' programs in the U.S. universities. He will be responsible for

- (i) maintaining contact with the Tunisia based Coordinating Supervisor, the U.S. Universities' Faculty Advisors, and other U.S. University Faculty and University authorities involved in the training of project participants;
- (ii) arranging for receipt and processing of participants' bio-data, transcripts and proposed training programs, for language training, university assignment, and for other participant administrative matters;
- (iii) coordinating the selection and assignment of faculty advisors, and monitoring participant attendance at seminars, workshops, field visits, etc.;
- (iv) coordinating participant out-processing to return to Tunisia for research, and the procurement of research material and equipment;
- (v) maintaining his office as a contact point for all participant affairs, both in the U.S. and Tunisia;
- (vi) coordinating the procurement and shipment of commodities to strengthen the library system and equip the soil testing laboratory;
- (vii) assisting in maintaining the intended relationship between participant and major professor;
- (viii) scheduling visits of faculty advisors, consultants and other officials involved in execution and management of the project; and
- (ix) assisting in the selection of the four U.S. research assistants and their placement in Tunisia. He will work closely with the Coordinating Supervisor in this task."

27

The Evaluation Team recognizes that the Coordinating Director has been fulfilling the above functions, some of which are very delicate, in an outstanding fashion. However, sometimes he interpreted certain aspects of the operation to the benefit of the participants. He has been doing his best to get the ATT participants enrolled in the best qualified U.S. universities (within and outside the MIAC) where the major field of specialization planned for each participant is best provided. His long international experience in senior management positions and his background as a faculty member of the University of Missouri, Columbia seem to have helped him in successfully carrying out his duties. He has always been sensitive and responsive to concerns of the Government of Tunisia and USAID. Most of the participants interviewed consider him almost like a father ready to help them in all the problems they face, especially upon their arrival in the U.S. to pursue their graduate studies. His high human values made him an exceptional person without whom, the Evaluation Team feels, the project success recorded to date would not have been achieved as rapidly. It should also be noted that the two administrative assistants working in the Project Coordinating Director's office are equally devoted to the project and are deserving of praise for their excellent performance.

The Evaluation Team has learned that the present Project Coordinating Director will be retiring at the end of December 1982 and assumes that he will be replaced by an equally competent person.

#### Role of Project Supervisor

Quote from page (iv) of the Project Work Plan contained in MIAC/MOA contract:

"(1) Assisting in the selection and processing of the M.S. and Ph.D candidates and the short term trainees for U.S. training, (2) preparing a recommended training plan for each participant...., (3) assisting the U.S. faculty advisor in the development and implementation of the research thesis work plans of the Ph.D participant conducting research in Tunisia and arranging for visits of faculty advisors/consultants and other consultants, (4) coordinating the selection, procurement and installation of soil testing lab equipment and the books...., (5) maintaining his office as a point of contact for all project activities to be carried out under this project in Tunisia."

37

The Evaluation Team is of the opinion that the project supervisor has been fulfilling the above functions in an outstanding fashion and has been sensitive and responsive to concerns of the Government of Tunisia and USAID in this project. His responsiveness to the needs of the directors, faculty and participants of the various institutes has been, in our opinion, professional and very helpful.

Further, the team has observed that the coordinating supervisor's office:

- (1) serves as a counseling center for others interested in learning about the U.S. land-grant system and for potential students in U.S. universities;
- (2) helped in arranging the Intensive English training;
- (3) serves as a "follow-up" contact for returned participants;
- (4) has assisted AID/Tunis in conducting special activities related to the goals of this project;
- (5) assisted in procuring Tunisian plant materials and seeds to be utilized by participants in their U.S. based research activities;
- (6) assists in procuring equipment to be used by participants in Tunisia to conduct their research;
- (7) serves as source of contact for other U.S. contractors working on other DERV/AID projects.

#### Role of the Tunisian Project Director

The Evaluation Team interviewed the Tunisian Project Director, the Project Supervisor, the Director of DERV, the Coordinating Director, the Director of INAT, the Director of INRAT, the Director of DAF as well as many other persons related directly or indirectly to the ATT Project both in Tunisia and in the U.S. As the Evaluation Team perceived it, the role of the Tunisian Project Director is as follows:

1. Responsible for selecting candidates and processing dossiers until December 1980 when the project supervisor joined the project.
2. Assists the project supervisor in all aspects of his assignment as outlined in paragraph 2. (b), page (iv) of the work plan.
3. Assists the supervisor in developing program of intensive English language training in Tunisia.
4. Assists the mid-term evaluation team in gathering data and materials for the evaluation exercise.
5. Secures administrative and military clearances for all participants.

6. Takes leadership in administrative reintegration of returning participants.
7. Assists project supervisor in (1) preparing "working papers" for project coordinating committee, (2) processing soil and plant tissue laboratory equipment and library book orders as well as equipment orders for those participants who plan to conduct their research in Tunisia, (3) preparing the quarterly and annual reports, and (4) preparing minutes of the Project Coordinating Committee Meetings.
8. Assists project supervisor in developing and implementing visits of consultants and advisors.
9. Prepares and dispatches official DERV correspondence related to the project.

The Evaluation Team is of the opinion that the Tunisian Project Director is capable, competent, knowledgeable and enthusiastic with a real commitment to the project purpose. Her one-month training program in the U.S. in 1981 to observe and study the land-grant university system and the relationship between teaching, research and extension has no doubt contributed to her effectiveness in the ATT project implementation to date. There have been period when other responsibilities she has within the DERV conflicted with the time she could devote to the ATT Project.

#### Role of A.I.D.

In the operation of this project USAID officers have played a very important role in monitoring and backstopping the many activities of the project and have formed a cooperative and effective partnership with MOA officials. A.I.D. fulfilled its role as a monitor of the project. Their comments, observations and explanations at the numerous committee meetings (as evidenced in the minutes of such meetings) were very helpful and constructive. It appears that DERV, A.I.D. and MIAC officers were always deeply concerned with the direction and rate of progress of the project and worked well together to achieve project overall objectives.

#### Women in the ATT Project

Four female academic participants and two short term female participants were selected for training in the U.S.

When the training program was advertized by DERV there was a noted limitation of well qualified female applicants. All female applicants not selected were rejected strictly on the grounds of poor academic records. A well qualified

woman was appointed by the MOA as the Tunisian Project Director, and she also served on the participant selection committee. Two of the three graduate students who participated in the project were women.

#### Conclusion

The ATT Project officers in Tunisia (including the Coordinating Supervisor and the Tunisian Project Director) have been working as an effective team, keeping on top of important issues in spite of inadequate clerical assistance.

The project office has initiated work on detailed plans for the reintegration of all participants when they return to Tunisia. This task includes the development of programs for those who will return to do their research in Tunisia.

The Evaluation Team recognizes the importance of continuous contacts between the Project Office and the teaching and research institutions. It appears that these contacts have been helpful and mutually supportive and are recognized as important to the long range impact of the project.

The project office serves a staff function in identifying issues and problems, developing operational recommendations and presents these to the Director of DERV for his consideration. It is the perception of the Evaluation Team that the Director of DERV has a real commitment to the project objectives and has been responsive to project issues and most supportive to the project as a whole. As to the ATT Project, the Director of DERV represents the MOA and as such chairs the Project Coordinating Committee.

Working closely with AID and MIAC officers, as evidenced in project documentation, he has strived to solve all problems pertaining to the various aspects of the Project.

## V. RECOMMENDATIONS

### 1. Orientation of the Final Group of Participants

- Require immediately that each institution concerned by one or more individuals of the final group of participants supplies a detailed data sheet describing the desired qualifications in order to best orient the concerned participants;

- Request that the project team based at the lead university ensures regular follow-up of the participants in order to avoid changeover of program during the course of studies.

### 2. Content of The Courses

- Require that individual participants each supply the institution to which they will be assigned with the following information:

- list of courses taken
- list of courses not yet taken, but scheduled
- an outline of the research subject and research work status.

On the basis of this information, require the directors of the various institutions give a reply based on a scientific point of view, so that the participants may be oriented as well as is possible. On this point, the establishment of direct relations between the participant and the laboratory to which he is assigned is desirable, in particular for Ph.D candidates. These subjects for the latter should, in all cases, be chosen jointly by the American and Tunisian scientific departments concerned.

### 3. Conduct of Doctoral Theses in Tunisia

- Have the project team based at DNERV survey the real possibilities for the conduct of doctoral theses in Tunisia as soon as possible, e.g. existence of potential academic advisors by specific fields, and their availability;

- Inform the project team based at the lead university of the results of this survey, with the object of organizing a seminar in each university which has participants who have not yet begun their research work.

### 4. Integration in the Laboratory

Given the fact that a participant's integration in a laboratory depends on his own desire to do so, certain guidance could be helpful if given in time (e.g. in the participants handbook). In addition, in order to facilitate such

integration, the professor/academic advisor should be informed that the participant can be considered as an assistant in whom he can confide work and not just a grantee who feels independent from his advisor. That would make laboratory integration an integral part of the participant's training program.

5. In-Service Training

Given the important number of in-service training months still available, a program should be worked out and developed which would be respected by all the parties concerned; the trainee's institution, the American institution organizing the training, and the participant himself. These steps would remove any problems which could endanger the success of in-service training programs.

6. Establishment of Links between American and Tunisian Universities

One of the goals of the ATT project is the establishment of links between American and Tunisian institutions. The present results concerning, in particular, consultancies, exchange of professors, and co-advisorship of students permit a certain amount of optimism. Nevertheless, in order that the links which are established may be durable, a continuing source of finance, which can be counted upon once the project is completed, must be available. This source could come from the institution's own resources allocated to exchange programs for professors, in-service training programs, sabbatical leave, etc.

7. Professional Reintegration

- Put an end to the rupture between participants and the respective institutions where they will be assigned upon completing their degree by setting up regular communication between the participant and the scientific department to which he is assigned once he has returned;

- Speed up the promulgation of by-laws for researchers, this being an essential condition for the respect of the participant's assignment clauses and the unique motivation for strengthening research institutions;

- Permit participants to be paid a salary based on their original grade, while awaiting the regularization of the situation.

ANNEX 1

## AGRICULTURE TECHNOLOGY TRANSFER PROJECT

## U.S. CONTRIBUTION (Dollars)

<u>Cost Category</u>	<u>Budget</u>	<u>Spent thru 7/31/82</u>
A. Personnel		
Home Office	281,000	121,601.35
Overseas	225,000	33,413.31
Employee Benefits	92,000	17,945.18
B. Allowances	100,000	31,368.75
C. Travel and Transportation	279,000	96,055.48
D. Participants	3,572,103	1,398,625.37
E. Commodities	306,000	89,910.36
F. Direct Costs	200,000	131,330.43
G. Indirect Costs	694,000	263,663.05
	<hr/>	<hr/>
TOTALS	\$5,749,959	\$2,183,913.28

ANNEX 2

TUNISIAN GOVERNMENT CONTRIBUTION  
(expressed in 000 Dollars)

<u>Cost Category</u>	<u>Budget</u>	<u>Estimated Expenditures thru 6/30/82</u>
1. Office Personnel		
Counterpart	55	25
Secretary	47	10
Drivers	23	1.2
Other project personnel	39	22
2. Office space		
Coordinating supervisor	5.5	2
Counterpart	5.5	3
Secretary	10	3.2
3. Office furniture	9	6
4. Office equipment and supplies	5	2
5. Vehicles		
- for the coordinating supervisor	58	0
- in-country transportation (consulting professors, advisors, participants)	17	1
- fuel maintenance	34	1.5
6. Participant support		
- Travel to the US	382	118
- Other benefits for participants	765	231
- Research support in Tunisia (participants)	371	0
- English language training	22	10
7. Other		
- Support for research assistants	50	0.4
- International travel for Tunisian officials, professors and graduate committee members	71	17
- Buildings (laboratory)	220	150
- Stipend complement	38	14.7
	<u>2.227.0</u>	<u>14.7</u>
plus 12 % inflation	206.0	

14

ANNEX 3

AGRICULTURAL TECHNOLOGY TRANSFER PROJECT

LIST OF CONSULTANTS

1980 - 1982

<u>1980</u>	<u>Name</u>	<u>Field of Specialization</u>	<u>Weeks In Tunisia</u>
1.	WARREN FRAWL	Agricultural Administration	2
2.	WAYNE COLLINGS	Agricultural Documentation	2
3.	J. MILTON POEHLMAN	Agronomy/ Agricultural Documentation	2
4.	ROBERT ISAAC	SOIL TESTING/ Analysis	2
			Sub - Total = 8
<u>1981</u>			
1.	WAYNE COLLINGS	Agricultural Docume	1
			Sub- Total = 1
<u>1982</u>			
1.	WILLIAM JOHNSON	Agricultural Machinery	2
2.	JAMES GREGORY	Soil and Water Conservation	2
3.	GARY KRAUSE	Computer utilisation	2
4.	ROBERT ISAAC	Soil Testing / Analysis	2
			Sub-Total = 8
			Total = 17

(15)

AGRICULTURAL TECHNOLOGY TRANSFER PROJECT  
 LIST OF SHORT-TERM PARTICIPANTS  
 WHO HAVE VISITED THE U.S.A.  
1981 AND 1982

<u>1981</u>	<u>NAME</u>	<u>Institution</u>	<u>Field of Specialisation</u>	<u>Weeks of Training</u>
1.	HADEF HEFAIDH	INRAT	Documentation	8
2.	RIABI SOUAD (Mlle)	INRAT	SOIL Analysis /Testing	6
3.	MOHAMED DAEMAN	INRF	Forest Produc.Utili ation	6
4.	HASSIBA CHEBEANE(Mme)	DERV	Agricultural Education	4

Weeks-Sub Total = 24

1982

1.	AEDERESMAN JARRAYA	INAT	Agricultural Administration	3
2 <sup>3</sup>	SALEM LAOUAR	ESH	Agricultural Administration	3
3.	NOUREDDINE ENKABLI	INAT	Agricultural Engineering	4
4.	ALI BEN ZAID SALMI	INAT	Agricultural Economics	4
5.	MONCEF BEN SAID	INAT	Agricultural Economics	4
6.	MONCEF BEN SALEM	INRAT	Cereal Technology	4

Weeks-Sub Total = 22

Total = 10 participants

Total weeks = 46

(or 11.5 months)

46

## LIST OF INTERVIEWED PARTICIPANTS AND ADVISORS

<u>Participant</u>	<u>Degree</u>	<u>Advisor</u>	<u>University</u>
Belhassen ABDELKAFI	Ph.D	Dr. Mel Blase	University of Missouri
Abdelhamid ABDOULI	M.S./Ph.D	Dr. W. Thesenhusen	University of Wisconsin
Hedi ABDOULI	Ph.D	Dr. A. L. Pope	University of Wisconsin
Boujemaa AKREMI	Ph.D	Dr. D. Vogt	University of Missouri
Ali ALOUI	M.S.	Dr. N. Tooker	University of Nebraska
Tahar ALOUI	Ph.D	Dr. J. Blanchar	University of Missouri
Mohamed Ali BEJI	Ph.D	Dr. W. Thompson	University of Missouri
Ameur BEN MANSOURA	M.S./Ph.D	Dr. Fick	Kansas State University
Moncef BEN M'RAD	Ph.D	Dr. J. Stevenson	Kansas State University
Ahmed BEN M'SIR	M.S.	Dr. I. L. Bashford	University of Nebraska
Hamdi BEN SALAH	M.S.	Dr. George Liang	Kansas State University
Mongi BEN YOUNES	M.S.	Dr. P. Bueselinck	University of Missouri
Mohsen BOUBAKER	M.S./Ph.D	Dr. T. D. Sechler	University of Missouri
Mokhtar BOUCHANDIRA	M.S.	Dr. W. Buchele	Iowa State University
Mohamed BOUSLAMA	Ph.D	Dr. W. T. Schapaugh	Kansas State University
Mustapha CHELBI	M.S.	Dr. R. Hussey	University of Georgia
Rachid CHERIF	M.S.	Dr. Preston Hunter	University of Georgia
Ali DALLALI	M.S./Ph.D	Dr. Daniel Millikan	University of Missouri
Said Miloud DHIFALLAH	M.S.	Dr. James Hassler	University of Nebraska
M'Naouar DJEMALI	Ph.D	Dr. Freeman	Iowa State University
Mohamed FRAJ	M.S.	Dr. W.A. Compton	University of Nebraska
Mohamed Habib GHALI	M.S.	Dr. Darrel Watts	University of Nebraska
Amel GHARBI	M.S.	Dr. States McCarter	University of Georgia
Azaiez GHARBI	Ph.D	Dr. Malcolm Summer	University of Georgia
Abdeljelil GHAM	Ph.D	Dr. Hans Minocha	Kansas State University
Nejib GUIZANI	M.S.	Dr. Robert Marshall	University of Missouri
Chedli HAFI	Ph.D	Dr. Larry Larson	University of Nebraska
Salem HANDI	Ph.D	Dr. DeShazer	University of Nebraska
Aida KAABIA	M.A.	Dr. Bert Boyce	University of Missouri
Mohsen KAABIA	M.S.	Dr. Homer Folks (not available)	University of Missouri
Bechir KACEM	Ph.D	Not yet designated	University of Florida
Bechir KHELIFI	M.S.	Dr. Mel Blase	University of Missouri

<u>Participant</u>	<u>Degree</u>	<u>Advisor</u>	<u>University</u>
Ali KHOUADJA	M.S./Ph.D	Dr. Bruce Cutter	University of Missouri
Essia LABIADH	M.A.	Dr. Bert Boyce	University of Missouri
Sghaier LABIADH	Ph.D	Dr. J. Frisby (not available)	University of Missouri
Abdelhamid MAHJOUB	Ph.D	Dr. L. B. Bullerman	University of Nebraska
Sadok NOUAIGUI	M.S./Ph.D	Dr. Wingfield	Kansas State University
Abdallah OMEZZINE	M.S./Ph.D	Dr. J. Rhodes	University of Missouri
Houcine RAHAL	M.S.	Dr. Elbert Dickey	University of Nebraska
Abdelhakim SAADI	M.S.	Dr. J. Steichen	Kansas State University
Bouali SAIDLIA	Ph.D	Dr. Earl Hammond	Iowa State University
Mohamed Habib SNANE	Ph.D	Dr. James Gregory	University of Missouri
Brahim TRABELSI	Ph.D	Dr. Jim Stephenson	Iowa State University
Mongi ZERKI	M.S.	Dr. L. R. Parsons	University of Florida
<u>US Graduate Students:</u>			
Nahla Stanford (NA)		Dr. Campbell	University of Missouri
Susan Kaup		Dr. Sutterlee	University of Nebraska

Participants enrolled in English not yet assigned advisors:

Hichem ACHOUR (M.S.)

Aws ALOUINI (Ph.D)

Siham BELLAGHA (M.S.)

Moncef BEN HAMMOUDA (M.S.)

Mohamed CHAKROUN (M.S.)

Mohamed CHEBAANE (Ph.D)

Raouf CHERIF (M.S.)

Mohsen DKHILI (M.S.)

Habib M'NASRIA (Ph.D)

KHAMASSI (Ph.D)

(finishing M.S. in Tunisia and scheduled  
to depart for the U.S. in 1/83)

ANNEX 7

LIST OF US UNIVERSITY AUTHORITIES INTERVIEWED

Dr. Douglas Ensminger, Project Supervisor, University of Missouri

Dr. J. Wendell McKinsey, Dean, University of Missouri

Ms. Jenny Shearin, Administrative Assistant, University of Missouri

Ms. Sarah Dixon, Administrative Assistant, University of Missouri

Mr. Larry Francis, Director of Intensive English Program, Univ. of Missouri

Dr. Norm Tooker, Director of International Programs, University of Nebraska

Dr. R.W. Kleis, Dean and Director International Programs, University of Nebraska

Dr. Glen Vollmar, Vice Chancellor, University of Nebraska

Dr. Roy G. Arnold, Vice Chancellor, Institute of Agriculture and National  
Resources, University of Nebraska

Dr. Robert Kruh, Dean, Kansas State University

Dr. John Noonan, Associate Dean, Kansas State University

Dr. Floyd W. Smith, Executive Director, MIAC

Dr. Vernon Larson, International Agric. Programs, Kansas State University

Dr. Jomes, International Agric. Programs, Kansas State University

Dr. John O. Dunbar, Dean of Agriculture and Director of Agric. Experiment  
Kansas State University

Dr. J. T. Scott, Assistant Dean, Agric. Programs, Iowa State University

Dr. Burke, Chairman, Department of Fruit Crops, University of Florida

GOVERNMENT OF TUNISIA AND A.I.D. OFFICERS  
INTERVIEWED

His Excellency Mr. Habib Ben Yahia, Tunisian Ambassador to the U.S.  
Mr. Mohamed Cherif, First Counselor, Tunisian Embassy, Washington, D.C.  
Mr. Ridha Hamada, Cultural Attaché, Tunisian Embassy, Washington, D.C.  
Mr. Mondher Nouicer, Scientific Mission of Tunisia to the USA  
Mr. Hamda Hafsia, Director, DERV  
Dr. Abderrahman Jerraya, Director, INAT  
Mr. Mustapha Lasram, Director, INRAT  
Mr. Mohamed Ben Senia, Director, ESAK  
Mr. Morched Ben Ali, Director, DAAF  
Dr. Abderrazak Daaloul, INAT  
Mr. Salem Lacuar, Director, ESH Chott Meriem  
Dr. Nourreddine Glenza, INAT  
Dr. Ali Ben Zaid Selmi, INAT  
Mr. Moncef Ben Said, INAT  
Madame Hassiba Chebeane, DERV  
Dr. Mohamed Ennabli, INAT  
Mr. Mustapha Guellouz, OEP  
Mr. Rhouma Zoubeldi, ESAK  
Mr. Gerald R. Wein, Acting Director, USAID  
Mr. Frank Kerber, Program Officer, USAID  
Mr. Ernest Hardy, Controller, USAID  
Mr. C. John Fliginger, USAID  
Ms. Marilyn Arnold, Tunisia Desk Officer, AID/W  
Mr. Richard Cobb, Chief, Agric. Development Division, AID/W  
Mr. Robert Morrow, Deputy Chief, Agric. Development Division, AID/W  
Ms. Bernadette Allard, AID Training Officer at the University of  
Georgia. Athens

ANNEX 9

SCHEDULE FOR GRADUATE TRAINING PROGRAM

INTEGRATED ATT AND INAT FACULTY DEVELOPMENT PROJECTS

Degree Level	Number Planned	Year of Departure and Estimated Year of Degree Completion <sup>a/</sup>	Year of Departure and Estimated Year of Degree Completion <sup>a/</sup>							Totals	
			1979	1980	1981	1982	1983	1984	1985		1986
Ph.D	30	Departure	6	4	16	6	1	0	0	0	32 <sup>b/</sup>
	9	M.S. to Ph.D	0	0	1	8	0	0	0	0	9
		Return	0	0	0	1	5	6	22	7	41
M.S./M.A.	42	Departure	5	17	10	9	0	0	0	0	41
		Return or complete <sup>c/</sup>	0	0	1	11	18	5	6	0	41

Note: Estimated time to earn degree: Ph.D - 48 months plus average of 4 more (52) for those who must take Intensive English Training in the USA

M.S. - 24 months plus average of 6 more (30) for those who must take Intensive English Training in the USA.

a/ Actual through December 31, 1982

b/ Two Ph.D candidates dropped from program. One was replaced by another candidate.

c/ Includes 9 who completed M.S. degree but were allowed to continue on for Ph.D.

ANNEX 10

POTENTIAL EVALUATION QUESTIONS

I. SELECTION OF PARTICIPANTS

Was procedure followed adequate to give all interested persons an opportunity to compete (apply) for bourses?

- Was selection based on criteria developed prior to interviews and final selection?
- Was selection objective, i.e. all applicants had equal opportunity.
- Was project paper "priority fields for Tunisian Agriculture" followed in selecting participants?
- Were female candidates given equal opportunity in the application and selection process?
- Were applicants given opportunity to select their study specialty (based on their interests, prior training, and experience)?
- Was selection of short term participants handled properly?
- Were long-range manpower needs followed closely, i.e. for short term participants?

## II. PRE-DEPARTURE ARRANGEMENTS

- Was intensive English instruction available to all who required it?
- Were intensive English sessions adequate quality, number, length?
- Were intensive English instruction results satisfactory?
- Were "pre TOEFL" and official TOEFL tests handled promptly?
- Were medical exams handled properly and promptly?
- Were visa applications handled properly and promptly?
- Were visa approved and secured promptly?
- Was Ministry of Agriculture approval for leave and travel handled promptly?
- Was Ministry of Defense clearance handled promptly?
- Were dossiers assembled promptly and completely?

## III. PLACEMENT OF CANDIDATES

- Was placement handled promptly?
- Was adequate care taken to place candidates in those institutions where the best training/courses was available?
- Were U.S. institutions fair in accepting or rejecting applications?

IV. SUPPORT SERVICES

- Was support of AID/Tunis adequate?
- Was support of American Consulate adequate?
- Was support of University of Missouri "home campus" staff timely and adequate?
- Was support by DERV officials adequate and timely?
- Were Ministry of Agriculture officials prompt in providing clearances,

approval, salary assistance, travel, etc.?

- Were directors of various DERV institutions supportive of project? Were they consulted in implementing project?

- Were authorizations given proper and timely attention?

- Was planning and construction of soils lab building handled efficiently and promptly?

- Was DERV ATT "Operations Committee" effective, helpful, valuable?

- Were office, equipment, supplies, etc. provided by DERV?

V. COMMODITY PROCUREMENT

- Were commodity orders processed promptly and effectively?

- Were proper "bid" procedures followed in procuring commodities?

- Were specifications followed in procuring commodities?

- Were U.S. Government regulations followed in procuring commodities?

5/1

- Was proper storage provided when commodities arrived?
- Was clearance of commodities from the port and douane handled promptly and efficiently?
- Has improvement in library services been noted?

VI. U.S. Ph.D RESEARCH ASSISTANTS

- Have all Ph.D research assistants been selected (4 in total)?
- Were proper procedures followed in selecting such "research assistants"?
- Has progress, to date, of assistants been satisfactory?
- Has support, both in U.S. and Tunisia, been adequate?
- Are research projects selected in harmony with project objectives?

VII. CONSULTANTS AND ADVISORS

- Is schedule being followed in providing consultants?
- Have consultants/advisors met desired standards of competency, concern for Tunisian students and problems, etc.?
- Have satisfactory reports, briefings, etc. been submitted by consultants/advisors?
- Have they attempted to guide participants into research activities that focus on Tunisian agricultural development problems?

Have they focussed on providing research and teaching skills required by participants?

~~Have they provided extra-curricular and practical experience that will make~~  
participants better teachers and researchers?

#### VIII. REPORTS AND RECORDS

- Have required reports (quarterly and annual) been prepared in accordance with specifications and on time?

- Have satisfactory financial records been maintained, both in Tunis and on University of Missouri campus?

- Have reports been circulated to proper authorities/officials and in a timely manner?

#### IX. PROJECT COORDINATING COMMITTEE

- Has it met as scheduled?

- Have deliberations and decisions taken contributed to improved project management?

- Has committee fulfilled its planning and advisory functions to date?

- Has the committee focussed on overcoming problems and constraints that hinder agricultural development in Tunisia?

- Has committee supported placement of candidates (upon completion of degrees) in those institutions where the need for strengthening programs is greatest?

X. PERSONNEL ASSIGNED TO IMPLEMENT PROJECT

- Were competent, well qualified personnel assigned to the project?
- Did they perform in a courteous, professional manner?
- Are they providing the kind of follow-up services required?

## MIAC CONTRACT PARTICIPANTS STATUS AS OF OCTOBER 1, 1982

(Combined ATT and INAT Projects)

NAME OF PARTICIPANT	ARRIVED IN U.S.	BEGAN ACADEMIC STUDIES	DEGREE SOUGHT	UNIVERSITY	FIELD	THESIS TOPIC	LOCATION FOR THESIS RESEARCH	PROJECTED COMPLETION DATE	PROJECTED INSTITUTION AFFILIATION
Abdelkafi, Bal-Hasse	8-81	8-81	Ph.D.	Univ. of Missouri Columbia	Agricultural Economics	(not yet selected)	U.S.A.	12/85	E.S.E.P.R.
Abdoul, Abdellhamid	6-80	9-80	M.S. (completed)	Iowa State Univ.	Agricultural Extension	Social and Economic Study of the Irrigated Perimeter of Gammouda with Development of Linear Programming Models for a Better Combination of the Production Factors	U.S.A.	6/82	D.E.R.V.
			Ph.D.	Univ. of Wisconsin Madison	Extension & Development	(not yet selected)	TUN	12/85	
Abdoul, Hedi	1-81	6-81	Ph.D.	Univ. of Wisconsin Madison	Animal Nutrition		TUN	12/85	I.N.R.A.T.
Achour, Hichem	8-82	(studying English)	M.S.	(applied to Univ. of Arizona)	Irrigation Engineering	(not yet selected)	U.S.A.	8/85	I.R.A.
Akreml, Boujmaa	8-80	1-81	Ph.D.	Univ. of Missouri	Animal Genetics	(topic related to the use of statistical methods to determine the inheritability of a character in beef cattle)	U.S.A.	10/84	E.H.H.V.
Aloul, Ali	1-81	6-81	M.S.	Univ. of Nebraska	Agricultural Extension	(not yet selected)	U.S.A.	10/83	D.E.R.V.
Aloul, Tahar	8-79	1-80	Ph.D.	Univ. of Missouri Columbia	Agronomy: Soil Science	Chemical and Physical Effects of Cations upon Soil Structures and Fertility Status	U.S.A.	8/83	E.S.A.R.
Alouini, Awa	8-82	(studying English)	Ph.D.	(applied to Colorado State Univ.)	Agricultural and Irrigation Engineering	(not yet selected)	?	12/86	E.S.H. de Chott-Mariem
Reji, Mohamed Ali	8-79	1-80	Ph.D.	Univ. of Missouri Columbia	Statistics	(not yet selected)	U.S.A.	12/83	I.N.R.A.T.

Bellagha, Sihem	8-82	(studying English)	M.S.	(applied to Univ. of Florida)	Food Engineering	(not yet selected)	U.S.A.	11/85	I.N.A.T.
Ben Aliya, ALJelmajid	8-80	1-81	M.S.	North Carolina State Univ.	Forest Entomology	(not yet selected)	U.S.A.	12/83	I.N.R.F.
Ben Hammouda, Moncef	8-82	(studying English)	M.S.	(possible application to Colorado State)	Agronomy: Soil & Water Cons.	(not yet selected)	U.S.A.	8/85	E.S.A.K.
Benkhedher, Mohamed	8-79	1-80	Ph.D.	Cornell Univ.	Vegetable Crops	Studies on Genotype-Environment Interactions in Potatoes, aimed at Identification of Traits to Improve Selection of Clones Adapted to Particular Environments	U.S.A.	8/83	I.N.R.A.T.
Ben Mansoura, Ameer	8-79	1-80	M.S.	Kansas State Univ.	Range Management	Multiple Defoliation Effects on Production Quality and Carbohydrate Reserves of Big Bluestem	U.S.A.	12/82	I.N.A.
			Ph.D.	Kansas State Univ.	Range Management		TUN	6/86	
Ben Mechlina, Netij	8-79	1-80	Ph.D.	Univ. of California, Davis	Land, Air and Water Resources	Crop-Yield:Weather Relationship Modeling	U.S.A.	6/83	I.N.R.A.T.
Ben M'Rad, Moncef	1-81	1-81	Ph.D.	Kansas State Univ.	Animal Science	Induction of Estrus in Anestrous Cows with <u>Clomiphene Citrate</u>	U.S.A.	6/86	E.N.M.V.
Ben M'Clir, Hamadi	8-80	1-81	M.S.	Univ. of Arizona (completed)	Agricultural Engineering	Irrigation Frequency and Total Water Application with Drip and Furrow System	U.S.A.	11/82	I.R.A.
			Ph.D.	Univ. of Arizona	Agricultural Engineering	(not yet selected)		6/86	
Ben M'Sir, Ahmed	1-82	8-82	M.S.	Univ. of Nebraska	Agricultural Engineering	(not yet selected)	U.S.A.	12/86	E.S.I.E.R.
Ben Salah, Hamadi	8-81	1-82	M.S.	Kansas State Univ.	Agronomy: Crop Production	(not yet selected)	U.S.A.	6/86	I.N.R.A.T.
Ben Younes, Mongi	8-80	1-81	M.S.	Univ. of Missouri Columbia	Agronomy: Plant Improvement	Interspecific Hybridization between <u>Lotus Corriculatus</u> (4-X) and <u>Lotus Tunulis</u> (2-X)	U.S.A.	12/82	E.S.A.K.

Boubaker, Mohaen	8-80	1-81	M.S.	Univ. of Missouri Columbia	Agronomy: Plant Improvement	Potassium Interacting with Nitrogen and Phosphorus to Reduce Disease and Lodging in some Wheat Genotypes	U.S.A.	12/82	F.S.A.K.
			Ph.D.	Univ. of Missouri Columbia	Agronomy: Plant Improvement	(not yet selected)	TUN	6/86	
Bouchandira, Mokhtar	1-82	6-82	M.S.	Iowa State Univ.	Agricultural Engineering	(not yet selected)	U.S.A.	12/84	F.S.A.K.
Bouslama, Mohamed	8-79	8-79	Ph.D. (completed)	Kansas State Univ.	Agronomy	Genetics of Drought Resistance in Soybeans	U.S.A.	7/82	F.S.A.K.
Chakroun, Mohamed	6-82	(studying English)	M.S.	(applied to Univ. of Missouri and Oklahoma State)	Agronomy: Forage Improvement	(not yet selected)	U.S.A.	8/85	I.N.R.A.T.
Chebaane, Mohamed	8-82	(studying English)	Ph.D.	(applied to Utah State Univ.)	Irrigation Engineering	(not yet selected)	?	12/86	I.N.A.T.
Chelbi, Mustapha	1-81	1-82	M.S.	Univ. of Georgia	Plant Pathology	(topic related to diseases of vegetables)	U.S.A.	8/84	F.S.H. Chott-Parlo
Cherif, Rachid	1-81	1-82	M.S.	Univ. of Georgia	Entomology	(topic related to insects causing storage problems)	U.S.A.	12/83	I.N.R.A.T.
Cherif, Raouf	6-82	(studying English)	M.S.	(applied to Univ. of Missouri - and possibly Oregon State Univ.)	Agronomy: Weed Science	(not yet selected)	U.S.A.	8/85	E.S.A.K.
Dallali, Ali	8-79	1-80	M.S.	Univ. of Missouri Columbia	Plant Pathology	(topic related to stem-grooving virus)	U.S.A.	12/82	I.R.A.
			Ph.D.	Univ. of Missouri Columbia	Plant Pathology		TUN	6/86	
Whifallah, Said Miloud	8-80	1-81	M.S.	Univ. of Nebraska Lincoln	Agricultural Economics	Economic Evaluation of the National Rural Development Program in Tunisia: 1972-1979	U.S.A.	12/82	I.R.A.
Djemali, M'Naouar (INAT Project 664-0316)	1-81	6-81	Ph.D.	Iowa State Univ.	Animal Science	(not yet selected)	?	9/85	I.N.A.T.

Dkhili, Mohsen	6-82	(studying English)	M.S.	(applied to Univ. of Nebraska)	Agronomy: Forage Production	(not yet selected)	U.S.A.	8/85	E.S.E. Mateur
Driss, Sadok	9-81	9-81	Ph.D.	Univ. of Illinois	Agricultural Economics	(not yet selected)	?	12/85	E.S.E.P.R., Moghrane
Fraj, Mohamed	8-80	1-81	M.S.	Univ. of Nebraska Lincoln	Agronomy: Plant Improvement	Combining Ability Study of Tunisian Inbred Lines of Corn Crossed with each other and with Inbred Lines from the United States	U.S.A.	1/83	I.N.R.A.T.
Gauloul, Abdelaziz	8-82	(studying English)	Ph.D.	(applied to Texas A & M)	Food Technology	(not yet selected)	?	12/86	I.N.A.T.
Garoui, Abderrazak (IHAT Project 664-0316)	8-81	8-81	Ph.D.	Oregon State Univ.	Statistics	Methodological Research in Survey Sampling	U.S.A.	8/85	I.N.A.T.
Ghali, Mohamed Habib	8-80	1-81	M.S.	Univ. of Nebraska	Agricultural Engineering	(not yet selected)	U.S.A.	8/81	C.R.C.R.
Gharbi, Ali	8-81	1-81	M.S.	Utah State Univ.	Irrigation Engineering	(topic related to water management)	U.S.A.	9/81	F.S.I.E.R.
Gharbi, Amel	6-81	9-81	M.S.	Univ. of Georgia	Plant Pathology	(not yet selected)	U.S.A.	8/81	I.N.R.A.T.
Gharbi, Azizez	5-81	9-81	Ph.D.	Univ. of Georgia	Agronomy: Soil Science	(not yet selected)	?	12/85	I.N.R.A.T.
Ghram, Abdeljelil	1-81	8-81	Ph.D.	Kansas State Univ.	Veterinary Medicine	(topic related to viral disease)	?	12/85	E.N.V.M.
Gulzani, Nejib	1-80	6-80	M.S.	Univ. of Missouri Columbia (completed)	Food Technology	Influence of the Temperature of Storage of Milk Prior to Processing on the Yield of Cottage Cheese	U.S.A.	8/82	E.S.I.A. Tunisia
Hafi, Chedli	8-81	1-82	Ph.D.	Univ. of Nebraska Lincoln	Animal Science	(not yet selected)	?	12/85	I.N.A.T.
Hajdi, Salem	1-81	8-81	Ph.D.	Univ. of Nebraska Lincoln	Agricultural Engineering	(topic related to solar greenhouses)	?	12/85	C.R.C.R.

Hamdy, Abdelkrim	9-81	9-81	Ph.D.	Oregon State Univ.	Civil Engineering	(not yet selected)	?	6/86	I.N.A.T.
Kaabla, Aida	8-80	1-81	M.A.	Univ. of Missouri Columbia	Library Science	(not yet selected)	U.S.A.	12/82	I.N.R.A.T.
Kaabla, Mohsen	8-80	6-81	M.S.	Univ. of Missouri Columbia	Agronomy and Agricultural Engineering	(topic related to the results of long-term soil erosion)	U.S.A.	12/83	I.N.R.A.T.
Kacem, Bechir	8-82	8-82	Ph.D.	Univ. of Florida	Food Preservation	(not yet selected)	?	8/86	E.S.H. Chott-Marjem
Khamassi, Nouri	(scheduled to arrive 1/83)		Ph.D.		Agronomy: Field Crop Production	(not yet selected)	?	12/86	I.N.R.A.T.
Khelifi, Bechir	6-80	8-80	M.S. (completed)	Univ. of Missouri Columbia	Agricultural Economics	Factors Influencing Cereal Production in Tunisia	U.S.A.	8/82	E.S.G.C.
Khoualja, Ali	8-80	1-81	M.S.	Univ. of Missouri Columbia	Forestry	Physical and Anatomical Properties of the Wood of <u>Quercus Engina</u>	U.S.A.	12/82	I.N.R.F.
			Ph.D.	Univ. of Missouri Columbia	Forestry	(not yet selected)	1981	6/86	I.N.R.F.
Kralem, Khennis	8-81	8-81	Ph.D.	Univ. of Minnesota	Animal Science	(not yet selected)	?	12/85	I.N.R.A.T.
Ksontini, Mustapha	1-81	1-82	M.S.	Oklahoma State Univ.	Forestry	(not yet selected)	U.S.A.	8/83	I.N.R.F.
Labladh, Essia	8-81	1-82	M.A.	Univ. of Missouri Columbia	Library Science	(not yet selected)	U.S.A.	12/83	I.N.A.T.
Labladh, Sghaier	6-80	9-80	Ph.D.	Univ. of Missouri Columbia	Agricultural Engineering	Forage Harvesting: Utilization of Computer Modeling to Optimize Energy and Economic Return	U.S.A. & Tunisia	5/85	E.S.I.E.R.
Limam, Mohamed	8-79	8-79	M.S. (completed)	Oregon State Univ.	Statistics	(no thesis)	U.S.A.	12/81	E.S.A.K.
			Ph.D.	Oregon State Univ.	Statistics	(not yet selected)	U.S.A.	6/85	

20

Mahjoub, Abdelmajid	6-80	6-80	Ph.D. Univ. of Nebraska Lincoln	Food Technology	The Microbiological Safety of the Rural Tunisian Diet	Tunisia	8/84	E.S.I.A. Tunisia
Marouani, Ahmed	1-80	6-80	M.S. Washington State Univ. (completed)	Agronomy: Seed Production	A Study of Factors Influencing Seed Quality and Seed Yield in Carrots Grown for Seed	U.S.A.	6/82	E.S.A.K.
Mehergui, Mohamed (INAT Projet 664-0316)	8-81	1-82	Ph.D. Univ. of California, Davis	Land, Air and Water Resources	(not yet selected)	TUN	12/85	I.N.R.F.
M'Nasria, Habib	6-82	(studying English)	Ph.D. (applied to Univ. of Missouri)	Food Engineering	(not yet selected)	TUN	12/86	I.N.A.T.
Nouaigui, Sudok	8-79	6-80	M.S. Kansas State Univ.	Grain Science	Comparative Study of Tempering, using Technovator Triple Tempering Screw and Washer: Study of Results on Bran Clean-up, Flour Quality and Yield Maximization	U.S.A.	12/82	E.S.I.A. Tunisia
			Ph.D. Kansas State Univ.	Grain Science	(not yet selected)	TUN	6/86	
Omezzine, Abdessatar	1-81	1-82	M.S. Colorado State Univ.	Horticulture	Interaction between <i>Sclerotinia Verticill</i> late as Cover Crop and Apple Seedlings	U.S.A.	8/83	E.S.H. Chott-Bat Lem
Omezzine, Abdallah	8-79	1-80	M.S. Univ. of Missouri Columbia	Agricultural Economics	An Appraisal of Agricultural Cooperatives in Tunisia	U.S.A.	5/82	E.S.H. Chott-Bat Lem
			Ph.D. Univ. of Missouri Columbia	Agricultural Economics	(not yet selected)	TUN	12/85	
Rahal, Houcine	8-80	1-81	M.S. Univ. of Nebraska Lincoln	Agricultural Engineering	(not yet selected)	U.S.A.	12/83	E.S.I.E.R.
Saadi, Abdelhakim	1-81	8-81	M.S. Kansas State Univ.	Agricultural Engineering	(not yet selected)	U.S.A.	12/83	E.S.I.E.R.
Saidia, Bouali	1-81	6-81	Ph.D. Iowa State Univ.	Food Technology	(topic related to Tunisian olive)	U.S.A.	5/85	E.S.I.A. Tunisia
Snane, Mohamed Habib	8-79	8-79	Ph.D. Univ. of Missouri Columbia	Agricultural Engineering	Residue Management and Irrigation Scheduling	U.S.A.	5/83	I.N.R.F.

Souissi, Abderrazak	8-80	6-81	M.S.	Univ. of Arizona	Civil Engineering	(not yet selected)	U.S.A.	12/83	E.S.J.E.R.
Trabelsi, Brahim	8-81	8-81	Ph.D.	Iowa State Univ.	Agricultural Economics	(not yet selected)	7	8/85	E.S.H. Chott-Mariem
Yahiaoui, Brahim	6-82	8-82	M.S.	Univ. of California, Riverside	Plant Pathology	(not yet selected)	U.S.A.	12/84	I.N.R.A.T.
Yahyaoui, Amor	8-82	8-82	Ph.D.	Montana State Univ.	Plant Pathology and Genetics	(topic related to the disease of barley, <u>Puccinia hordei</u> )	U.S.A. and Tunisia	8/86	E.S.A.K.
Zekri, Mongi	1-80	8-80	M.S.	Univ. of Florida	Fruit Crops	(not yet selected)	U.S.A.	12/82	E.S.H. Chott-Mariem
Abdelghani, M <sup>el</sup> Habib	8-81		Ph.D.	Cornell Univ.	Agricultural Economics	LEFT PROJECT: 12/81			(Counted as one Ph.D. participant)
Chattaoui, Touhami	1-80	8-80	Ph.D.	Univ. of Nebraska	Agronomy: Soil Science	LEFT PROJECT: 5/81			