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U.S. International Development and Cooperation
Agency Agency for International Development
Washington, DC 20523

PROJECT PAPER

Tunisia: Central Tunisia Rural Development
Rural Extension and Outreach
Sub-Project 664-0312.9

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memorandum

DATE: August 27, 1980

BY TO:
IN OF:

SUBJECT: Project authorization Rural Extension and Outreach: A Loan of \$2,805 million

TO: Mr. William F. Gelibert, Director

FROM: C. John Fliginger, FCA Officer *CF*CC: Edmund L. Richter, Program Officer *ER*

Your approval is required for a loan of \$2,805,000 to Tunisia from the Section 103 Agriculture and Rural Development and Nutrition appropriation under the FY 1980 continuing resolution. The loan is for subproject 664-0312.9: Rural Extension and Outreach, of the Central Tunisia Rural Development Project (664-0312).

The subproject is fully described in the subproject paper and draft project agreement annex (annex 2 to agreement 664-0312) both of which are attached. Briefly, it consists of efforts to: (1) enhance the two-way flow of communication between small farmers in Central Tunisia and public research and outreach organizations; and (2) improve communications among the same public sector organizations. Also attached is an issues paper that discusses the resolutions the project committee has agreed upon for issues posed by AID/W, various mission offices, and yourself in the course of project design.

The question of whether technical services from a U.S. land grant university will be obtained by direct negotiation with one already operating here (e.g. Oregon State University as requested by the Ministry of Agriculture), a short list of such existing contractors, or by a general Government of Tunisia request for proposals is left open, pending AID/W reply to our inquiry. As now written the paper, authorization, and draft agreement would permit any of these at A.I.D. and the Government of Tunisia's joint option.

Similarly no waiver for short-term third country training in a developed country is now included. The paper provides for such training in the U.S. or third countries. If, in the development of detailed training programs as called for in the agreement, some training in developed third countries is found to be desirable, the necessary waivers will be sought at that time.

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Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

Environmental Considerations

A negative determination was requested by the Initial Environmental Examination submitted with the EID, on December 21, 1979, with which the Near East Bureau's Environmental Coordinator concurred (memorandum of Jan. 11, 1980 attached). The mission was subsequently authorized to proceed with the Project Paper by SO State 36098. That cable was sent with regard to the Environmental question but approved the EID, of which the IEE was Annex II.

Since then the project committee has become concerned that the use of agricultural chemicals on the demonstration plots may have adverse environmental effects. Consequently, the proposed authorization requires an environmental assessment and subsequent modification of the design and implementation of the farmer demonstration plots in accordance with the assessment's recommendations as a condition precedent to disbursement of the Loan for the plots.

Justification to Congress

The subproject is part of the Central Tunisia Rural Development Project which was in the EY 79 and EY 80 CEs. However the subproject would have pushed the EY 80 OYB for this project beyond the amount previously notified, so notification No. 294 was sent to Congress July 22, 1980. The waiting period expired August 6, 1980 without objection.

Human Rights Clearance

Clearance as required was requested for the Central Tunisia Rural Development project (664-0312) in an action memorandum from the Administrator for the Near East Bureau to the Deputy Administrator dated March 26, 1979, recommending approval of this project, and for this subproject when the EID was approved. There are currently no human rights issues in Tunisia under the Foreign Assistance Act of 1961, as amended.

You have the authority to authorize this proposed amendment to the project pursuant to the Administrator's May 27, 1980 Delegation of Authority to A-10002 and his July 26, 1980 redelegation to you (State 190727).

Recommendation

That you sign the attached project authorization.

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Mission Spéciale Américaine
de Coopération Economique
et Technique en Tunisie

UNITED STATES OF AMERICA
Special Mission for Economic
and Technical Cooperation
149, Avenue de la Liberté
Tunis, Tunisia

البعثة الأمريكية الخاصة بالتعاون
الاقتصادي والتقني
تونس



AMENDMENT

TO

PROJECT AUTHORIZATION

Name of Country: Tunisia

Name of Project: Central Tunisia Rural Development
(Rural Extension and Outreach Sub-Project)

Number of Project: 664-0312.9

Number of Loans: _____

The Central Tunisia Rural Development Project (the "Project") for Tunisia was authorized on March 28, 1979, when authorization was amended on September 1, 1979 and June 2, 1980. That authorization, pursuant to the delegation of authority of May 27, 1980 by the Administrator and subsequent delegation of July 26, 1980 by the Acting Assistant Administrator, Bureau for Near East, is hereby amended as follows:

I. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Rural Extension and Outreach sub-project (the "Rural Extension and Outreach Sub-Project") for Tunisia involving planned obligations of not to exceed Two Million Eight Hundred Five Thousand U.S. Dollars (\$2,805,000) in loan funds, subject to the availability of funds in accordance with the A.I.D. OYB/Allotment _____, _____,

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to help in financing foreign exchange and local currency costs for the Rural Extension sub-project.

2. The Rural Extension sub-project consists of the improvement of agricultural and rural development information dissemination in Central Tunisia through assistance to the Central Tunisia Development Authority or its equivalent.

3. The Project Agreement Amendment(s) which may be negotiated and executed by the officer(s) to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority shall be subject to the following essential terms, covenants and major conditions together with such other terms and conditions as A.I.D. may deem appropriate:

a. Interest Rate and Terms of Repayment for Rural Extension Sub-Project

Tunisia shall repay the Loan provided in this Amendment to the United States Dollars within twenty-five (25) years from the date of first disbursement of the Loan, including a grace period which shall not exceed ten (10) years. Tunisia shall pay to A.I.D. in United States Dollars interest from the date of first disbursement of the Loan at the rate of (a) two percent (2%) per annum during the first ten (10) years, and (b) three percent (3%) per annum thereafter, on the outstanding disbursed balance of the Loan and on any arrears of interest accrued thereon.

b. Conditions Precedent for Rural Extension Sub-Project

Except as A.I.D. may otherwise agree in writing:

(i) Prior to the initial disbursement or issuance by A.I.D. of documents pursuant to which the initial disbursement may occur under the Loan for the Rural Extension sub-project, Tunisia shall provide a grant of authority in form and substance satisfactory to A.I.D.: a grant of authority to the Central Tunisia Development Authority, or its equivalent, authorizing it to provide extension services to Dryland Farmers in Central Tunisia;

(ii) Prior to disbursement for the Extension Support Services (ESSU), Tunisia will provide evidence that the ESSU is established in form and substance satisfactory to A.I.D.;

(iii) Prior to disbursement for the technical services to be provided by a U.S. university institution, Tunisia will provide a grant of authority acceptable to A.I.D. signed between the appropriate Tunisian authority and a U.S. university institution; and

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(iv) Prior to disbursement for the demonstration plots, Tunisia will cause to have completed an environmental assessment, acceptable to A.I.D., of the methods and materials to be used on the plots and plans for these plots which conform to the environmental assessment.

c. Covenants for Rural Extension Sub-Project:

In carrying out the Rural Extension Sub-Project, Tunisia shall covenant:

(i) to develop plans to enhance the impact of outreach activities on women in the target group and to increase the opportunities for women as extension agents within the Agriculture Extension Service; and

(ii) to assure the availability of necessary production elements for the sub-project.

Except as amended hereby, the Authorization, as amended, shall remain in full force and effect.


William F. Galanter
Director
USAID/Tunisia

Clearances:

CONT: Holmes Wormald 

RD: Patrick D. Demongeot 

F&A: C. John Fliginger 

PROG: Edmund L. Auchter 

Drafter: GC/NE:SECarlson:nm:8/21/80 _____


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AGENCY FOR INTERNATIONAL DEVELOPMENT
PROJECT DATA SHEET

1. TRANSACTION CODE
 A = Add
 C = Change
 D = Delete

Amendment Number

DOCUMENT CODE 3

COUNTRY/ENTITY TUNISIA

3. PROJECT NUMBER 664-0312.9

BUREAU/OFFICE NE

5. PROJECT TITLE (maximum 40 characters)
 CTRD. Rural Extension and Outreach

PROJECT ASSISTANCE COMPLETION DATE (PACD)
 MM DD YY
 06 30 65

7. ESTIMATED DATE OF OBLIGATION
 (Under 'B' below, enter 1, 2, 3, or 4)
 A. Initial FY: 80 B. Quarter: 4

8. COSTS (\$000 OR EQUIVALENT \$1 =)

A. FUNDING SOURCE	FIRST FY 66			SECOND YEAR PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	2174	031	2805	2174	031	2805
(Grant)	()	()	()	()	()	()
(Loan)	(2174)	(031)	(2805)	(2174)	(031)	(2805)
Other						
1.						
2.						
Host Country		004	004		004	004
Other Donor(s)						
TOTALS	2174	031	2805	2174	031	2805

9. SCHEDULE OF AID FUNDING (\$000)

APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. PURPOSE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
1. AID	120		012				2805		2805
TOTALS							2805		2805

SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)
 010 020 000 700

SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)
 A. Code B1 B5
 B. Amount 2005 2005

PROJECT PURPOSE (maximum 480 characters)
 An effective communications system between the rural population and public sector purveyors of information and services established in fields such as agriculture, health, and industry.

SCHEDULED EVALUATIONS

Interim MM YY MM YY Final MM YY
 06 02 06 02 06 05 08 05

15. SOURCE/ORIGIN OF GOODS AND SERVICES
 000 941 Local

AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment)

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17. APPROVED BY

Signature: William F. Gelabert
 Title: Mission Director

Date Signed: MM DD YY
 06 02 65

18. DOCUMENT RECEIVED BY AND FOR AID/WI
 DATE OF DISTRIBUTION: MM DD YY

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II. SUMMARY AND BACKGROUND

A. Summary

Rural extension activities in Central Tunisia suffer from serious deficiencies in communication flow among researchers, extension agents and farmers. As a result, farmers and extension agents lack knowledge on improved practices and techniques, and research programs are not as well focused as they could be because investigators are unaware of farmer needs and problems. There is a similar breakdown in two-way communication flow between target group households and change agents in other fields (health, nutrition, family planning) of rural development.

This subproject will assist the Government of Tunisia's Ministry of Agriculture (MOA) to: (a) strengthen the existing CTDA Agricultural Extension Service (AES); and (b) establish a new Extension Services Support Unit (ESSU) which will provide multidisciplinary information and media support to all the rural outreach activities in Central Tunisia, including the AES.

The end of subproject status will see both units operating and greater responsiveness by all Central Tunisia outreach programs to the needs of the area's poor households. Although the subproject emphasizes agriculture, contributions also will be made to strengthening the outreach capacity in the related sectors of health, nutrition and education.

B. Background

This subproject is one of several related activities being implemented with A.I.D. participation in Central Tunisia. The principal A.I.D. mechanism for assistance is the Central Tunisia Rural Development Project (664-0312) authorized on March 28, 1979. Other subprojects included in the Central Tunisia umbrella are Area Development, Irrigation and Dryland Farming Systems, Range Management, Small Scale Industrial Development and a group of potable water subprojects, some being implemented by CARE, some by a government-owned utility (SONEDE) and one by CTDA. Also in Central Tunisia, although not a part of the CTRD cluster, is the Rural Community Health Project (664-0296). The extension subproject will serve all of the above activities by providing a vehicle for passing information from research and service organizations to the beneficiaries.

The rationale for selection of Central Tunisia as the project area, a description of the target population and the goal and purpose of the core project are described in the Central Tunisia Rural Development PP. The approximately 200,000 people in the area are among the poorest in Tunisia. The wide majority of households practice dryland farming, although a small number of farmers (3,000) have irrigation, and per capita incomes range from US\$40 to US\$100.

MISSING PAGE
NO. 3

III. SUBPROJECT DESCRIPTION

A. Goal, Purpose and Assumptions

The goal of all Central Tunisia Rural Development subprojects is to improve the quality of rural life and the real incomes of rural households in Central Tunisia. This subproject's purpose is to establish a two-way communications system between the target population and the public sector service and information organizations and improve the flow of information among those public sector entities.

There are several important assumptions linking the purpose and the goal. The key one is that better communications between the population and the service entities will allow rural households to gain and use information about technology and practices to increase their productivity, health and well being. A corollary assumption is that improved communications among the outreach services will give the agents more information to disseminate which is relevant to their clients' needs. A third assumption is that the means to use more knowledge about agricultural technology, health, nutrition, etc., will be available to the population of Central Tunisia.

B. Technical Interventions

This subproject concentrates on dissemination of new information in agriculture -- by assisting the CTDA to upgrade the Agricultural Extension Service (AES) and establish a multidisciplinary Extension Support Services Unit (ESSU). Although the ESSU will have limited capability in producing health materials, related CTRD subprojects (Small Scale Industry, Potable Water and the CARE OPGs) and the Rural Community Health project will provide the support to make the ESSU effective in other fields of rural development.

1. Extension Support Services Unit (ESSU)

The ESSU will be a depository of technical and communication expertise supporting extension activities throughout Central Tunisia. Initially it will have two technical units (Agriculture and Health) and a communications unit. The final number of technical units will be determined as the CTDA becomes more active in its range of development activities. This expansion may be supported by other AID supported projects either within or outside of the CTRD envelope. The ESSU will have four primary functions:

- (i) provide technical assistance to field agents, and supervise delivery of extension, health education, and other rural development packages;
- (ii) act as a forward and backward linkage between research efforts and beneficiaries concerning new techniques and practices;
- (iii) coordinate all extension activities in the region; and

- (iv) develop new technology information packages, especially for Central Tunisia, and arrange for their production by the Central Ministry of Agricultural audio-visual unit.

The agricultural expertise in the ESSU will be in agronomy, animal production and range management, water resources management, and agricultural economics. In health, the expertise initially will be in health education and preventive medicine.

The communications unit staff (initially one specialist and two assistants) will have capability in rural sociology and media communications techniques. It will draw together, duplicate and disseminate pertinent area development information to service agencies and their field personnel. In addition it will arrange in-service training courses for field agents of the AES and other organizations on social factors that could inhibit adoption of new technology, and supervise a modest audio-visual unit in collaboration with a larger one operated by the DERV.

2. Agricultural Extension Service (AES)

The AES field staff was transferred en masse to CTDA from the Office de la Mise en Valeur de la Vallée de la Medjerda (OMVVM). Since the changeover, this group has been handicapped by the absence of qualified supervision. This problem will be corrected by the appointment of a director in the first year of the subproject. It will be his responsibility to: (1) assess the training needs of the field agents and arrange for meeting these needs; (2) coordinate the agents' work schedule with the regional officer in each delegation; and (3) supervise activities on the training farm and nurseries.

Currently, the staff of the AES consists of 48 agents; five are specialists in irrigation but have had no training in agronomy or water management, eight are horticultural agronomists with some irrigation expertise but no water management background, and five are livestock specialists. This group has provided the backstop expertise for the remaining 31 agents, all of whom are generalists, who form the cadre that is in direct contact with the farmers. Trained and numerically expanded with the help of this subproject, it is expected that this group of generalists will become the core of the extension service for Central Tunisia and serve as a model for a nation-wide extension-service. Their main function will be to work directly with the farmers to solve production problems and introduce new techniques and practices. They will use the CTV (concentration on small territorial units and a low number of farmers) extension methodology and the inclusion in this subproject of items like weekly work plans, demonstration plots, farmer information days, and the use of mass media will enhance their effectiveness in providing the needed services (see Annex B.4 for a complete list of extension techniques).

C. Subproject Inputs

This subproject is budgeted at \$7.269 million. Of this total \$2.805 million will be A.I.D. funded with the balance (\$4.464 million) financed by the GOT (budget details appear in Annex B.1.b.). AID financed inputs include technical assistance, training and commodities, while the GOT will contribute land and buildings, training, and certain commodities.

1. U.S. Inputs

a. Technical Assistance

The U.S. inputs to the subproject will center on contract services procured from a U.S. university. These services will include two resident advisors, one each to the ESSU and the AES directors. Each will be assigned for a period of three years and complemented by short term specialists throughout the subproject assistance period. A total of 30 person months of TDY specialists are expected to be utilized during the period. (See Annex I for resident advisor scopes of work).

b. Training

AID inputs to training will consist of 8 person years of long term academic training in the U.S. and 18 person months of short term Third Country study. The former is intended to bring four agricultural specialists in the ESSU to the M.S. level, thereby improving their capability to provide technical and communications support to AES field agents. The latter, divided into 14 units of four to six weeks duration, will improve the technical capacity of selected AES staff members.

In addition AID will finance trainers for short courses at research institutes in Tunisia, and may pay for the set-up costs of what will be a regular program after the conclusion of this subproject. AID also will provide trainers and fund parts of the establishment costs of a special training program for extension agents of Moghrane (Ecole Supérieure Agricole de Moghrane) which will involve farm management and communications training. The recurring costs of this continuing program will be met by the Government of Tunisia.

c. Commodities

U.S. financing of commodities will be of two kinds. In-country shelf-items required to establish the experimental farms, the nurseries, the training programs, and the broadening of the AES responsibilities into dryland farming extension will be purchased by the CTDA and their cost reimbursed by AID U.S. or Code 941 (Developing Countries) source procurement of transportation (autos are U.S. source only), audio-visual and reproduction equipment, books, and publications will be implemented by the Government of Tunisia (in the case of transportation) and by the university contractor for the other items.

d. Other

As noted in the FID, AID will provide support for certain other subproject items. Specifically, AID will contribute up to 40 percent of the costs for 1100 demonstration plots; and up to 45 percent of the 500 information days. For the former AID will provide reimbursement for satisfactorily installed plots that introduce new technology packages. It is estimated that the

AID contribution will not exceed U.S.\$200 per one half hectare plot. Concerning the latter AID will reimburse, on a semi-annual basis, up to U.S.\$250 per farmer information day. These information days will be organized in collaboration with the Le Kef Institute, the Agricultural Schools at Moghrane and Sidi Bou Zid, and the experimental station at Ousseltia. In both cases the GOT will covenant to continue these activities after the conclusion of this subproject. The schedule for implementation of demonstration plots and information days is:

	<u>Demonstration Plots</u>	<u>Information Days</u>
Year I	100	20
Year II	200	120
Year III	400	120
Year IV	400	120
Year V	300*	120
Year VI	300*	120*

2. Government of Tunisia Inputs

As noted above the Government of Tunisia will contribute two-thirds of the dollar value of this subproject. The GOT will pay the recurring costs of the ESSU and the AES, replace and maintain project equipment including vehicles and provide land and buildings for the new or enhanced activities. The GOT will also contribute to the cost of training and procurement of commodities.

a. Training

The GOT will provide the use of facilities at a number of institutions (e.g. Le Kef, Sidi Bou Zid, Moghrane, Ousseltia, INAT, and the Arid Lands Institute of Medenine) for training ESSU and AES personnel and for farmer information days. Agreements between CTDA and these institutions (or their governing units in the MOA) will be arranged to define relative responsibilities. Of particular importance is the increased attention to DERV which will prepare training materials in cooperation with the ESSU.

The Government will pay both international and in-country travel costs of trainees, as well as in-country per diem. It will also finance the costs of workshops in each year of the subproject, in-country transportation, and support facilities for expatriate short term trainers and the salary and per diem of trainees.

b. Commodities

In addition to normal office equipment and supplies, a Government contribution to the subproject will be funding for two four wheel drive vehicles, four trucks, and two minibuses. These will be provided in year one, and complement the U.S. source vehicles and equipment being financed by AID

* Not to be financed by AID

IV. ANALYSES

A. Economic Analysis

This economic analysis addresses two questions. First, are the social and economic benefits to be gained from this subproject worth the economic costs? Secondly, as U.S. assistance is entirely loan, are the repayment prospects reasonable?

1. Subproject Feasibility

The benefits of this subproject will directly reach a wide range of beneficiaries (ultimately every household in Central Tunisia) if the project is successfully implemented. Its purpose is to establish a better two-way communications system between the population of Central Tunisia and the public sector service and information organizations, and also among public sector entities. Improved communications will increase the quantity and timeliness of technical information provided the project beneficiaries, while ensuring that research and extension organizations are more informed about the needs of the rural population.

Research in a number of developing countries (Welch, Evenson, Griliches, etc.)^{*} has estimated the rate of return on agricultural research to be forty percent or better. But such a rate of return can only exist if the outreach personnel and facilities are in place to make the results accessible to farmers. If the conventional estimates of the return from such institutes are correct, the combined rate of return from the investment of this subproject and that of the Dryland subproject will remain over 15 percent. In addition, there will be other benefits accruing from the health education component of the ESSU, the cost savings involved in better outreach coordination, and from other future Central Tunisia subprojects.

The subproject may also be justified economically in terms of cost effectiveness. The cost per beneficiary is approximately \$35.^{**} The U.S. share of this cost is about \$14 per beneficiary. In view of the essential role this subproject will play in the ultimate success of the overall Central Tunisia Rural Development Project (see part IV. D., Administrative Feasibility), \$35 per beneficiary is clearly reasonable and justified.

Furthermore, there will be no incremental annual recurrent costs at the end of five years. That is, all ongoing annual recurrent costs will be costs which the GOT will already have been funding during the first 5 year life of the subproject. An analysis of GOT costs during the fifth year of the project provides a reasonably accurate estimation of the recurrent costs the GOT will assume as a result of this subproject.

^{**} L.O.P. funding, U.S. (\$2,805,000) - GOT (\$4,464,000) divided by target population (200,000) is approximately \$35.

* See ANNEX D., Economic Analysis Bibliography, for complete references.

Recurrent Costs*/
(Tunisian Dinars)

Personnel	TD 210,000
Vehicle Replacements	34,000
Vehicle and Equipment Operation and Maintenance	97,000
Equipment	2,000
Supplies	9,000
Utilities, rent, etc. (ESSU and AES)	18,000
Short term 3rd country training	9,000
Training Farm	<u>5,000</u>
Total	TD 384,000 = \$960,000

Annual recurrent costs of \$960,000 or an annual cost per beneficiary of \$4.80 for an extension activity which will benefit continually the rural people of Central Tunisia is both reasonable and well within the financial capabilities of the Tunisian Government.

2. Repayment Prospects

Tunisia has for several years maintained international reserves that fluctuate between the values of three and five months' imports. Its debt service has grown substantially in recent years but remains well below 15 percent of its foreign exchange earnings. Its exchange regime (described in the AMF's Annual Report on exchange restrictions) remain highly restrictive, so that unplanned and unexpected claims on its reserves are unlikely. This subproject, if successful in reaching its goals, will increase Tunisian productivity, production, and income, reduce import needs, and thus improve Tunisia's international position.

Taken together, the repayment prospects for this loan are excellent.

*/ These are 1985 costs which have already been adjusted upward to allow for inflation.

B. Social Soundness Analysis

1. Overview of Beneficiaries

The beneficiaries of this project are approximately 35,000 small farmer households residing in Central Tunisia. A complete analytical description of this group appears in Annex E. Supplemental analysis is found in the original CTRD Project Paper and a 1978 report prepared by Nicholas Hopkins*).

These beneficiaries are, in the main, subsistence oriented farmers and among the poorest people in Tunisia. Peasants marginal to the social mainstream, they are at the end of lines of communication and social services which radiate to the hinterland from urban areas.

2. Sociocultural Feasibility

This subproject design considered the major sociocultural constraints to successful implementation. For each constraint a corrective strategy was designed and included in the project. These constraints include risk behavior, land tenure, locus of authority and decision making process, the role of women, capital formation, and social distance between the beneficiaries and extension agents.

(a) Risk behavior:

Adoption of new technologies is hindered or enhanced by the risk management behavior of the potential recipients. To the extent that they are risk adverse the adoption process is retarded, to the degree they are risk takers the probabilities for innovation are increased. Project related field research indicates that while the target group farmers are not adverse to risk, they deal with it through a mini-max strategy; an approach which emphasises low calculated risks and yields small gains. Small farmers are basically a conservative group, a factor which, coupled with their low incomes inhibits their willingness - ability to gamble on unknown items such as new technologies until convinced of their utility.

This subproject features the use of demonstration plots to counteract this constraint. Under the technical guidance of extensionists and with inputs financed by the project, volunteer farmers will experiment with the recommended improvements on a small plot of their land at virtually no risk. As the plots will be located in the target area neighboring farmers will be able to observe, first-hand, the recommended improvements without placing in jeopardy their own subsistence.

*) Hopkins, Nicholas S.: Elements for a Social Soundness Analysis of the Agricultural Interventions, Central Tunisia, July 1978

(b) Capital Formation:

A related potential constraint is the lack of working capital. As noted above, the beneficiaries are primarily subsistence farmers -- this is especially true of the dryland farmers who comprise 90 percent of small farmers in Central Tunisia. Even if convinced of their utility most of these growers do not have the money to buy the fertilizer, improved seed varieties and other items included in the technological packages. Hence there is a need for a mechanism whereby farmers can finance initially the cost of inputs.

This issue will be addressed by providing one-time grants in materials to farmers who agree to participate in the demonstration plot program. The grants will be issued only to farmers who provide one-half hectare for the experiments and agree to work under the supervision of an extensionist. In making these grants care will be taken to avoid creation of a dole mentality (consideration will be given to affixing a nominal charge which will be in keeping with beneficiary perception of balanced reciprocity) and emphasis will be placed on the fact that they are one-time awards. Over the long term, production credit on a loan basis will be provided by roll-over funds from the Small Scale Irrigation Subproject and a separate loan fund with GOT monies managed by CTDA. This subproject will contain covenants to this end.

(c) Land Tenure:

Research carried out in Central Tunisia indicates that farmers are more apt to make investments in property which they own (*). Furthermore, the same study points out that the single most important factor with respect to land in the area is the complicated issue of tenure. Current patterns include state controlled public land, privately owned parcels, and traditional tribal lands to which there are no clear titles, but which in many cases are being divided up into individually operated holdings. Clear title to land is a prerequisite to obtaining loans through formal credit channels; as noted above production credit is a critical issue for the adoption of new technologies. This subproject has no provision to assist in attainment of land titles. A condition precedent in the CTRD Small Scale Irrigation Subproject requires the GOT (CTDA) to develop a plan for providing clear title to land to small farmers in the target area. In so far as the geographic area covered by the two activities is the same, it is anticipated that this plan will be applied to the extension subproject as well.

(d) Dynamics of Information Flow and Locus of Authority:

In extending new technological packages to farmers it is important that the information be passed to the members of the household unit who are in a position to make a decision about the utilization of family resources. A review

(*) Hopkins, Nicholas S.: Elements for a Social Soundness Analysis of the Agricultural Interventions, Central Tunisia, July 1978

of dynamics of information flow and locus of authority within the family indicates that typically, the oldest male of the household unit is the decision-maker concerning the allocation of family resources, especially those related to production. This authority is shared with younger males only to the extent in proportion to their financial contribution.

Reasoning that the younger males are better educated, and less aligned to traditional farming practices, it is probable that extensionists would tend to focus on this group of farmers. While this would not be without long term merit, efforts to achieve rapid adoption must be designed to effectively reach the decision makers -- the older males. Of course, there will be exceptions to this general pattern. The critical point is that the agents be able to recognize the locus of authority in the household with which they are dealing. This will be one of a variety of items in the cultural training (described below) agents will receive to enhance their effectiveness in dealing with the farmers.

(e) Role of Women:

While women play an extensive and important part in agricultural production, the role of women in judgments concerning allocation of family resources is minimal. Research data point out also that the number of female household heads in the target area is extremely small. Established inheritance patterns require that distribution of land be made principally among male children. In cases of the death of a husband, the wife acts as the steward - not the owner of the holding, until sons are of sufficient age to assume management. Strategies for overcoming these constraints to direct participation of target group women in the project include: placing a special emphasis within the ESSU to development of information packages for women. These packages will focus on those production activities with which women are most involved and will be geared to increase knowledge and adoption of improved techniques, reduce drudgery of manual labor, and raise productive output thereby enhancing the households economic situation and the place of women within the unit. In addition, the ESSU will coordinate with frontline workers in other sectors (health, social services) to diffuse agricultural information. In fact a design component provides for the assignment of a health technician to the ESSU.

Although there is an incipient trend of female participation in professional and para-professional positions in the bureaucratic systems at the provincial level, culturally defined behavior patterns related to male-female roles currently restrict the employment opportunities for women. Coincidentally there is a trend among women to seek careers in fields other than agriculture. These two reasons make it unrealistic to anticipate a dramatic increase in the number of female extension agents during the life of this project.

Two of the twenty-eight agricultural schools in the country specialize in training women. The ESSU will serve as a link between these schools and the AES promoting both agriculture as an attractive professional career and the benefit to be derived in improving outreach services by placing more women in extension positions. Once recruited, the women extensionists will receive the same training (technical and social) that will be given to all the agents to upgrade their skills.

(f) Social Distance:

The acceptability of technological innovations is in part determined by the rapport that exists between beneficiaries and the change agents. Such rapport is in turn often a function of the social distance that exists between the two groups. In this case the distance is significant. First there are relatively well educated, upwardly mobile, middle class extensionists many of whom are from rural town and urban backgrounds and have had little interaction with small farmers hence there is limited understanding of the constraints under which these growers operate. These extensionists will be dealing with semi-literate peasants who have had only sporadic contact with urban run bureaucracies and must be convinced, through direct experience, that the assistance being offered will be beneficial to them. Given these differences a high potential for misunderstanding between agents and farmers exists.

Subproject design includes two strategies to address this problem. First, social science instruction will be a part of the training curriculum of the agents. This instruction, including items like risk management, locus of authority, inheritance and land tenure, perceptions of gifts and credit, will be geared to give the extensionists better insight to the social factors of peasant farming thereby making them more effective as change agents. Second the ESSU will have the capacity, through its rural sociologist/media specialist to provide materials to the agents that are sensitive to the nuances of subsistence farming.

C. Technical Feasibility

The technology in this subproject is drawn from two disciplines - Agriculture and Communication. The former will provide the technical means for beneficiaries to increase production, hence improve income and quality of life, while the latter will facilitate the transfer of recommended agricultural interventions to the farmers. Communication techniques will also enhance feedback concerning needs and problems from the farmers to the extension and research personnel thereby completing the flow of information circuit.

The central issue with agricultural technology is the development of appropriate interventions for both irrigated and dryland farming. Designing technological packages for irrigated agriculture in Central Tunisia presents little apparent difficulty. Considerable experience has been gained from the Sidi Bouzid FAO - SIDA project in adapting vegetable, fruit, and forage crops to irrigated farming. In addition, the bulk of the work conducted at National Agronomic Research Institute (INRAT) field stations has focused on production systems for irrigated farming. The technology is available; the question is one of successfully transferring it to the growers.

Agricultural technology for rainfed lands (dryland) farming in Tunisia is much less developed. A grain research program at Le Kef has been established to address this inadequacy. However, the Le Kef program is at a nascent stage and will require at least two years to produce viable recommendations. In the interim dryland techniques (for example methods for improved soil conservation) developed in other countries will be adapted and used in the target area.

The bulk of the agricultural technologies will be drawn from other projects (e.g. drylands research at Le Kef and FAO experiences at Sidi Bouzid) thereby underscoring the linkage between this subproject and other ongoing or planned activities in Central Tunisia.

This subproject includes funding for only two agricultural technology items; (1) \$120,000 to help equip one extension training farm; and (2) \$215,000 for materials for one arboriculture and eight vegetable crop nurseries. The training farm will enable the extension agents to obtain first-hand experience with the recommended interventions prior to diffusion to the farmers. The nurseries will provide seeds and plant material to be used by the extension agents on demonstration plots with participating farmers.

Critical considerations concerning communications techniques are: (1) designing approaches which adequately determine the needs of the farmers, and (2) devising culturally acceptable methods for achieving high adoption rates of the recommended packages with particular attention given to the risk management behavior of the recipients.

This subproject contains a cluster of elements to achieve these ends.

As detailed in the project description section of this paper, a multidisciplinary Extension Services Support Unit will be established within CTDA. This unit will collect, process, and disseminate information to support the extension agents. In collaboration with other government service organizations it will produce audio-visual materials for distribution during agents' field visits, farmer information days, and workshops. Similar materials will be produced to help diffuse information in other disciplines (e.g. health and nutrition) to the target population. The guiding principle in designing these materials will be the limited sophistication of the recipients. Therefore, messages will be short, simple, increasingly in the native Arabic tongue of the beneficiaries, and based on locally important cultural themes. This subproject contains \$280,000 dollars to help install audiovisual production capacity within the ESSU and DERV.

Additional communication technologies include: demonstration plots for participating growers (1100 at \$200/plot = \$220,000), farmer information days (500 at \$250 = \$125,000) and cultural sensitivity and communication methodology instruction for the extension agents as part of their training (\$60,000). The U.S. contribution to these activities will be on a modified Fixed Amount Reimbursement (FAR) basis according to which AID will repay the GOT for approx. 45 percent of the estimated cost for the demonstration plots and 40 percent for the information days (subject to an overall limit of \$405,000).

The sum of the U.S. contribution to the technical (agriculture and communication) components of this project is \$1.020 million. This is equivalent to an expenditure of \$5.00 per capita (based on target population of 200,000) -- a figure well within reason for AID financed projects.*

The cost of the technical interventions is in compliance with Section 611(a)(1) of the Foreign Assistance Act which requires firm cost estimates for U.S. expenditures. Moreover, the combination of agricultural and communication technologies is an appropriate mix for this subproject. The improved agricultural techniques and materials will provide farmers the prime matter to raise production thereby improving incomes and quality of life. The communications element supplies the means whereby research and extension personnel will become more attuned to the needs and difficulties of the growers, while giving the farmers greater access to information on improved technologies.

For a more detailed description of the agricultural activities which will be explored in this subproject, please see Annex C., Technical Interventions for Agricultural Extension.

*/ See Part IV. A., Economic Analysis, for a discussion of the overall cost per beneficiary.

D. Administrative Feasibility

The administrative capability of the CTDA has not yet been developed to the point where it can effectively implement a large number of complex projects. This is to be expected of a relatively young organization. One of the major objectives of the overall Central Tunisia Rural Development (CTRD) project is to develop the institutional capability of the CTDA to perform as an effective channel and coordinator of development activities in Central Tunisia. The Area Development subproject (664-0312.1) particularly addresses the issue of developing a management capability within the CTDA. In fact, one component of the Area Development project involves the establishment of a CTDA administrative unit. Each of the CTRD subprojects will in turn contribute to improving the CTDA's administrative capability. The extension project will furnish assistance and training of CTDA staff to enhance the CTDA's capability to provide extension services to the rural people of Central Tunisia. As this and other related projects get underway, CTDA is expected to develop an administrative capability not only to implement the extension project but also to continue extension activities after U.S. funds have been disbursed. One reason for this optimism is that CTDA's current staff includes a number of capable energetic technicians. A second reason is that the rural population in Central Tunisia is favorably predisposed to receiving assistance from the CTDA.

It is important to note that this extension subproject is not only closely linked to other AID-funded CTDA subprojects but also provides a capability essential to the ultimate success of those other subprojects. Complementing the dryland subproject (664-0312.2) the extension service will test and spread improved dryland practices. In conjunction with consultants, the extension service will provide and spread technical irrigated agricultural practices which will ensure optimal use of irrigation infrastructure constructed under the irrigation project (664-0312.3) As the CTDA's primary contact with rural farmers, the extension service will help spread elementary health education in association with the potable water subproject (664-0312.7) and the expanded Rural Community Health project (664-296). Finally, in support of the Area Development subproject (664-0312.1) there will be a link between the extension service and the CTDA's planning unit which evaluates the CTDA's rural development activities.

This subproject will require the assignment of a CTDA Director of Agriculture. This person will be responsible to the President Director General (PDG) and will direct all agricultural activities of the CTDA. An American advisor will be assigned as a counterpart to help the Director of Agriculture develop programs and administrative systems for implementing agricultural projects. A position for the American advisor has already been identified and funded under the Area Development subproject (664-0312.1).

Two other positions are important in the development of this project. These are: (a) a Director of the ESSU and (b) a Director of Agricultural Extension. American counterparts will be assigned to each of these positions.

Authority for implementation of this subproject will flow from the Ministry of Agriculture (MOA) to the CTDA's PDG to the Director of Agriculture and hence to the various implementation services of the CTDA. All programs will be jointly approved by the Director of each unit and his/her American counterpart during the first three years of the subproject after which complete authority will lie with each unit's Director.

The existing CTDA extension service will provide the foundation for building the Agricultural Extension Service (AES). The present staff consists of 48 extension workers. A minimum of 10 additional extension personnel will be recruited during the project from a variety of institutes of agricultural training, such as: INAT (the National Institute of Agronomy of Tunisia), the Ecole Supérieure de Grandes Cultures at Le Kef, the Ecole Supérieure d'Economie et de Promotion Rural at Moghrane, the Ecole Supérieure d'Horticulture at Chott Mariem, and/or the Agricultural High School at Sidi Bouzid. These educational institutes provide students with training relevant to extension needs in Central Tunisia (see Annex C-2).

Additional technical training required by AES personnel for fieldwork will be provided through on-the-job training, short term training courses in Tunisia, and short term training abroad. Masters level training in the U.S.A. will be considered for specialists in the ESSU based on specific needs. Whenever CTDA agents are sent for long term training, three specific conditions will apply: (1) the agents will be replaced during their absence, (2) the agents will return to and work at the CTDA for a minimum of 5 years following training, and (3) the temporary replacements will be retained in the ESSU or assigned elsewhere in the CTDA.

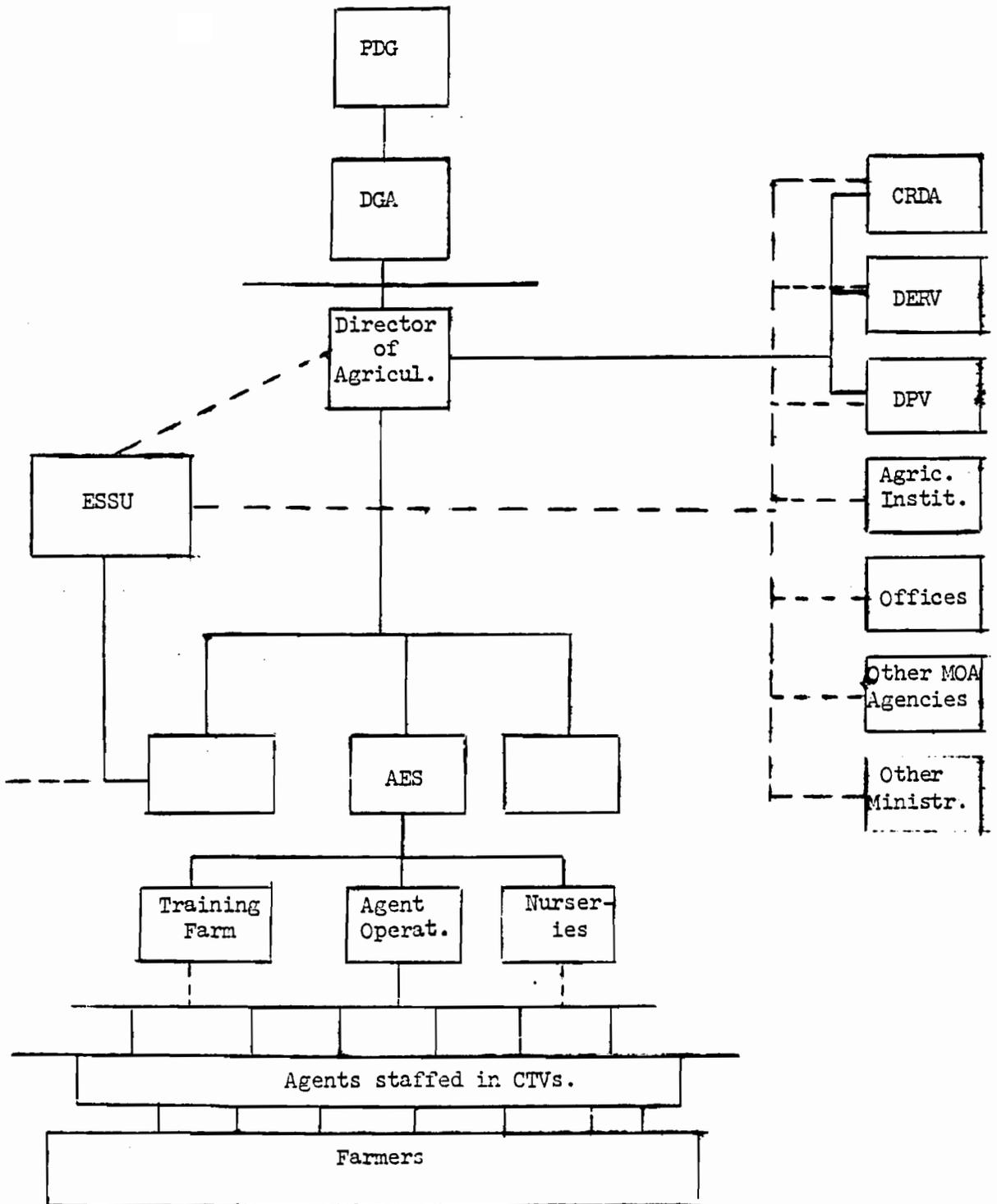
The field agents of the CTDA currently have sole responsibility for providing extension services to farmers on irrigated lands. Through the dryland farming systems project (664-0312.2) at Le Kef, a link has been established between cereals and forage crops research and the extension service of the CTDA in order to carry out dryland trial plantings in Central Tunisia of new varieties developed at Le Kef. When dryland packages have been developed and tested, the CTDA extension agents in collaboration with CRDA extension agents (commissariat Régional de Développement Agricole - see below) will introduce to small farmers of the area improved dryland practices aimed at increasing production yields. Initially, at least 8 CTDA extension agents will work with the dryland project. However, as improved technical packages are developed, other CTDA extension agents will be trained in the use and extension of these packages.

Currently, the mandate to extend dryland practices lies with the CRDA. A condition precedent to disbursements under this subproject will be that the CTDA/AES also be given such authority in Central Tunisia. There will be contact between the CTDA and the CRDA to maximize the benefits developed under the dryland project, to harmonize training of extension agents in Central Tunisia, and to improve the joint coverage of the two extension services so that the number of farmers (both dryland and irrigated) reached is maximized.

Within the CTDA, the ESSU will be primarily responsible for establishing and maintaining contact with the CRDA. Training sessions for CTDA agents will be opened to CRDA agents. The ESSU's development of audio-visual extension aids will be coordinated with the efforts of DERV (Direction de l'Enseignement, de la Recherche et de la Vulgarisation) which currently produces mass media extension materials for CRDA. In fact, this project will provide \$200,000 support to DERV in the form of audio-visual equipment and materials. It is anticipated that the value of support to be given to the CTDA by DERV over the life of the project will surpass \$200,000. This support will be in the form of audio-visual training aids for use in (1) training extension agents and (2) extending improved agricultural practices to rural farmers. Finally, ESSU will reinforce the current collaboration between the CTDA and CRDA concerning the planning and production of farmer information days. These information days are important not only for spreading agricultural knowledge but also for spreading other kinds of knowledge (such as health education, reforestation, etc.). The ESSU will establish close links with regional offices of other GOT Ministries active in rural development in Central Tunisia.

A chart of the linkages between CTDA and the GOT's Ministry of Agriculture (MOA) insofar as it applies to this project is shown in Table 1 below. Whereas the CTDA spreads over several Gouvernorats, each Gouvernorat has its own CRDA office. For more detail concerning these organizations, as well as other organizations responsible for training field agents, please see Annex G-3.

Table 1
Organizational Chart



E. Environmental Analysis

The Initial Environmental Examination (IEE), prepared for the PID submission to AID/W did not consider the use of pesticides in this subproject. It noted no significant projected environmental impacts and recommended that a negative threshold determination be made. The possibility that pesticides might be used in subproject areas became evident after refinements in subproject design, following approval of the PID. While such refinements do not include AID financing of pesticides, the use of such chemicals in subproject areas invokes specific requirements of AID regulations. Included in the regulations is a provision that permits subproject paper approval under the circumstances presented, before it is known which pesticides will be used, provided appropriate pesticide procedures are followed. These procedures include preparation of an Environmental Assessment (EA), of other than EPA-approved pesticides are to be used, before procurement or use of the pesticides is authorized.

As it is not known whether all of the pesticides used will be on the EPA-approved list, an EA will be conducted. It will take place early in the implementation phase of the subproject in conjunction with the detailed planning for the interventions, and will be a joint effort between U.S. consultant(s) and the Environmental Impact Unit of the Tunisian Ministry of Agriculture. Funds for the EA will be drawn from subproject evaluation money.

Three elements of the subproject may use pesticides: the training farm, the nurseries, and the demonstration plots. Although the EA will encompass all three, a condition precedent to disbursement of funds requiring that the EA be carried out and that the pesticides used be acceptable to AID, will be included in the subproject agreement only for the demonstration plots. The training farm and nurseries fall within the definition of research or limited field evaluation for which there is an exception allowed under the general requirements for pesticides. However, the exception specifies that the use must be under the direct supervision of project personnel, that toxicological and environmental data be supplied to protect research personnel and the environment, and that any crops treated must not be for human or animal consumption unless EPA or FAO/WHO standards for acceptable residuals are met. The subproject agreement will, therefore, include a covenant by which the GOT agrees to develop and execute a plan to meet these concerns.

V. FINANCIAL ANALYSIS AND PLAN

As this subproject aims at strengthening government sector services a true financial analysis in the sense of an examination of the long run financial liability of this activity is neither appropriate nor possible. The two institutions (ESSU and AES) to be established or improved during the AID assistance phase, at an approximate cost to the GOT of TD 1.8 million ((\$4.5 million equivalent) will depend on the Government budget for continued financing. It is anticipated that the recurring costs they require will be met from Title I (recurring and operating costs) of that annual budget. The following table summarizes the key items in this subproject to be financed by the GOT.

Table 2

ESTIMATED GOT EXPENDITURES
(000 Dinars)

	<u>YEAR I</u>	<u>YEAR II</u>	<u>YEAR III</u>	<u>YEAR IV</u>	<u>YEAR V</u>	<u>RECURRING</u>
	<u>TITLE II (INVESTMENT)</u>					
Agent Housing	40	20	20			
ESSU Building	15					
Transport	52					
(2) All Terrain	(20)					
(4) Trucks	(20)					
(2) Minibus	(12)					
Extension						
Training Farm	4	22	10	10		
Training	6	11	10	9	9	
Travel	(3)	(8)	(8)	(6)	(6)	
Workshops	(3)	(3)	(2)	(3)	(6)	
Nurseries	12	10	10	10	10	

Table 3

ESTIMATED GOT EXPENDITURES (continued)
(000 Dinars)

	<u>YEAR I</u>	<u>YEAR II</u>	<u>YEAR III</u>	<u>YEAR IV</u>	<u>YEAR V</u>	<u>RECURRING</u>
	<u>TITLE I (RECURRING)</u>					
Vehicle Maintenance and Operation	49	66	79	84	97	97
Vehicle Depreciation	14	19	24	29	34	34
Office Supplies	4	5	6	8	9	9
AES and ESSU Operational Costs	8	12	14	16	18	18
Staff (Increment)	130	150	175	190	210	210
CTDA	(125)	(143)	(165)	(177)	(195)	(195)
DERV	(5)	(7)	(10)	(13)	(15)	(15)
Training Farm						5
Office Equipment	20	2	2	2	2	
Training	6	11	10	9	9	9
Travel	(3)	(8)	(8)	(6)	(6)	(6)
Workshops	(3)	(3)	()	(3)	(3)	(3)

A covenant will be included in the project agreement to satisfy AID's concern that the innovations that it helps finance are continued so long as they are cost effective and their returns to the target group continue high enough relative to competing uses for funding. The administrative reorganization of extension activities in Central Tunisia will make it easier for the GOT to meet this covenant. As noted above some AES staff (48 persons) are already on CTDA rolls. The current budget provides for these agents plus ten more who will be added in the first year of the subproject. CTDA's CY 1980 budget also includes money for the ESSU core staff - four agricultural specialists, a health education expert, and a communications technician.

Funding for continuation of the DERV activities being improved through this subproject also will be covenanted by the Government of Tunisia. The DERV is an existing MOA unit that has been funded regularly by the Government. The equipment and training this subproject finances will improve the DERV's productivity, relevance and cost effectiveness, thereby giving it a competitive advantage over other potential Tunisian budget items in the future.

The nurseries (tree and vegetable) being established and improved through this subproject are the only components that eventually will be self-supporting. Initially they will receive Tunisian budget support and be an extension services resource. As they become firmly established, an increasing amount of the plant material (seed and seedlings) will be marketed. A comprehensive plan for their commercial operation will be developed by the AES before year three of the subproject. This plan will be implemented fully by year five, the completion date of AID assistance. Competitive bidding in accordance with the applicable Government of Tunisia and U.S. Government (A.I.D.) regulations will be used to assure prices paid for the commodities and services purchased are the lowest available from eligible sources, taking into consideration the standards of quality and reliability required to achieve the subproject purpose. Commodities will be purchased in Tunisia, the U.S., or Code 941 countries. Also eligible are certain shelf items available in Tunisia. The procurement of commodities and services, in accordance with A.I.D. Policy Determination 68, will be by the Government of Tunisia, acting either directly or through a contractor. AID financing will be through a letter of commitment (LC). There are three innovative components of the subproject that will be funded by the Government but co-financed by A.I.D. through a modified form of fixed amount reimbursement. They are:

- a) formal in-country training of extension agents, that incorporates interpersonal relationship, cultural training and "hands-on" learning of communications techniques with upgrading in technical agricultural skills;
- b) farmer demonstration plots incorporated into the day to day extension work; and
- c) farmer information days, which will expose farmers to new technologies and bring them into direct contact with agricultural researchers, administrators and extension agents thus facilitating the two way communications flow that is one of the purposes of the subproject.

The estimated cost of these components appears in annex B.3. The reimbursement amounts have been set at thirty, forty-five, and forty percent respectively for each item. At semi-annual intervals the Government of Tunisia will apply for reimbursement. It will certify that activities related to these components have occurred, and present an accounting of the costs incurred. A reimbursement for the amount will be processed after administrative approval of the request by the project officer. The amounts fixed for subsequent reimbursement will be subject to adjustments if actual costs have diverged widely from the estimates, however, such adjustments will not result in any increase in the percentage of the cost for which reimbursement will be made.

VI. IMPLEMENTATION PLAN

1. Prior Action

- a. Subproject Paper approved
- b. Subproject authorized
- c. Subproject Agreement amendment negotiated and signed
- d. Contract negotiated and signed by December 31, 1980
- e. GOT addresses Sub Project PP's

2. January - March, 1981

- a. Contractor - 2PM TDY for planning and organizational purposes
- b. Contractor - recruitment of 2 resident technicians
- c. CTDA - mobilization of staff
- d. CTDA - addresses sub-project CP's
- e. CP's met by March 31, 1981
- f. CTDA begins developing procurement plan in consultation with contractor TDY consultants
- g. CTDA begins developing plan for construction
- h. MOA orders vehicles

3. April - June, 1981

- a. Contractor resident advisors arrive by April 15
- b. CTDA complete plans for construction by June 30
- c. CTDA begins planning for demonstration plots
- d. CTDA begins planning for Farmer Information Days
- e. CTDA begins planning for nurseries
- f. Develop training program and make arrangements for 3 short term participants
- g. Select 2 Master's candidates
- h. Finish equipment procurement plan and specifications

4. July - September, 1981

- a. CTDA begins development of in-country training programs
- b. Three short term participants depart and return during period
- c. Two masters candidates depart for fall term
- d. Begin construction of 10 AES residences
- e. Finish plans for demonstration plots
- f. Finish plans for Farmer Days
- g. Initiate work on two vegetable nurseries
- h. Initiate plans for training farm
- i. Select one Master's candidate and develop training program

5. October - December, 1981
 - a. Finish construction 10 AES houses
 - b. Begin 100 demonstration plots
 - c. Hold 20 farmer days
 - d. Initiate work on 2 vegetable nurseries
 - e. Complete plans for in-country training program
 - f. Develop program for second group of short term trainees

6. January - March, 1982
 - a. Complete staffing of CIDA ESSU and AES achieved
 - b. Hold one in-country training course (15 students 3 mos)
 - c. Second MS candidate departs
 - d. Begin construction 10 AES houses
 - e. Conduct 30 farmer days
 - f. Complete plans for nursery program
 - g. Initiate work on 2 vegetable nurseries
 - h. Initiate work on training farm infrastructure
 - i. Select and process third MSCandidate

7. April - June, 1982
 - a. Second group of 3 participants for short term training departs and returns
 - b. Complete construction 10 AES houses.
 - c. Hold 30 farmer days
 - d. Initiate work on arboriculture nursery
 - e. Begin plans for first project evaluation

8. July - September, 1982
 - a. Develop second in-vountry training program
 - b. Fourth MS candidate departs
 - c. Conduct first work shop
 - d. Initiate work on 200 demonstration plots
 - e. Conduct 30 farmer days
 - f. Develop plans for third group of short term participants

9. October - December, 1982
 - a. Conduct second in-country training course (15 students 3 mos)
 - b. Conduct 30 farmer days
 - c. Conduct project evaluation
 - d. Complete infrastructure of training farm

10. January - March, 1983
 - a. Third group of short term participants departs and returns
 - b. Conduct 30 farmer days
 - c. Initiate development of resource materials on training farm

11. April - June, 1983
 - a. Conduct 30 farmer days

12. July - September, 1983
 - a. Develop plans for third in-country training program
 - b. Conduct second work shop
 - c. Conduct 30 farmer days
 - e. Commence work on 400 demonstration plots
 - f. Develop plans for Fourth group and short term participants

13. October - December, 1983
 - a. Conduct third in-country training program
 - b. 2 MS candidates return
 - c. Conduct 30 farmer days
 - d. Begin planning for phase-out of American advisors

14. January - March, 1984
 - a. Fourth group of short term participants departs and returns
 - b. Conduct 30 farmer days
 - c. Complete plans for phase-out of American advisors

15. April - June, 1984
 - a. Resident advisors depart
 - b. One MS candidate returns
 - c. Conduct 30 farmer days

16. July - September, 1984
 - a. Develop plans for fourth in-country training program
 - b. Conduct workshop
 - c. Place last commodity orders
 - d. Initiate 400 demonstration plots
 - e. Conduct 30 farmer days

17. October - December, 1984
 - a. Conduct Fourth in-country training program
 - b. Fourth MS candidate returns
 - c. Conduct 30 farmer days

18. January - March, 1985
 - a. Conduct 30 farmer days

19. April - June, 1985

- a. Conduct 30 farmer days
- b. Initiate plans for final project evaluation

20. July - September, 1985

- a. Conduct 30 farmer days
- b. Conduct project evaluation

VII. EVALUATION PLAN

A. General

The evaluation plan for this subproject will be part of the overall CTRD project evaluation currently under preparation. Since the CTDA will have primary responsibility for the day-to-day management of the CTRD evaluation system and supporting data system, responsibility for design of these systems has been assigned to the CTDA Evaluation and Planning Unit (EPU) assisted by the University of Wisconsin and Cornell University.

CTRD project evaluation will be conducted at three levels:

- (1) Achievement of CTRD project goals
- (2) Achievement of CTRD subproject purposes
- (3) Adequacy of subproject inputs and outputs

The evaluation plan for this subproject will be concerned only with (2) and (3) above. It is expected, however, that the evaluation process will be concerned with the links between subproject outputs and the achievements of subproject purpose and between achievement of subproject purpose and achievement of overall project goals. The evaluation process will also be concerned with linkages between subprojects, i.e. how the outputs of one subproject may contribute toward achieving the purpose of another subproject.

B. Responsibilities

The CTRD project evaluation system is being designed with two different, although related, objectives in mind:

(1) Provide feedback on CTRD program implementation (including both AID-funded and non-AID funded activities) which will help CTDA perform more effectively its regional planning and CTRD program management functions.

(2) Provide the GOT and AID with information on the implementation status and effectiveness of the CTRD program including its impact on specific target groups as well as on the overall development of the CTRD project area.

In order to meet the above objectives two types of evaluation will be conducted:

a. On-going evaluation or monitoring focusing on key implementation issues.

b. Ex-post evaluation following completion of project implementation to assess overall impact on the region.

The CTDA will be responsible for collecting all the data (needed to meet CTRD project/subproject evaluation requirements) generated within the CTRD project area and, as appropriate, within the broader Central Tunisia region, whether these data are generated by the CTDA organizations operating under a contractual relationship to CTDA or agencies with which CTDA only has a coordinating relationship. The CTDA's EPU, assisted by the University of Wisconsin and Cornell University will be responsible for establishing and

managing an information system which will centralize the processing, storage, retrieval and analysis of these data and for preparing periodic (at least annual) evaluation reports as required to meet CTDA's regional planning and management needs. Actual collection of subproject monitoring data, however, will be the responsibility of the implementing technical unit of CTDA (the AES and ESSU, in the case of this subproject) which will transmit the data to the EPU. In addition, the EPU will be responsible for obtaining appropriate data from other agencies which are responsible for implementing subproject or portions thereof. In the case of this subproject, this means that the EPU (with ESSU assistance as appropriate) will collect data from CRDA's OEP etc. on their extension activities.

While the CTDA will be responsible for management of the Central Tunisia-based information and evaluation systems, it will be accountable to the Ministry of Agriculture (the overseeing ministry) for its performance in managing and/or monitoring the CTRD program. More specifically, the Ministry's Director of Planning will be responsible for insuring that the continuous CTRD evaluation process is carried out effectively and for undertaking the two major (ex-post) evaluations scheduled to coincide with Evaluation Seminars in year 3 and 5 of subproject implementation. He will be assisted in that task by a joint GOT/AID evaluation committee (which he will chair) and by Tunisian and US consultants as needed.

C. Data Requirements

The data requirements for the evaluation exercise are divided into three types.

1. Baseline Data. Accurate baseline data on the farming, social, and economic status of the target population will be necessary to measure the effects and/or the impact of the project.

Much of this data already exists and will be obtained from the CTFA (MOA), MOH, CNEA, and National Office of Family Planning. Additional information will be obtained by requesting the Direction de la Planification, des Statistiques, et des Analyses Economiques (MOA) to incorporate delegation-level data gathering into their annual agricultural survey of the country.

2. Continuous or Monitoring Data. This type of data includes financial expenditures, subproject acquisitions (material and human), and physical outputs of the subproject. Financial data will be obtained from the subproject accounting unit on a regular basis (quarterly) and will be compared with planned expenditures and planned execution in the subproject budget and implementation plan. Information on physical inputs, outputs, and some of the immediate effects will be obtained through a monitoring information system with data inputs provided by the field extension agents. The availability of this type of data will allow comparison of actual input activities and output with the original plan and identify potential implementation problems requiring corrective action.

3. Survey Data. These will include:

- a. Agricultural production, hectares, cultivated, yield per hectare
- b. Income level
- c. Living conditions (infrastructure)
- d. Land use
- e. Rural resident receptivity to general information sessions
- f. Local adaptation of agricultural research findings
- g. Employment of family members.

These will be obtained from: (1) the monitoring information system; (2) regular reporting systems; (3) observation; and (4) special sample surveys.

This approach to the evaluation of the extension subproject will help identify problems at an early stage and allow for corrective action to be taken during the life of the project. There are long-term aspects of the subproject which will not be measured in the short run; e.g., the initiation of effective feedback from the farmers to the research institutes after research findings have been implemented at the farm level. Nonetheless, established communication links can be examined.

In conducting the two ex-post evaluations, the evaluating team will use baseline data, monitoring information, and survey data. The evaluation must attempt to answer a wide variety of questions. Preliminary concentration should rest with the following areas:

- a. Effectiveness of working with farmer groups or individuals
 - i. Farmer receptivity/preference
 - ii. Working with women (number)
- b. Effectiveness of farmer information days
- c. Effectiveness of training given by extension agents to farmers to adopt innovations and increase production and income levels
- d. Effectiveness of farm plans developed with the assistance of the extension agent in increasing output and improving family diets
- e. Effectiveness of demonstration plots in instituting new agricultural practices and increasing income levels
- f. Effectiveness of extension agents in convincing farmers to:
 - i. Use credit
 - ii. Implement simple cost accounting system
 - iii. Seek out assistance when needed
 - iv. Provide feedback.

2. Two-way link between research findings and implementation at the farm level.
 - a. ESSU' ability to make appropriate recommendations for extension packages based on research findings
 - b. Effectiveness of trial plots and demonstration plots in convincing farmers of applicability of new farming techniques
 - c. Degree of local adaptability of research findings
 - d. Extent of feedback after farmer utilization of new techniques to the research institutes responsible for the recommendation.
3. Coordination of extension services within Central Tunisia.
 - a. Extent of collaboration between government service organizations, specialized agencies, and development projects providing extension services
 - b. Effect of ESSU communication unit in aggregating and disseminating relevant information to all field agents in Central Tunisia
 - c. Extent of collaboration outside of the field of agriculture, e.g. health, home economics.
4. Potential for the Extension Service to address rural needs, aside from agriculture.
5. Impact of improving communication linkages between research findings of institutes and farmers' agricultural production techniques on increasing income levels and improving the quality of life for the rural resident.

By exploring these areas, subproject effects and impacts should be revealed. This will indicate principally the agricultural changes resulting from project interventions. An overall evaluation of the subproject then can be derived.

MISSING PAGE
NO. 32

VIII. CONDITIONS PRECEDENT AND COVENANTS

A. Past Country Performance

This subproject will be part of the Central Tunisia Rural Development (CTRD) Project. While Tunisia compliance with the conditions precedent and covenants of the CTRD project has been slow, it is difficult to identify any specific item not being met.

B. Conditions Precedent

1. Conditions Precedent to Initial Disbursement

(a) That clear grant of authority to CTDA to authorize it to provide extension services to dryland farmers in the Central Tunisia Development Project area in a manner analogous to existing grants of authority to CTDA for irrigated land farmers.

(b) The creation of the position of Director of Agriculture in the CTDA, and the appointment of a qualified individual to that position.

2. Condition Precedent to Disbursement for Commodities or Training for ESSU Staff

Prior to AID providing financing for commodities or training for ESSU, the CTDA will establish the Extension Services Support Unit and create the positions of a director and six senior technical specialist positions in (i) agronomy, (ii) animal production and range management, (iii) water resources management, (iv) agricultural economics, (v) health and sanitary education and (vi) communications, together with necessary supporting staff; and the appointment to these positions of qualified personnel without other major responsibilities.

3. Condition Precedent to Disbursement for Commodities or Technical Services for the Direction of Education, Research and Extension (DERV)

(a) The Government will provide evidence satisfactory to AID of an agreement between the DERV and CTDA about the method and extent of cooperation between the DERV and CTDA entities concerned with the subproject (i.e., ESSU and AES).

4. Condition Precedent to Disbursement for Technical Services

(a) Prior to AID providing financing for the technical services the Government will submit a contract, acceptable to AID, signed between the appropriate Government Agency and a U.S. university.

5. Condition Precedent to Disbursement for Demonstration Plots

Prior to AID providing financing for the demonstration plots, the Government shall cause to have completed in form and substance satisfactory to AID an assessment of the impact on the environment by the methods and materials to be used on those plots and to design the plans for those demonstration plots in accordance with the recommendations of the assessment, to the satisfaction of AID.

C. Covenants

1. The Government, through CTDA, ESSU and AES, will continue a regular pattern of farm demonstrations, farmer information days and added extension agent activities as well as extension agent training after the period of assistance of this subproject, so long as such activities are cost effective and socially useful.

2. In implementing the subproject the Government shall agree to develop and execute plans to (1) enhance the impact of outreach activities on women in the target group and (b) increase the opportunity for women as extension agents within the AES.

3. The Government will covenant to assure the availability of necessary production elements, such as credit, fertilizer and improved seed varieties.

4. The Government will covenant to execute the recommendations of the environmental assessment described in Section 5. 4. 3(e) above for the demonstration plots and to develop and execute a plan for the training farm and the nurseries to require direct supervision for the use of pesticides; to obtain toxicological and environmental data to protect research personnel and the environment, and to prohibit the human or animal consumption of crops grown on the training farm or the nurseries unless U.S. Environmental Protection Agency and Food and Agriculture Organization/World Health Organization pesticide standards are met thereon.

ACTION: AID-8

DEPARTMENT OF STATE

ANNEX A.1

INFO: AMB, DCM,
ECON, CHRON/12

TELEGRAM

P 091432Z FEB 80
FM SECSTATE WASHDC
TO AMEMBASSY TUNIS PRIORITY 7850
BT
UNCLAS STATE 036098

AIDAC

E.O. 12065: N/A

TAGS:

SUBJECT: CENTRAL TUNISIA RURAL DEVELOPMENT-RURAL EXTENSION
AND OUTREACH 0312.9

THE NEAC MET JANUARY 24 AND APPROVED THE SUBJECT PID WITH THE FOLLOWING ISSUES TO BE TAKEN INTO CONSIDERATION IN THE PROJECT PAPER PREPARATION.

1. THE PROJECT PROPOSES TO LINK THE EXTENSION SERVICES SUPPORT UNIT (ESSU) AND THE AGRICULTURE EXTENSION SERVICE (AES) TOGETHER FOR COMMUNICATION, FEEDBACK INFORMATION AND SUPPORT PURPOSES. THE PP SHOULD CLEARLY SET FORTH THE FUNCTIONAL RESPONSIBILITIES OF EACH OF THESE TWO ORGANIZATIONS AND EXPLAIN MORE FULLY THAN WAS COVERED IN THE PID WHY BOTH UNITS ARE REQUIRED TO SUPPORT THIS REGIONAL EXTENSION PROGRAM.

2. THE NEAC WAS CONCERNED ABOUT IMPACT ON BUDGET OF SUBSTANTIAL INCREASE IN EXTENSION STAFF. WILL THE PROJECT STAFF (ESSU AND AES) BE RECRUITED FROM EXISTING SERVICES SUCH AS THE DEPARTMENT OF VEGETATIVE SERVICES (DPU) OR FROM OTHER SOURCES? WE SUGGEST THAT IN THE PREPARATION OF THE PP THAT THE SOURCES OF RECRUITMENT BE INVESTIGATED AND A PLAN BE INCLUDED TO ASSURE ADEQUACY

AND COMPETENCY OF STAFF.

3. THE NEAC RECOMMENDED THAT THE PP CONTAIN A COMPREHENSIVE ANALYSIS OF THE ACCEPTABILITY OF THE PROPOSED ACTIVITIES TO THE TARGET GROUP AND IDENTIFICATION OF PRODUCTION CONSTRAINTS WHICH CAN BE REALISTICALLY CHANGED BY EXTENSION ACTIVITIES IN ORDER TO UTILIZE THIS INFORMATION IN THE PROJECT DESIGN. IT IS ASSUMED THAT THE SOCIAL SOUNDNESS ANALYSIS WILL BE BASED UPON THE LARGE VOLUME OF SOCIO-ECONOMIC STUDIES ALREADY PREPARED. ALSO THE PID IS INADEQUATE ON THE SUBJECT OF INTEGRATION OF WOMEN IN EXTENSION PROGRAM DEVELOPMENT. NEAC REQUESTS THAT PP CONTAIN INFORMATION ON THE ROLE OF WOMEN IN THE ECONOMIC LIFE OF THE TARGET AREA.

A) WHAT TYPE OF TRAINING IS TO BE DEVELOPED FOR WOMEN IN ORDER TO ACTIVELY EXPAND THE AVAILABLE POOL OF WOMEN EXTENSION AGENTS?

Best Available Document

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B) WHAT PROVISIONS WILL BE MADE TO STAFF THE ESSU AND AES WITH INDIVIDUALS WHO ARE COGNIZANT OF ROLE OF WOMEN IN THE TARGETED FARMS AND WHO WILL BE SENSITIVE TO THEIR PARTICIPATION IN THE DESIGN OF COMMUNITY EDUCATION PROGRAMS, MASS MEDIA CAMPAIGNS AND LOCAL SCHOOL PROJECTS?

4. IN PREPARATION OF THE PP, NEAC REQUESTS THAT USAID REVIEW THE EXPERIENCE OF THE NATIONAL EXTENSION SERVICE AND AID ASSISTED EXTENSION ACTIVITIES SUCH AS LIVESTOCK PROJECT (0293). THE PP SHOULD STATE HOW THE OTHER SUB-PROJECTS OF THE CTRD RELATE TO THIS PARTICULAR PROJECT. ALSO THE RELATIONSHIP OF THIS PROJECT TO OTHER HONOR ACTIVITIES IN THE CTRD AREA?

5. ADVISE IF ANY OTHER ASSISTANCE IS REQUIRED BY USAID/T IN PREPARATION OF PP IN ADDITION TO THAT FROM UNIVERSITY OF WISCONSIN INPUT FOR THE EXTENSION PROJECT AND LIVESTOCK TECHNICIANS FROM PROJECT -0293.

6. EXCEPT FOR THE ABOVE CAVEATS THE MISSION DIRECTOR IS AUTHORIZED TO PROCEED WITH PP PREPARATION AND PROJECT AUTHORIZATION. WE WOULD APPRECIATE COPIES OF THE PP AS SOON AS THEY ARE AVAILABLE. CHRISTOPHER

-T

#6098

LE Ministre de l'Agriculture

A

Monsieur le Ministre du Plan et des Finances

OBJET : Coopération Tuniso-Américaine -

L'Accord de Prêt et de Don passé entre le Gouvernement Tunisien et les Etats Unis d'Amérique le 10 Mai 1970 et relatif au Développement Rural de la Tunisie Centrale prévoit la réalisation d'un sous-projet "Vulgarisation Rurale en Tunisie Centrale".

Les discussions entre la partie Tunisienne et la partie Américaine et l'étude réalisée par l'Université de Wisconsin ont permis d'élaborer un projet qui répond aux soucis des agriculteurs de la Tunisie Centrale.

L'implémentation de ce projet qui se fera par une Cellule de Vulgarisation implantée dans l'Office de Développement de la Tunisie Centrale se fera au niveau de l'agriculteur grâce aux parcelles de démonstration, aux fermes pilotes, aux journées d'information et aux méthodes audio-visuelles. Le projet comprend aussi la formation de cadres tunisiens de maîtrise et d'exécution.

La Participation Américaine à ce projet est évaluée à 2 505 000 Dollars E.U. à financer sur la partie "Prêt" dont les conditions semblent être favorables pour un tel projet.

.../...

BEST AVAILABLE DOCUMENT

La contre partie Tunisienne représentée plus particulièrement par les installations et les salaires des agents s'élève à 1 785 400 Dinars dont la première tranche pour 1961 a été prise en considération dans le budget de l'Office de Développement de la Tunisie Contrôlé qui a été discuté avec les services compétents du Ministère du Plan et des Finances.

Compte tenu des délais prévus pour la signature de l'Amendement relatif à ce sous-projet et sauf objection de votre part, je vous saurais gré des dispositions que vous voudriez bien faire prendre pour saisir officiellement le parti Américain de notre requête.

Le Ministre de l'Agriculture

L. BEN OSMAN

U.S. DOLLAR BUDGET

	<u>1st year</u>	<u>2nd year</u>	<u>3rd year</u>	<u>4th year</u>	<u>5th year</u>	<u>Total</u>
1. <u>TRAINING</u>						
<u>In-country</u>	16,000	16,000	14,000	14,000		60,000
Abroad: Short-term (14 staff - 12 CTDA, 2 DERV)		20,000	30,000	25,000	25,000	100,000
Masters (4 staff)	40,000	60,000	100,000	50,000	25,000	275,000
TOTAL	56,000	96,000	144,000	89,000	50,000	435,000
2. <u>TECHNICAL ASSISTANCE</u>						
a. <u>Foreign Personnel</u>						
6 man years resident (2)	180,000	190,000	200,000			570,000
30 PM short-term	30,000	68,000	62,000	70,000	120,000	350,000
b. <u>Support Services</u>						
2 secretaries)	10,000	10,000	10,000	10,000	10,000	50,000
1 translator)						
TOTAL	220,000	268,000	272,000	80,000	130,000	970,000
3. <u>COMMODITIES</u>						
a. <u>Transportation</u>						
Sub-compact cars (15 AES - 5 ESSU)	160,000					160,000
Mopeds (30)	23,000					23,000
b. <u>Agricultural Equipment and Supplies</u>						
<u>Demonstration Plots</u>						
Tractors	130,000					130,000
Agric. Field Equipment	75,000					75,000
<u>Nurseries</u>						
Agric. Field Equipment	91,000	30,000	20,000	10,000		151,000
Agric. Supplies	24,000	10,000	10,000	10,000	10,000	64,000
<u>Training Farm</u>						
Agric. Field Equipment	52,500	50,000				102,500
Agric. Supplies	5,000	5,000	5,000	2,500		17,500

ANNEX B. 1.

	<u>1st year</u>	<u>2nd year</u>	<u>3rd year</u>	<u>4th year</u>	<u>5th year</u>	<u>Total</u>
3. <u>COMMODITIES</u> (continued)						
c. <u>Audio Visual Equipment</u>						
<u>ESSU</u>	40,000	10,000	10,000	10,000	10,000	80,000
<u>DERV</u>		200,000				200,000
TOTAL	<u>600,500</u>	<u>305,000</u>	<u>45,000</u>	<u>32,000</u>	<u>20,000</u>	<u>1,003,000</u>
4. <u>OTHER</u>						
a. <u>Farmer Information Days</u> (500 @ \$250)	7,000	12,000	26,000	40,000	40,000	125,000
b. <u>Demonstration Plots</u> (1100 @ \$200)	20,000	40,000	80,000	80,000		220,000
c. <u>Young Farmers Club</u>		500	500	500	500	2,000
d. <u>Project Evaluation Seminar</u>			16,500		16,500	33,000
e. <u>Miscellaneous</u>						<u>17,000</u>
TOTAL	<u>27,000</u>	<u>52,500</u>	<u>123,000</u>	<u>120,500</u>	<u>57,000</u>	<u>397,000</u>
						<u><u>2,805,000</u></u>
						=====

Note: Costs estimated are average and include an inflation rate of approximately 10 percent.

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TUNISIAN DINAR BUDGET

	<u>1st year</u>	<u>2nd year</u>	<u>3rd year</u>	<u>4th year</u>	<u>5th year</u>	<u>TOTAL</u>
1. <u>TRAINING</u>						
Workshop (2 weeks) 12 days, 84 participants	2,500	2,500	2,500	2,500	2,500	12,500
short term travel		6,000	6,000	6,000	6,000	24,000
M.S. travel	<u>3,000</u>	<u>1,500</u>	<u>1,500</u>			<u>6,000</u>
TOTAL	<u>5,500</u>	<u>10,000</u>	<u>10,000</u>	<u>8,500</u>	<u>8,500</u>	<u>42,500</u>
2. <u>CONSTRUCTION</u>						
House Extension agents on land (20)	40,000	20,000	20,000			80,000
ESSU	<u>15,000</u>					<u>15,000</u>
TOTAL	<u>55,000</u>	<u>20,000</u>	<u>20,000</u>			<u>95,000</u>
3. <u>OFFICE EQUIPMENT AND SUPPLIES</u>						
Equipment	20,000	2,000	2,000	2,000	2,000	28,000
Supplies	4,000	5,000	6,000	8,000	9,000	32,000
Operating expenses (utilities, rent, maintenance, etc.)	<u>8,000</u>	<u>12,000</u>	<u>14,000</u>	<u>16,000</u>	<u>18,000</u>	<u>68,000</u>
TOTAL	<u>32,000</u>	<u>19,000</u>	<u>22,000</u>	<u>26,000</u>	<u>29,000</u>	<u>128,000</u>
4. <u>TRANSPORTATION</u>						
4 wheel drive (2)	20,000					20,000
Trucks (4)	20,000					20,000
Minibus (2)	<u>12,000</u>					<u>12,000</u>
TOTAL	<u>52,000</u>					<u>52,000</u>
5. <u>MAINTENANCE OPERATION</u>						
Small cars	25,000	35,000	40,000	45,000	50,000	195,000
Minibus	7,000	8,000	9,000	10,000	11,000	45,000
Trucks	7,000	8,000	9,000	10,000	11,000	45,000
Tractors	<u>10,000</u>	<u>15,000</u>	<u>21,000</u>	<u>24,000</u>	<u>25,000</u>	<u>95,000</u>
TOTAL	<u>49,000</u>	<u>66,000</u>	<u>79,000</u>	<u>89,000</u>	<u>97,000</u>	<u>380,000</u>
Vehicle replacement (depreciation)	14,000	19,000	24,000	29,000	34,000	120,000

ANNEX B. 2.

	<u>1st year</u>	<u>2nd year</u>	<u>3rd year</u>	<u>4th year</u>	<u>5th year</u>	<u>TOTAL</u>
6. <u>STAFF</u>						
<u>ESSU (5)</u>	15,000	20,000	25,000	30,000	35,000	125,000
<u>AES (58)</u>	80,000	90,000	100,000	110,000	110,000	490,000
<u>Support Staff</u>	30,000	35,000	40,000	45,000	50,000	200,000
<u>DERV</u>	5,000	7,000	10,000	13,000	15,000	50,000
<u>TOTAL</u>	<u>130,000</u>	<u>150,000</u>	<u>175,000</u>	<u>190,000</u>	<u>210,000</u>	<u>865,000</u>
7. <u>EXTENSION TRAINING FARM</u>	4,000	22,000	10,000	10,000	5,000	51,000
8. <u>NURSERIES</u>	11,900	10,000	10,000	10,000	10,000	<u>51,900</u>
						GRAND TOTALTD 1,785,400 =====

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ANNEX B. 3. a.

ESTIMATED COST FOR FORMAL IN-COUNTRY TRAINING
PROGRAMS

	<u>TD</u>	
Course Development	50	
Course Materials	25	
Trainers	50	
Facilities (including classrooms, board and room)	150	
Agent Salaries	150	
Transportation	20	
	<u> </u>	
		445 per student/month
X 3 months/course	1,335	
X 4 courses	5,340	
X 15 students/course	80,100	
US dollar Equivalent	<u>200,250</u>	
GOT Contribution	<u>140,250</u>	(2,337/student)
US Contribution	<u>60,000</u>	(\$1000/student)

ANNEX B. 3. b.

EXAMPLE BUDGET FOR 1/2 HECTARE DEMONSTRATION
FOR IRRIGATED AND DRYLAND PLOTS

<u>IRRIGATED PLOTS</u>	<u>TD</u>	
Land	45	
Labor	75	
Seed (plants)	20	
Fertilizer	10	
Insecticide	5	
Hand Tools	15	
Land Preparation	6	
Land Treatment	25	
Water	16	
Technical Assistance	<u>30</u>	
Total	247	= US\$617

<u>DRYLAND PLOTS</u>		
Land	15	
Labor	15	
Seed	5	
Fertilizer	4	
Insecticide	2	
Hand Tools	7	
Land Preparation	5	
Land Treatment	15	
Technical Assistance	30	
Machine Rental	<u>12</u>	
Total	110	= US\$275

Average Cost per Plot	<u>\$446</u>
Farmer Contribution	\$181
GOT Contribution	\$ 65
US Contribution	\$200

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ANNEX B. 3. c.

EXAMPLE BUDGET FOR
FARMER INFORMATION DAYS

	<u>TD</u>
1. Facilities	40
2. Trainers	20
3. Training Aids	20
4. Handout Materials	20
5. Transportaion of Farmers	100
6. Transportation and Per Diem of Visiting Trainers	30
7. Miscellaneous	<u>20</u>
Total	TD250
US Dollar Equivalent	\$625
GOT Contribution	\$375
US Contribution	\$250

ANNEX B. 3. d.

ESTIMATED BUDGET - TRAINING FARM

	<u>TD</u>
1. Rent, construction and treatment for 15 hectares and facilities	22,000
2. Hand Tools	16,000
3. Equipment	25,000
4. Fertilizer	4,000
5. Seeds (plants)	3,000
6. Labor	5,000
7. Truck	4,000
8. Pesticides	4,000
9. Personnel transport	5,000
10. Miscellaneous (supplies and materials)	<u>16,000</u>
Total	104,000

US Dollar Equivalent \$260,000

GOT Contribution \$140,000

US Contribution \$120,000

ANNEX B. 3. e.

ESTIMATED BUDGET FOR NURSERIES

	<u>One Vegetable Nursery for five years</u>	<u>One Arboriculture Nursery for five years</u>
1. Land	TD 600	TD 600
2. Field Machinery	4,000	8,000
3. Plant Materials	1,000	9,000
4. Management	10,000	10,000
5. Technical Assistance	5,000	5,000
6. Fertilizer	700	1,000
7. Pesticides	300	300
8. Herbicides	100	300
9. Hand Tools	1,000	2,000
10. Seedbed Preparation	500	500
11. Land Treatment	800	800
12. Labor	24,700	25,000
13. Miscellaneous	<u>1,300</u>	<u>2,000</u>
	TD50,000 x 8 = 400,000	TD64,500
US Dollar Equivalent	\$1,000,000	\$161,250
GOT Contribution \$105,000 x 8 =	\$ 840,000	\$106,250
US Contribution \$ 20,000 x 8 =	\$ 160,000	\$ 55,000

EQUIPMENT LIST - ESSU

1. Slide sets complete with synchronized sound tapes
Broadcast quality tape recordings
Cells for overhead projection
Camera-ready copy for offset printing
2. High quality mimeograph machine.
3. An electric mimeograph stencil cutter.
4. Two typewriters - one for French - one Arabic.
These should be electric, if possible. The one for French should have variable space letters so the typing approximates printing. Definitely not with an italic type face. These would be used to cut stencils and to prepare material for offset printing. Carbon ribbon models are preferred if carbon ribbon is available.
5. Varitype waxing machine
This machine is simple, foolproof and greatly simplifies the work of preparing layouts for offset printing. It can also be used for putting lettering, etc. on posters.
6. A copy machine which can also be used for making overhead transparencies.
7. 35 mm camera and flash unit.
8. Copy stand for shooting slides of pictures and graphic art.
9. Three slide projectors for use by agents.
10. Three cassette tape recorders to be used with synchronized slide presentations.
11. Two overhead projectors.
12. One opaque projector - to be used mainly as an aid in producing charts.
13. Portable tape recorder - broadcast quality.
14. Electric tape recorder - broadcast quality - to be used for initial recording of tape for slide shows, for making radio recordings and for editing radio tapes.
15. Movie projector.
16. Miscellaneous drafting tables, art tools, press-down type, etc.
17. Supplies: Film, poster board, drawing paper, etc.
18. Miscellaneous.

Photo Equipment

- 1 ea Movie camera similar or equal to Eclais 16 mm
- 1 ea Movie camera with feature for single frame and attachments for macrofilming
- 1 ea Blimp - Lenses 10 mm, 26 mm, 150 mm, 16 mm with attachments
- 2 ea Batteries for flood light and 2 ea chargers
- 2 ea Film clips
- 1 ea Charging bag

Lighting Equipment

Quartz Lighting

- 1 ea Flood light projector

Sound Equipment

- 1 ea Tape recorder similar or equal to NIAGRA and 20 ea tapes P 13
- 4 ea Dynamic type microfilms
- 1 ea Mike boom

Editing Equipment

- 1 ea Editing
- 12 ea Film spools
- 1 ea Motorized film editor
- 1 ea Film projector

TECHNICAL INTERVENTIONS

The technology employed in this project will consist of both agricultural and communication technology. Already much experience has been gained from the FAO-SIDA project in Sidi Bouzid in the adaptation of vegetable, fruits and forage crops to irrigated agriculture in certain regions of Central Tunisia. Most of the work at INRAT research stations has focused on production systems in irrigated areas. But dryland agriculture in the area is more of a problem.

Two technical problems remain for both irrigated and dryland farming: (1) the development of appropriate communication techniques to determine the needs and the potential of farming operations in Central Tunisia; (2) to determine the most acceptable means of introducing a new technology to farmers who have not yet been convinced of its utility in rainfed and irrigated areas. The adaptation of new technologies involves testing of the new varieties and cultivation techniques on a controlled basis. After careful analysis of the results, the new technology will be packaged and delivered to the farmer so that it makes sound economic and social sense.

The agricultural technology for the irrigated lands exists, but the delivery of new techniques to the farmer must be improved. There seems to be a growing awareness that "bribing" farmers to adopt a new technology will not lead to continued use after the gifts and other supports end. It is the objective of this project to refine the transfer of technology from prior experiences and research findings to implementation at the farm level on a permanent basis.

An important innovation that this sub-project will introduce to agricultural extension work in Tunisia is in the style and the attention that will be given to interpersonal relations. The training that will be given to the extension and outreach workers to increase their technical capability will have been redesigned to give equal weight to considerations such as the social distance between outreach worker and farmer, and barriers to communication these create.

Agricultural technology on the rainfed lands of the region is of even more importance than that for irrigated lands, but it is much less developed. Most evaluations of dryland and rangeland management technologies indicate that there are significant technological gaps. The grain research program at El Kef has been established to address this inadequacy. Extension services rendered to dryland farming will depend to a certain extent on technological packages developed at El Kef. Nonetheless, the Missouri report and assessments (FAO, CNEA) have identified certain methods for improved soil conservation and increased yields from dryland areas which could be tested and adapted to the region.

The risks in failure in the dryland area are much higher and income levels are much lower, so resistance to change is much greater. Therefore, the communication techniques become even more critical. The initial phase of working in dryland agriculture will involve testing new technologies with farmers who also have irrigated land. Work should be undertaken on a limited scale with trial plots. The goal will be to carefully assess the profitability of investing in a new technology before it is introduced in phase II of the project.

Secondary diffusion of new technologies will be attempted whenever possible. Adaptation of new technology to local conditions will be done with the assistance of the omdah or the family head. This experimentation and learning about the reasons for successes and failures will help assure that once the agent leaves the area, the farmers themselves will take his place. This sort of community learning process is very time-consuming and demands a commitment and an interest on the part of both the farmers and the agents.

The communication equipment used in diffusing information to field agents will be simple and easily adaptable for rural use. Field agents will be trained in the use of the equipment through the communications program at Moghrane Institute. Several communication specialists will receive additional training in making slide presentations, designing pictorial publications, recording tapes, etc., through a special training course at Moghrane.

1. Technical Interventions Agricultural Extension

Agricultural extension services will focus on irrigated and dryland agriculture in Central Tunisia. While a definitive agenda of interventions has not been developed, it is anticipated that these will follow this outline:

- (1) Irrigated agriculture (farmers on irrigated perimeters and those using privately owned surface wells)
 - A. Vegetables and fruits (garden crops)
Tomato, green pepper, onion, bean, watermelon, squash, potato, and winter vegetables
 - a. Appropriate crop rotation and cropping patterns
 - b. Water requirements and appropriate irrigation techniques.
 - B. Forages (Winter cultivation)
Leguminous forages
 - a. Appropriate crop rotation and cropping patterns
 - b. Seeding density
 - c. Intercropping to maintain proper nutrient balance in soil
 - C. Livestock
Dairy cows

D. Cultural techniques

- a. Animal traction
- b. Fertilization
- c. Plant protection
- d. Practices to reduce water and wind erosion

(2) Dryland agriculture (productive lands)

A. Grains: Wheat and barley

- a. Trial plots at agricultural research station and demonstration plots on farmers' fields
- b. Agronomy trials: Seeding density, spacing, and fertilization.

B. Forages

- a. Demonstration plots of vetch-oats and luzerne
- b. Pasture improvement

C. Fruit trees

- a. Maintenance of existing fruit tree orchards
- b. Planting of new fruit tree orchards, almond and pistachio

D. Livestock

- a. Apiculture
- b. Aviculture
- c. Sheep

On irrigated lands, emphasis must be upon proper utilization of both water and fertilizer in order to maximize production. A careful balance must be achieved in the application of these two elements in the preliminary stages. This will avoid negative effects on soil quality which might severely reduce yields over the long-run.

In maximizing water utilization on the irrigated garden plots, cropping rotations should be established based on crops and varieties which have opposite rooting tendencies (vertical vs. horizontal). High yielding winter and summer vegetable and fruit crops have been identified. Exact water requirements still must be determined which will greatly improve irrigation techniques and maximize output for given costs of production.

Cultivation of leguminous forages on the irrigated lands during the winter months will serve a two-fold purpose: 1) provide food for livestock and 2) provide needed soil nutrients. The introduction of dairy cattle should be encouraged in the irrigated lands. Increased cultivation of winter forages will furnish food supplies. In addition, livestock manure on the irrigated lands will improve water retention capacity of the soil.

Beef fattening should not be encouraged in this region until pasture vegetation is improved and adequate to support increased numbers of livestock.

Animal traction is the most appropriate method for cultivating the land in the irrigated areas. Agricultural mechanization should be limited to small, light tractors. Large tractors should only be used on heavy soils entailing intensive work or for research purposes. Attention must focus on means to improve soil conservation on arable lands rather than contributing to existing soil erosion problems. In addition, proper fertilization procedures, plant protection and measures to prevent water and wind erosion must be addressed in new cultural techniques extended to farmers.

Extension activities in the dryland areas should concentrate on lands which have agricultural potential. Selection of crops cultivated and cropping patterns utilized must maximize exploitation of available water resources.

Cultural practices must work towards improving soil conservation and increasing reforestation. Planting of grains on hilly terrain should cease and deep-plowing should be seriously discouraged.

Grain research should be directed towards adapting non-photosensitive varieties of wheat and barley with short growing seasons (60 to 70 days). These varieties should be cultivated on the plateau areas during the months with the highest rainfall. Increased forage production should focus on cultivation of luzerne and vetch-oats in the dryland areas.

The establishment of new tree orchards must entail trees with low water requirements, such as almonds and pistacios. Increased sheep raising should be encouraged in the dryland areas rather than cattle raising. These farmers have practiced sheep-herding for many years. Lamb is the preferred meat, and food requirements are lower for sheep vs. cattle. Increased poultry production and bee-keeping can provide supplementary income to these farmers. Investment costs are low, yields will be realized in the short-run, and economic returns are reasonable for eggs, chickens and honey.

Appropriate cultural practices are of utmost importance in the dryland areas in order to reduce water and wind erosion. These problems should be addressed in the preliminary stages of the extension interventions in the dryland area.

Among the innovations of the project are the new procedures and communications techniques to be used.

The field staff of the AES provides the most crucial link in the extension service. Therefore, the interaction between field agents and farmers must be carefully addressed. The following practices will be incorporated into the implementation of extension activities to assure effective delivery of services.

(1) Each extension agent will provide a weekly work plan specifying the date, the location, and the nature of his work. One copy should be submitted to the ESSU in Kasserine; one copy should be submitted to the regional office where he is working; and he should carry the third copy with him in the field. This will facilitate systematic implementation of extension services and provide closer supervision of field agents' work.

(2) Each extension agent will initially work with a small group of farmers, 15 to 25, on an annual basis within a specified community. This will later be expanded as extension and technical capabilities of the agents expand. This group of farmers should be organized through an omdah, community leader or household head. Continual association with the same group of farmers should facilitate introduction of new technologies and increase trust on the part of the farmers. It is also an effective mechanism to use in encouraging farmers to extend newly adopted practices to neighboring farmers. The extension agent will attempt to firmly establish this farmer group in the community through regular meetings. These meetings should take place with attendance by all farmers. In subsequent years, the leader should organize meetings and communicate problems expressed by the farmers to the extension agent. The agent can respond and provide assistance to 20 farmers through the group leader which will greatly reduce his work load and allow him to establish permanent contact with a new group of farmers. A 3-member committee of staff from the CTDA not working directly with extension should evaluate the ability of the extension agent to train farmers in new agricultural practices. Farmers should be selected at random, and this evaluating committee will visit the farmers' land to assess the extent of successful adoption of new techniques. Based on this evaluation, remedies to specific problems can be derived and the delivery of extension services can be improved.

(3) Young Farmers Club will be organized in an attempt to sensitize farmers' sons to agricultural concerns at an early age. Member's age should range between 10 and 20 years. The Club will undertake rural community projects, such as reforestation, soil conservation, and establishment of pasture lands. Activities can be organized on a competitive basis with the winner receiving a prize, such as a sheep, goat or an agricultural tool.

(4) Direct contact with farmers will be emphasized, demonstrating a willingness to listen to their problems and at the same time providing technical assistance. A total of 1100 demonstrations of new technologies will be the basic extension approach.

(5) A total of 500 farmer information days will be organized around specific themes.

(6) Posters will be placed at demonstration plots, attracting attention to practices and giving information about the likely results.

(7) Radio will be used, particularly as a feedback mechanism relating what some farmers have achieved with the new technology, in the words of the farmers.

(8) One to two day training sessions for farmers will be organized by the CTDA and agricultural schools in the area. Such training would be appropriate when introducing a new crop or complicated cultural practice.

(9) Direct assistance will be given to farmers in the form of seed, fertilizer or other agricultural inputs. But such grants will be clearly identified as part of an experimental or demonstration program with a well defined time limit. More common will be the work of the extension agent in assisting farmers to seek out needed agricultural inputs, market outlets and other requirements of his family. The agent will have to be well trained to listen to the needs of the farmers and have means of providing solutions to these needs, agricultural and non-agricultural.

As stated above, the number of farmers serviced by an agent will range from 15 to 25. However, the farmers will be located in a specific community and organized through an omdah, community leader, or an individual who is locally recognized and accepted as a model figure - preferably a farmer. Initially, the agent will work with and through the selected individual in delivering extension advice and information to the farmer group. In subsequent years, the leader will assume greater responsibility in organizing meetings, demonstrations, field days, and in communicating problems expressed by the farmers to the extension agent. The agent can then respond to the farmers through the group leader which will reduce his workload and also allow him to establish contact with another group of farmers. With the agent's link to the ESSU, he will be able to address a wider range of agricultural production elements, steadily expand the number of farmers assisted through the agricultural extension system, and as well, act as a referral agent for non-agricultural extension needs. Given a "graduation class" of 20 farmers per year for example, over the five year life of project an agent would service 100 farmers with an additional 20 or so being brought in each succeeding year. Assuming similar unit costs between the existing and planned extension service. Returns on investment for the latter would be fully recouped in year five. If one includes those farmers outside of the immediate contact group who also adopt extension advice, the recoupment period will be less. In future years the number of farmers serviced by the system will increase progressively without a portional increase in the extension staff.

2. Technical Interventions in the ESSU

The technical expertise of the ESSU will be in 6 specific areas. Some of this expertise is already in place at the CTDA while others must be developed or recruited. The first technical specialists be as follows:

(1) Agronomy: An expert in crops and the efficient utilization of water and land resources. This specialist must be familiar with appropriate cultural practices, required fertilizers and insecticides, and proper tillage practices.

This person must maintain contact with the research agencies in order to remain abreast of new developments, most importantly INRAT for irrigated crops and Le Kef for dryland crops. He would be responsible for supervising the establishment of demonstration and trial plots on farmers' fields, selecting the site locations throughout Central Tunisia to test for effects of varying water and soil conditions, and reporting the results to the research institutes. In addition, he will act as the technical backstop for the field agents working on the irrigated lands and in the dryland areas and for the communications specialist preparing information documents for the field agents.

(2) Animal Production and Range Management: An expert to assist livestock breeders in proper care of animals, improved feeding practices, and the introduction of improved breeds -- basically working with sheep and goats. Work will also focus on increasing apiculture and aviculture production amongst dryland farmers. This specialist will establish close links with the research stations undertaking improvements in livestock breeding, such as INRAT at Ousseltia, the OEP research and development projects throughout the country, and the livestock institutes at Mateur and at Medenine. He will supervise the work of field agents who are working with farmers on problems related to improved forages and dryland pastures, herd improvement, and apiculture. Technical assistance in preparing information packages will also be provided.

(3) Water Resources Management: Through review of DRES technical studies, the water resources specialist will make an assessment of the potential for future exploitation of irrigable lands. The CTDA will provide a major input into decisions regarding government or private investment in wells, irrigation systems, and water and soil conservation programs. As water availability is the most limited resource and greatest constraint to increased agricultural production in the region, it must be closely monitored. The water resource specialist will provide technical advice to extension agents in the irrigated areas as well as those in dryland areas to maximize utilization of available water resources. Water diversion techniques will be explored and implemented.

(4) Agricultural Economics: This person will aggregate materials related to credit sources, cropping patterns, and market outlets for the field agents. He will develop procedures for maintaining farm records. This will enable the field agent to assist the farmer in making efficient production management decisions.

(5) Communication: The communication specialist should have training in rural sociology communications and in the use of communication equipment. He should also have some training in one of the disciplinary areas to be served by the ESSU, most probably general agriculture. He will 1) work with the other specialists in the ESSU and help them draw together information pertinent to their fields and to area development; 2) process, duplicate and disseminate this information to agencies and their extension agents; 3) make this information available to schools, the media and the public;

4) establish and supervise an equipped service unit which would produce communication aides such as slides, charts, radio tapes, bulletins, newsletters, etc., that could be used by the CTDA and other agencies in support of their extension and outreach programs, and 5) work with other units of this kind, especially the DERV, to make their output pertinent to and available to the CTDA.

(6) Health Specialist:

Education: B. Sc. or equivalent in the behavioral sciences MPH or MSc in Health Education or Communication.

Experience: Minimum of three years' experience in health education or communication involving rural communities, preferably in Tunisia.

Scope of Work:

- required to work closely with health-related institutions, e.g. Ministry of Public Health, Institute of Nutrition, ONFPF, Ministry of Education, Ministry of Social Affairs, and community organizations like UNFT, ASDEAR, OTEF, and local, regional political organization.

- prepares and develops audio-visual materials appropriate for target population (primarily a non-literate audience).

- develop and maintain close working relationship with local political and community leaders at the village level.

- develop curricula for continuing education of teachers, social workers, medical and paramedical personnel, community leaders (literate and non-literate).

- assume responsibility for organizing and coordinating health educational activities in the region, e.g. health fairs, prevention of blindness week, prevention of waterborne diseases, dehydration, etc.

- collaborate with other technical experts at ESSU in preparing multidisciplinary messages for community development in the area.

- act as liaison with academic institutions, ministries, and agencies to furnish additional technical support in health and nutrition when needed.

ANNEX D.

Economic Analysis Bibliography

One of the best known investigations of the importance of technical information and diffusion across the economy is the work of E.F. Denison. An excellent exposition is his 1967 article: "Sources of Postwar Growth in Nine Western Countries" (American Economic Review 57 (2) (May 1967) pp 325 ff.). Criticisms of the Denison view, fuller explanations of it and some of the alternative evaluations that competed with it have been discussed by M. Ishq Nachri, in "Some Approaches to the Theory and Measurement of Total Factor Productivity: A survey" The Journal of Economic Literature VIII: 4 (December 1979) pp 1150 ff.

The application of these methodologies specifically to agriculture has been discussed generally by T.W. Schultz in Economic Growth and Agriculture, New York: McGraw Hill: 1968 (p. 85 and passim). It has been very specifically applied by Zvi Griliches ("Research Costs and Social Returns: hybrid Corn and Related Innovations" Journal of Political Economy LXVI: 5pp 418 ff and A.B. Andarawara "Evaluations of Public Research Programs in Agriculture" Canadian Journal of Agricultural Economics, 17-(3) pp 157 ff.

But the standard reference has become the work of Griliches' student, Robert Evenson: "The Contribution of Agricultural Research and Extension to Agricultural Production" (Ph.D Dissertation, University of Chicago, 1978). An important factor is that this sub-project is designed to make potentially profitable technology accessible to the poor and uneducated in Central Tunisia. It places great stress on improving communications with this target group.

ANNEX E.SOCIAL SOUNDNESS ANALYSIS1. General Characteristics

The main characteristics of the project area include geographical and social variability, a high degree of population dispersion over the landscape, and a varied base of survival strategies of rural families. Geographically, the area encompasses plains suitable for cereal culture in the northern part of the region - in the area of Makthar, Rohia and Thala - forested hills in the central part - Jedliane -, irrigated perimeters in Sbiba, Feriana, Jelma and Sbeitla -, and steppe areas around Sbeitla and Jelma. Variations in socio-cultural organizations are based on separate nomadic heritage - the two major tribal groupings of the Majeur and the Freshish confederacies. These tribal identities no longer retain any major sociopolitical significance, but they do remain important variables for social distinction particularly amongst the older people of the region. Aside from the tribal heritage, the most important social institutions are, and will continue to be the kinship groups - the nuclear family, the extended family and the local descent group (Arsh).

The dispersion of the population over the landscape has been caused by the gradual settlement of the nomadic populations over the past fifty years, and by the segmentary nature of the lineage system of the tribal confederacies. The result has been the scattering of isolated kinship groups on different regions of the old tribal homeland. Since today no real basis for common action exists among those people, most find themselves in situations of relative isolation, with minimal interaction with their neighbours or the urban population. Their integration into the region will surely be one of the most challenging tasks in the development of the region. The high rate of dispersion is perhaps best illustrated in Appendix ___ which gives the population size, density and area in sq. km. for the eight delegations presently under the jurisdiction of Central Tunisia Development Authority. (Kasserine and Feriana are also included). Providing services and technology for these groups will be a difficult and slow task given problems of accessibility, interaction and communication.

To obtain a better grasp of the intricacies of the situation, we need to take a close look at the subsistence strategies of the inhabitants of the region in order to ascertain the areas where intervention could be applied most successfully, and where it has the chance of affecting the widest possible segment of the population.

2. Survival Strategies

Traditional survival strategies in the region were oriented primarily around pastoral activity combining animal husbandry with some cereal cultivation. With the gradual sedentarization of the nomadic population came a gradual ecological transformation of the region. The introduction of irrigated agriculture and the decline of pastoral activity created a situation

characterized by an increasingly varied resource base. The reasons for this expansion are attributed first and foremost to the old pastoral way of life which emphasized variability, given the harshness and the unpredictability of the environment. In order for them to guarantee survival, the pastoralists had to diversify as much as possible given the limitations of the natural environment. This tendency towards diversification was guided by a basic economic orientation characteristic of pastoralism and carried on to the settled, essentially agricultural way of life. The strategy is simply to lower the risk-taking as much as possible in order to guarantee survival and continuity. Lower risks of course mean lower gains; so long as the risks are perceived as major, the pastoralist will opt for minimizing them regardless what the possible but unlikely gains may be.

This low risk/low gain strategy discussed in detail by Hopkins (1978) continued after the pastoralists become dryland farmers. If the object of an extension program, or any other development program, is to induce the farmer to innovate, meaning an increased risk situation, then the farmer needs to be initiated into the latter very gradually with ample demonstration along the way that increased risk will not mean total collapse and devastation.

Keeping in mind these two variables - varied resource base and the low risk/low gain strategy, both of which characterize most farmers in the region, we can then proceed and analyze the different survival strategies that are found in the region today. They include both agricultural/pastoral and non-agricultural strategies. The following have been isolated:

A - Agricultural/Pastoral

1 - Dryland Farming

- a - Cereal Culture
- b - Arboriculture (Olives, Almonds, Figs, etc.,)
- c - Cactus

2 - Pastoralism

- a - Sheep
- b - Goats
- c - Cattle, Camels (very few)

3 - Irrigated Farming

- a - Surface Well Irrigation
- b - Irrigated Perimeters

B - Non - Agricultural

- 1 - Migrant Labour (National and International)
- 2 - Salaried Work
- 3 - Occasional/Seasonal Employment
- 4 - Commercial Activity
- 5 - Rent of Buildings, Equipments etc.
- 6 - Weaving (Women)
- 7 - Misc. Others

The optimum strategy that a family could follow would be a combination of as many of the above as possible. Since this is usually unlikely, the next possible strategy would be to secure an agricultural as well as a non-agricultural source of income. The FAO study for the governorate of Sidi Bouzid gives an average of approximately 70% income derived from agriculture (54% of which comes from irrigated agriculture) and 30% income derived from non-agricultural activity. These figures do not really reflect the realities of Kasserine region, which has fewer irrigated parcels, and where more farmers are engaged in dryland farming/pastoralism. Furthermore, Fraenkel (1978) has maintained that in the northern regions, many of the small farms are not operating farm units because the owners derive most of their income from non-agricultural activity.

It should be borne in mind that these strategies are not mere abstractions but do in fact represent real choices and manipulations on the part of the farmer and his family. Farmers are, as the Missouri Team pointed out, rational economic entrepreneurs who are receptive to adopting new techniques and improved farming systems, if they are convinced that such changes lead to higher incomes, better living and security for their families. To illustrate let us take a hypothetical family of six children (4 males, 2 females), living on a ten hectare parcel of land and practicing dryland farming (or perhaps surface well farming). It is in the interest of the family as a unit that the children seek diverse employment options to augment the family income. The head of the family can count on the aid of his wife and two daughters and perhaps one of his sons. That leaves the other three to seek non-agricultural work. The family may invest heavily in the education of the most promising of the sons, so that he can get a good job and help the family in the future. Of the other two, one may be encouraged to migrate and seek wage labour either in Tunis or the Sahel or preferably move to France, Germany or Italy (Libya being somewhat doubtful now). The remaining son will probably seek salaried work, occasional employment (construction for example) or perhaps commercial activity in the region itself and help on the farm during peak labour period. By so doing, the family could have a balanced and diverse source of income to guarantee its survival and prosperity. It is the family structure itself which then lends support to the migration patterns of some of its members.

It is this same strategy of manipulation of the services of the household members which frequently has important ramifications for the land tenure system, by weeding out potential inheritors of the land. It is unlikely that all of the sons will return to claim their share of the land upon the death of the father. Given the Islamic system of inheritance, the land would, under normal circumstances, be divided equally among all the male heirs. If some of the male heirs were successful in non-agricultural work they are not likely to return to the agricultural way of life. Fragmentation of the land upon the death of the father could then be alleviated, and instead of dividing the land up among the four sons, it may be divided between only two (or perhaps all of it reverts to only one son) with special provisions for the other sons.

This essentially is a method of manipulating the labour of the family members achieves a wide resource base, and guarantees diverse and adequate incomes to sustain the whole family. It is a strategy that is best suited for a family dependent on dryland farming. The success of this strategy is dependent on variables beyond the control of the family (i.e., availability of non-agricultural work and feasibility of migration). These variables are not insured for the future and are tied to economic and political issues outside of the region. Consequently it is a potentially hazardous situation (in the long term at least). Since the government of Tunisia has expressed a deep interest in limiting the migration of people from the region to other areas in Tunisia or overseas, it becomes important then to think in terms of the development of new options for agricultural development in the region itself. It seems that the best way is to initially concentrate on labour-intensive farming methods (such as irrigated agriculture) in order to absorb the working force of the region. It is important to act soon given the fact that many migrant workers are returning to the region (and other regions in the country), particularly from Libya.

3. Successful Farming in Central Tunisia

In his social soundness analysis of the Drylands and Irrigation components of the Central Tunisia Development Program, Hopkins (1978) isolated five variables which he felt were most crucial for the establishment of successful farming in the region. These variables are land, labour, capital, water, and technology. To these must also be added a sixth factor, that of marketing.

Land is readily available. Of course, the agricultural potential of the land varies from one part of the region to another, with some suitable for irrigated agriculture, others for dryland farming and still others suitable for pasture lands. Data on the types of soils in the region is scant and we do concur with the recommendation of the Missouri Team that soil fertility facilities must be established either at El Kef or Ouslatia, or both. They could perhaps serve as centers for such research activities and could collaborate with institutions in the region (such as the CTDA), and in other parts of the country. The single most crucial

factor with respect to land is the complicated issue of land tenure. Attention should be directed toward facilitating the acquisition of titles to lands, a very important issue for obtaining loans and credit from the Bank. It appears that the practice of renting land is not very common in the Central Tunisia area, and consequently Fraenkel's analysis of the credit situation in the north does not really apply here. Neither is the issue of absentee ownership significant in the region. Contracts of share-cropping do exist but since cereal production is relatively marginal in the area, they tend to be at a minimum.

Labour's role in the establishment of successful farming is, of course, crucial. As explained earlier, the family survival strategy has been to promote migration and the pursuit by certain children of non-agricultural activity. Migration, as was pointed out in the FAO and Hopkin's reports does not really create a shortage of manpower. It simply skins off extra labour that is readily available. However, with the potential and inevitable return of many migrant workers, channels must be established to create labour-intensive work strategies, hence the recommendation for intensifying irrigated agriculture.

Capital remains a problem. Many farm families rely on the money sent home by migrant workers to create sufficient capital in order to purchase technology to improve agricultural production. The inflow of capital, however, is not always used for improvement of agricultural production. In fact, the capital is used first and foremost for building or improving a house. It could then be used for the purchase of a pick-up truck, a television set and for the improvement of the health and diet conditions. If water is known to be available on the farm, pumps and small machinery may be purchased. The decision as to how to invest the money is made by the head of the household and the contributing son, in consultation with the rest of the members of the family. It is safe to assume that money will be spent first on house building and improvement, and then on the technology necessary for efficient exploitation of the water resources.

For these farmers lacking the capital generated by migrant labour, the situation is somewhat different. They must rely on loans and credits offered by the bank or other institutions. For investments entailing a long maturation period, a farmer must have title to the land (hence the priority and importance of the land tenure issue). Many farmers are hesitant about obtaining loans from banks and other institutions fearing the red tape, and not wanting to be indebted to anyone, let alone the bank or the government. They are aware of the commitments that loans could impose on them and the risks involved in the failure to repay. Their economic strategy is essentially one of "balanced reciprocity". Working through the banks and through interest is perceived as a form of "negative reciprocity" which is antithetical to their system of values. Furthermore a commitment to a bank indebts not only the farmer but his family as well - his children and perhaps his children's children. Consequently it is preferable to continue in the low risk/low benefit strategy.

It is this particular point which makes it imperative that the extension agent be equipped with the knowledge of the credit situation so he could better explain the potential benefits, and perhaps encourage some farmers to pursue this option.

A final crucial factor in the discussion of capital is the form which the capital takes. Many of the farmers in the area own livestock which they regard as a form of capital. Livestock has been and will continue to be a major form of a "savings account" which could be converted very quickly into other forms of capital, notably cash. Given the attachment of the farmer to his livestock, it is unrealistic to expect him to abandon this form of capital in favour of the others. A sound extension program should, therefore, address the issue of livestock management, thereby accommodating the desires of the farmers. One last note about the forms of capital and that is land as capital. The uncertainty of ownership and the tendency toward the preponderance of "collective lands" and "lands of extreme indivision" makes land less attractive as a source of capital. Only privately-owned titled land and irrigated land is seen as capital. For the farmer, though its value often lies less with its agricultural potential and more with its potential use as a house site.

Water is perhaps the most significant of all of these six variables. For a population that has been dependent on rainfall for hundreds of years, the availability of water is extremely crucial. In fact, if water is readily available then farmers would probably have already devised strategies for the establishment of successful farming. Problems over water rights and water distribution are frequent, and the availability of water could often determine which farmer has a good year and which one doesn't. Given the natural limit on the availability of water, however, the central issue becomes one of equitable distribution of water so that the largest number of farmers could benefit from it. A good extension program should be ready to address these issues.

Water without the technology necessary to exploit and utilize it efficiently is not enough, hence the next variable that must be addressed, technology. The most desired and sought after technology is usually high technology, i.e. tractors, pumps, etc. For those farmers that have the capital, they would be in a position to use it for water exploitation (digging and equipping wells), or for technological input (new crops, machinery, etc.). Since high technology is beyond the reach of most farmers, efforts should be made to facilitate the acquisition of low level technology (hand pumps, etc.). An extension program should address the role of low level technology, how to use it and how to profit from it.

The final variable is marketing. If the farmer is expected to increase his production of irrigated crops (vegetables for example), then he must be assured of a market for his produce. Marketing facilities need to be reorganized in such a fashion as to assure maximum local marketing and consumption. This was essentially the recommendation of both the Missouri Team and Hopkins. Marketing is especially crucial for farmers who rely on

surface wells. If efficient irrigation methods are to be directed to those farmers, they must be guaranteed a local outlet for the surplus which they will hopefully produce. Otherwise they are not going to be convinced that increased production is going to result in increased income and a higher standard of living.

What I have tried to show so far is that farmers have sound strategies that are oriented toward survival and continuity. It is important to have a full understanding of these strategies as any planned intervention must work through the general framework of the economics of the farmer if it is to have any measure of success. The farmers are attuned to the realities of their lives, and at the same time willing to accept new ideas and techniques if they can see tangible positive results (hence demonstration plots are suggested as a way of showing the farmers potential gains). Increased production should not be overstressed since many farmers are not really interested in substantial increases in production, if that production cannot be profitably marketed. The prestige element should perhaps be stressed more than the material benefits of increased production. An extension program should therefore take cognizance of the socio-economic conditions of the region especially those variables which influence the decision-making process at the household level.

4. The Dynamics of Information Flow in the Family

It was mentioned earlier that the farm family operates as a basic unit of production and consumption. It should be emphasized that there are definite patterns of interaction amongst the family members which shape the major decisions. The father is typically the person who ultimately controls the capital and who has the final word on ways of allocating resources. The influence of the sons in the decision-making process is determined by their economic contribution to the household. The higher the contribution the more influence the son has. It is, therefore, important to work closely with the head of the household at the same time assessing the roles and contributions of the rest of the members of the family.

In terms of the roles of the females of the household, the issue is more complicated. It is apparent that the labour contribution of the females is immense (that applies for all the survival strategies). Unfortunately the contributions of women do not translate into a net gain of status in terms of the decision-making process (as has been suggested by some anthropologists). So long as the control of female production rests with males, the former are unlikely to register any gain in status. It is unrealistic at the present to suggest that women exercise the direct significant control over their production activities (given the cultural values pertaining to sexual segregation and division of labor). It is important though that females participate in and benefit from the extension activities planned for the region. One option for addressing the female participation is to work through the traditional information flow networks, i.e., through the males. This, however, is unpredictable and could be very slow. If the information is to reach the women directly, then new ways must

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be devised to address them within the proper socio-cultural context. Two possible ways are suggested here:

(1) Working through the areas of health and nutrition. Health and family planning clinics are areas where a sizable number of rural women aggregate. Women usually have little hesitation about talking to men so long as the interaction is conducted within the context of health related activities.

(2) Organize information dissemination activities during market days (particularly the weekly markets held in different parts of the region). Market days bring together a large segment of both the male and the female population for exchange and trading purposes. Many women frequent these markets to buy clothing, shoes, spices, sugar etc., and also to socialize (perhaps even arrange marriages). The market, therefore, is an extremely crucial place for communication flow. It is an institution that could probably be utilized effectively for reaching the widest possible audience, both male and female.

These two channels could insure information to as many rural women as possible, particularly when they are applied in conjunction with the traditional patterns of information flow within the family. It is unrealistic and inadvisable to expect the extension agents to establish a rapport with the women. Consequently the two methods mentioned above are probably the most effective at this stage to insure the participation of the female segment of the population.

THE ROLE OF FEMALE EXTENSION AGENTS

The role of women in agricultural extension programs in Tunisia is very limited indeed. Of the twenty eight centers for agricultural training in the country (Centres de Formation Professionnelle Agricole) only two are reserved for women. This is largely due to two factors - 1) the segregation of the sexes in the traditional conservative rural sector, and the ideology pertaining to male/female roles and statuses which underlies this segregation, and 2) the gradual decline in the percentage of people engaged in agriculture and the growing feeling among many rural women that their "emancipation" and increased status will come from their pursuit of non-agricultural income-generating avenues.

The general decline of involvement in agriculture on the part of the population could best be seen in the following table which gives the evolution of the Tunisian labor force from 1956 to 1975.

Kind of Service	1956	1966	1975
Agriculture	74.75 %	45.9 %	39.9 %
Mining Industries	1.3 %	2.5 %	2.0 %
Food Processing	6.8 %	10.6 %	17.3 %
Construction and Public Work	2.4 %	6.0 %	10.4 %
Electricity, Water and Gas	0.2 %	1.3 %	0.9 %
Commerce, Banking, Real Estate	5.3 %	7.5 %	9.4 %
Transportation	2.2 %	3.9 %	4.3 %
Services	7.1 %	21.8 %	16.2 %

Whereas these figures reflect the employment patterns of the male segment of the population, one could nevertheless extrapolate certain observations concerning the women's participation in the labor force. One main observation is the gradual erosion of involvement in agriculture for both males and females in favour of other jobs. The one notable increase, as far as the females are concerned, is in the area of food processing industry. It is the industry that is most open to women, and one where many seek refuge in their attempts to transcend their agricultural heritage, which brings us to the main issue, i.e., training for female extension agents.

There are some major difficulties in trying to assess what can be done to expand and encourage women to participate in extension activities. Most girls who enroll in the above-mentioned centers do so in the hope of getting some kind of career; some enroll because their families sent them. Still others go there without really knowing the reason. Consequently one encounters a varied group of girls in the school with different backgrounds and different interests and prospects. The schools do not take an active

part in placing their graduates, and according to Madame H. Chabane of DERV most graduates end up working in food processing plants; a very small percentage make their way back to the farm and apply their knowledge in the rural areas.

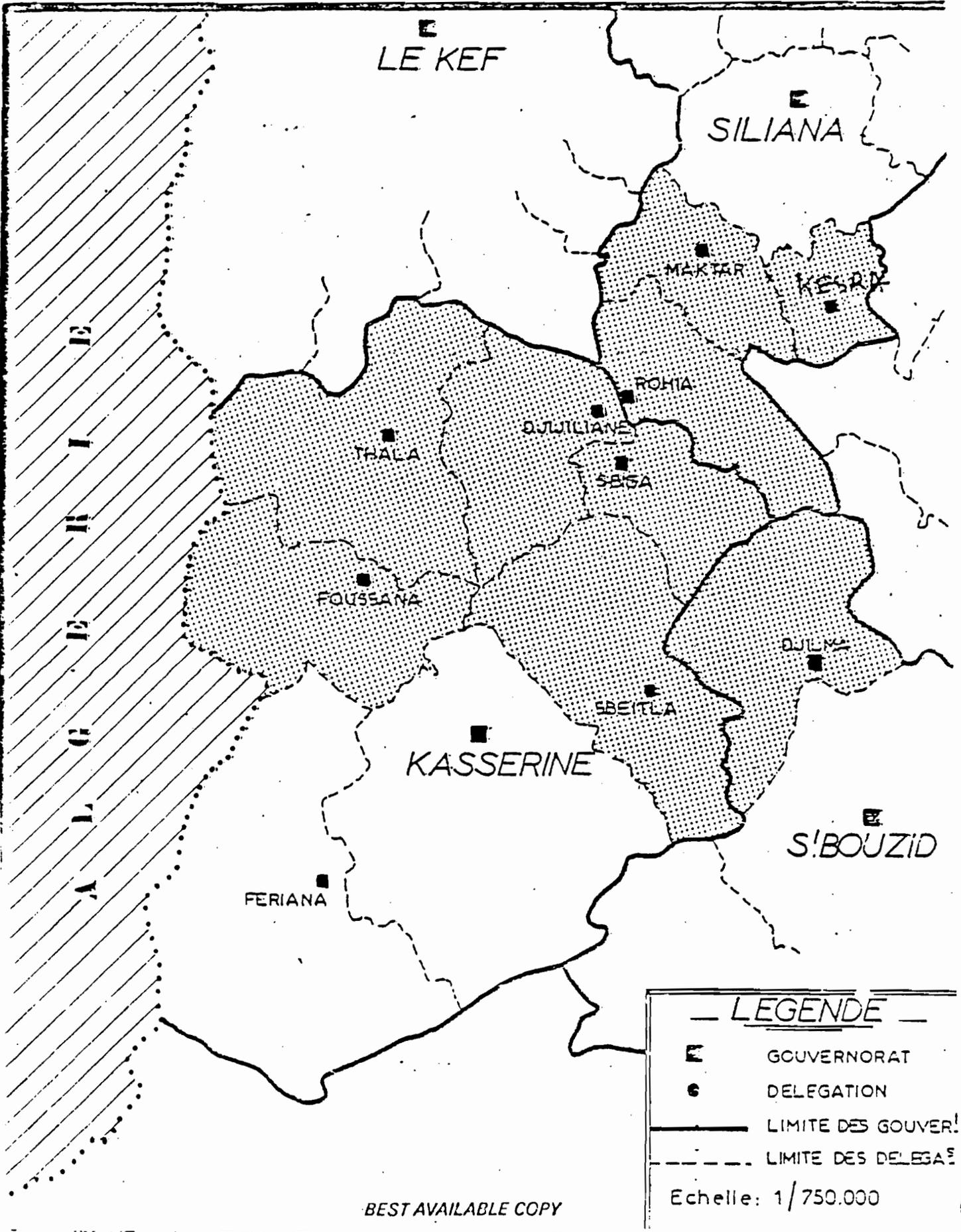
The centers of training for women are found in Thibar (Gov. of Beja), and in Sidi Bouzid. The education in these centers consists of three stages lasting for a period of 2 years; these stages are:

1. General Education - 25% time is spent on general education.
2. Social Training (Home Economics) - 30% time spent.
3. Technical Training - 45%

General Education consists of courses on civil and religious duties. Social Training emphasizes home economics, cooking, child care, nutrition, and public health. Technical training consists of courses and demonstrations on basic subsistence; poultry, vegetable growing, care for animals, use of pesticides, methods of fertilization and general principles on plant and animal care. Unfortunately most of the girls who graduate after two years fail to put their knowledge in the rural areas where it is needed most.

There is another institute for high-level training of women, and that is the Centre of Soukra outside of Tunis. Girls who complete the four-year course there graduate with an Adjoint Technique certificate. There are currently seven such institutes in the country with Soukra being the only women's center. The Ecole Supérieure at Moghrane trains female extension agents as well, and a number of girls are enrolled there now. It is recommended that the ODTC recruit female extension agents from there. Special incentives in the recruitment process may have to be made to encourage those women to work for the ODTC in Kasserine.

Despite the presence of these few centers for the training of women, there is still a general feeling that the role of women in extension activities is not really, and probably never will be, great. A girl who enrolls in a Center to become an extension agent is faced with numerous obstacles, ranging from personal needs to use her training in extension for purposes other than agriculture, to social pressures upon her return to her community. Nevertheless, it is important to pursue and encourage the training of women in extension work. The spread of labour-intensive irrigation farming in the region is going to mean more female participation. Increased female participation, in turn, means added need for women extension workers, who can help in information dissemination not only in the house, with domestic chores, but also on the farm, with technical expertise.



ANNEX G. 2.

List of Acronyms

CTDA	Central Tunisia Development Authority
CTRD	Central Tunisia Rural Development
ESSU	Extension Services Support Unit
AES	Agriculture Extension Service
DERV	Direction of Education, Research and Extension
FAO	Food and Agriculture Organization
CNEA	National Center of Agricultural Studies
INAT	Tunisian National Institute of Agronomics
INRAT	Tunisian National Institute of Agronomic Research
DPV	Direction of Vegetative Production
CTV	Territorial Extension Cell
OEP	Office of Livestock and Pastures
GIAF	Association of Citrus and Fruit Producers
GID	Association of Date Producers
GIL	Association of Vegetable Producers
PPI	Public Irrigated Perimeters
OMVVM	Office for Medjerda Valley Development
CRDA	Regional Center for Agriculture Development

THE ROLE OF GOVERNMENT ORGANIZATIONS, RESEARCH INSTITUTIONS
AND EDUCATIONAL INSTITUTES IN EXTENSION

Most of the local extension information programs of the various agricultural agencies rely mainly on farm visits, demonstration plots and field days. Particularly in the irrigated areas, the new technology is quite complicated and represents a radical change from prior farming methods. This situation requires individual attention on a regular basis, and generally such attention is being received, at least by some farmers.

The use of various communication media is limited. A few simple, though effective, communication aids such as posters, slides and newsletters are locally produced. However, most agricultural publications, audio-visual aids and materials for the mass media are produced in Tunis.

With the exception of radio, the possibilities for using mass media to reach farmers are extremely limited. There are no newspapers published in Tunisia other than those printed in Tunis. There is one television station and that is in Tunis. Few farmers have electricity, and fewer still have television. Most farmers, however, do have transistor radios. There are two radio stations in Tunis (one in Arabic and one in French). Other radio stations are in Monastir and Sfax. The Sfax station is listened to widely in the central area.

CRDA

The CRDA has 24 local offices in the governorat of Kasserine. Ten of these are currently in full operation, the other 14 should be shortly. Each has three or four agents. The main extension information method is the use of demonstration plots. CRDA apparently has some linkage with the INRAT experiment stations.

The CRDA also received bulletins from DERV in Tunis. The agents are the main users of these bulletins, although some are given to farmers who can read. The local CRDA also produces a newsletter for agents and the better farmers. The bulletins and newsletters mainly contain how-to-do-it information on agricultural production.

The local CRDA makes some limited use of slides and films produced in Tunis. The office has slide and film projectors as well as batteries and generators to use these where electricity does not exist. A typical farmer response to the slides and films is to say, "That's fine, but I'm not able to do it on my farm." The agent is always available to say how the farmer should proceed.

The Kasserine office of CRDA also gives training sessions to young farmers or sons of farmers. Many participants commute to these short courses which last one to two months. An exam is given at the end of the course, and those not passing get individual attention in the area in which they are weak, from specialists.

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DFV

DFV is divided into 4 sections: grains, tree crops, vegetables, and crop protection. The two functions of DFV activities consist of:
1) programming harvests for each agricultural season, and 2) providing technical packages to field extension agents.

DFV has recently revamped the structure of its extension program. It has divided the country into 400-425 CTV's (Territorial units for extension). Eventually one agent will be assigned to each CTV. This agent will have full responsibility for delivery of extension services. The agent will be lodged on the land and will be a generalist by training. Specific problems can be addressed by deferring to the specialized sections within DFV. In 1979, 100 extension agents were settled on a CTV and an additional 100 will be settled in 1980. It is expected that all agents will be working on their respective CTV's by the end of 1982. At present, most of the DFV extension agents working on a CTV are concentrated in the north of Tunisia.

OEP

OEP activities are most heavily concentrated in Northern Tunisia. It does have a very active extension program associated with its Projet Intégré d'Élevage. In 1978, its activities included over 3500 demonstration plots, 45 field days and 35,000 farm visits. Extension services in Central Tunisia are quite limited. Several small programs to introduce pure bred cattle and promote poultry production in some of the irrigated perimeters have been undertaken. OEP experience in pasture improvement and feed production is limited to the more humid areas of Northern Tunisia.

DERV

DERV is the Ministry of Agriculture organization officially charged with producing mass media materials for extension. Its central office in Tunis has four sections:

- Radio and press
- Television and film
- Slides and sound recordings
- Video tapes

Each September, the regional offices of CRDA submit requests to DERV for information materials. Those requested most are produced. At times the content may be regionalized. As a part of this project technical assistance, training and commodities are being provided to the DERV in exchange for development of regional material.

Publications. DERV has writing, editing, graphics and printing services and facilities. It produces about 15 to 20 publications per year, most of which are in Arabic. It has offset printing facilities and has plans to acquire photo-composition equipment. Apparently it currently uses typewriter and varitype equipment to set copy.

Most publications are semi-technical and are used mainly by extension agents. Some, however, go to farmers.

DERV also publishes a magazine which includes a monthly work calendar of farming activities and general articles on farming techniques.

Radio. DERV has a seven-minute agricultural program broadcast at 6:33 am seven days a week. This is on agricultural production techniques and includes interviews with specialists plus information taken from agricultural publications.

It also has a half-hour program on Wednesday afternoons. This includes questions and remarks by farmers, advice presented by technicians, and information from the National Farmers' Union.

Films. It has a film library of over 125 films, and produces about two films of its own each year. Most films pertain to grain and livestock production and are directed towards Northern Tunisia. Films are sent on request to agricultural agencies and schools throughout Tunisia. Film use does not appear to be very great.

Video tapes. DERV has produced over 60 video tape programs. These tapes are used on television and are also shown to farmers. DERV has 10 cars or vans - one in each of the 10 northern governorats - which transport chairs, video playback units, and slide projectors for use at farmer meetings. These vans go to meetings at the request of CRDA agents. Technical and repair problems of the video equipment has greatly limited its use.

Television. DERV used to produce a weekly agricultural television program broadcast on Friday evenings. In 1978, it produced 37 such programs totaling nearly 16 hours. But this activity apparently ended at the end of 1978.

Slides and film strips. DERV has about 30 different slide sets and another 30 film strips available to CRDA units on request. These have a printed script and, in some cases, a synchronized recorded tape that goes along with them.

The unit also has cameras and its own dark room. Colored slides are sent to France for processing. The unit also organizes national and even some international seminars on various agricultural topics.

GIAF - GID - GIL

These are semi-autonomous organizations under the Ministry of Agriculture which provides about half of their budgets. GIAF deals with fruit tree products, GID with dates, and GIL with vegetables. GIAF is apparently the most active of the three. It provides fruit seedlings to farmers at low cost. It also has an active information program. It co-sponsors some bulletins with the Ministry of Agriculture. It also produces slide sets and information sheets for agents and farmers. These are often used at farmer information days.

INRAT

INRAT produces a publication for extension agencies which gives recommendations based on its research. It is not a publication for researchers, but instead reports results and recommendations stemming from its research. Apparently these publications are not widely circulated. The CTDA office in Kasserine receives only one copy.

AGRICULTURAL HIGH SCHOOL - SIDI BOUZID

This agricultural high school has cut back on its enrollment in recent years because of the decreased number of job openings for new extension agents. To utilize its excess teaching capacity, the school started last year to produce information packages for CRDA and CTDA. These packages consist of all of the information and support materials needed to put on a farmers' information day program.

Staff from the school, in conjunction with student participation, prepare and conduct the first three farmer information programs. Extension agents from CRDA then take the materials and present subsequent programs.

Some of the slides used are prepared by DERV or GIAF in Tunis. Others are prepared by the school. The school also uses some DERV and GIAF printed material to supplement similar material it produces. For each farmer day presentation, a record is kept of the material presented, who presented it, what audio-visual and demonstration aids were used, what techniques worked best and who attended. Farmers who can read and write fill out an evaluation form. All of this information is carefully summarized and evaluated.

The school is currently considering using the radio station in Sfax to reach farmers. The present plan is to record the questions farmers ask at farmer days as well as the answers given by extension agents. In this way, program content is controlled to a large extent by farmers. Furthermore, the credibility of agents is enhanced because it is demonstrated that they can adequately answer farmers' questions.

ECOLE SUPERIEURE DE GRANDES CULTURES - EEF

This post secondary institute was established in January, 1977 with the following objectives:

- (1) Training of technicians for specialization in field crop production (wheat, barley, corn and forest species) at the level of ingenieur adjoint.
- (2) Conduct research on a variety of cultural practices: improved varieties, land preparation, soil tillage rotation of crops, seeding rates, fertilizer use and weed control.
- (3) Adult education aimed at improving the technical knowledge of farmers and extension agents through the use of seminars and information days.

Sixty students are presently enrolled in the institute and 26 diplomas were granted in 1978 and 22 in 1979. The teaching staff consists of 4 full-time professors (1 Tunisian, 1 Canadian and 2 French) and 19 part-time professors who work full-time as specialists and technicians with government agencies or institutes.

The Institute manages a farm, including 440 hectares in wheat and barley production, 180 hectares in olive trees, 290 hectares in forages, and 690 hectares of uncultivated land. The Tunisian Government provides 60 percent of the Institute's funding while farm proceeds of the Institute cover the remaining 40 percent. The budget has grown steadily over the past 3 years - 1977 60,000 TD; 1978 125,000 TD; and 1979 144,000 TD.

The director of this school, Mr. Daaloul, feels strongly that more applied research needs to be conducted to provide technological packages for dry-land farmers, and that extension programs need to be integrated so that farmers do not receive conflicting information from various agencies. Current plans and efforts in this direction are impressive considering the school's very limited staff and facilities. A program will soon be established in cooperation with a U.S. university to expand the plant breeding research program. A number of exchanges have been carried out with ICARDA (International Center for Agricultural Research in Dry Areas) located in Aleppo, Syria in order to acquire some new barley and wheat varieties.

The Institute has a barley and wheat breeding program underway and plans to develop four kinds of trials or plots - all of which would be on farmers' lands.

- (1) Breeding Trials: Plant variation of bread wheat, durum wheat, and barley on farmers' fields in each of the 8 delegations. These varieties are presently being tested on the Institute's farm. These trial plots are planted in the delegations with the assistance of the research personnel

from Kef and the field extension agent. These will allow research personnel to compare lines on different farmers' fields and serve as demonstrations to farmers as to on-going research activities. A decision will be made to release certain varieties in specific areas of the 8 delegations on a wider basis. This introduction and adaptation process will terminate with the release of the seeds to the market and to the government organizations which deal with wheat and barley production.

(2) Agronomy Trials: Fertilization rates, seeding rates and depth of seeding will be conducted on the Institute's farm and farmers' fields beginning in 1981.

(3) Demonstration Plots: The results of the agronomy trials will be demonstrated to the farmers in each delegation on two or three larger plots. Local extension agents would be responsible for these plots as well as organizing farmers' field days.

(4) Pilot Plots: These will be developed on the land of 2 to 3 good farmers in each delegation to test the entire package of techniques developed for the new varieties of wheat and barley, beginning in 1983 and 1984.

CTDA is going to have its extension agents work with the Institute in conducting the applied research and the trial plot work. The Institute plans to conduct training sessions for other extension agents, and eventually would like to produce bulletins and circulars for technical staff and extension agent use.

The Institute is presently confronting a variety of problems. Recruitment of full-time personnel is difficult, due to the salary differentials between teaching positions and research and extension positions for people with Masters or Ph.D degrees. The pay scales tend to isolate some of the country's most highly trained and capable people in teaching jobs where they cannot address the immediate problems facing the agricultural sector. A second problem rests with the training of technicians and engineers at the more advanced agricultural institutes in French rather than Arabic. Much time must be spent by the technicians in learning the spoken language of the farmers and translating materials and information packages from French into Arabic. Efforts should be made to assemble as much available material for instructions from other Arab countries.

ECOLE SUPERIEURE D'ECONOMIE ET DE PROMOTION RURALE - MOGHRANE

This Institute provides the seventh year of the secondary education for students coming from agricultural high schools. After completing the 7th year preparatory course, students can proceed into the 2 year college program which qualifies them to become ingenieur adjoint at the end of the program. The entering students select one of three areas of specialization: 1) farm management; 2) documentation; or 3) accounting.

The accounting curriculum focuses on methods of accounting and management of financial activities for different types of enterprises. The program in documentation teaches students skills in the techniques of library science, document storage and retrieval, and the preparation of abstracts and bibliographies.

The farm management program has particular relevance to the CTDA extension program. During the first year, general techniques of farm management, record keeping, cost-benefit analysis and decision-making are taught. Students select one of two sub-specializations during the second year: 1) management of cooperatives and agro-combinats or 2) extension and communication techniques. The extension-communication program was only introduced this academic year with 10 students being enrolled. The extension curriculum includes 53 hours of theoretical and 78 hours of practical training in the use of various communication techniques and equipment. The preparation of slide shows and film strips, the use of various types of projectors, the preparation of audio material to accompany the visual presentation, and the imaginative use of the flip chart, posters, murals and 16 mm film are taught during this second year.

As part of the training, students work with various agricultural agencies and prepare a communication package on a selected agricultural topic. This practical training takes place during the final 3 months of the 2-year program. On-the-job training with a government agency or a development project serves 2 functions: 1) familiarize the student with applied work and 2) provide the student with an introduction into an organization with the hopes of permanent recruitment. This second function should facilitate CTDA's recruitment of a communications specialist.

The staff at this Institute consists of 11 full-time professors who teach courses in the seventh year college preparatory section. There are 145 students presently enrolled in the 7th year program. The 2-year college program is staffed by 6 full-time professors and several part-time instructors. Sixty-eight students are enrolled in the first year and approximately fifty students in the second year.

The Institute gives short courses to train extension agents in communication techniques. It also trains reference and technical librarians in methods to collect and abstract technical journal articles.

OTHER EDUCATION INSTITUTIONS

- (1) INAT: Trains highly qualified technicians 4-year program.
Ingenieur de Travaux de l'Etat 6-year program Ingenieur
Principal.

- (2) ECOLE SUPERIEURE D'HORTICULTURE - Chott Meriem:
Provides technical training in vegetable crop production.
2 year program
4 year program
- (3) ECOLE SUPERIEURE D'ELEVAGE - Mateur:
Trains technicians in livestock production with special emphasis on cattle.
- (4) ECOLE SUPERIEURE DE PASTORALISME - Medenine:
Trains technicians in arid agricultural production and livestock production (sheep and goats).
- (5) ECOLE NATIONALE DE MEDECINE VETERINAIRE.
- (6) ECOLE SUPERIEURE D'INGENIEURS ET D'EQUIPEMENT RURAL - Medjez El Bab.
- (7) INSTITUT SYLVO PASTORAL - Tabarka.

The seven above-mentioned agricultural training centers would provide technicians with expertise in areas related to needs of Central Tunisia. In recruiting new technicians for the CTDA extension program graduates from these institutes should be carefully considered.

Suggested Ways to Improve Communication Links in the Extension Service

The following list of ideas should be considered in developing a responsive extension system which incorporates all participants.

Extension Agency to Farmer

- (1) Direct agent contact with farmer and demonstrations certainly are most important and must continue.
- (2) Agents need to be generalists. If their agency does not have the answers, they need to get them elsewhere.
- (3) Agents need to know about the economics of particular farming methods. Many extension programs in Central Tunisia are heavily subsidized. Farmers seem more concerned with how to get more government aid than with the economics of what they are doing.
- (4) Field days, farmer days, possible meetings of farmers' cooperatives and organizations are all good ways to multiply the effectiveness of an agent.
- (5) Posters might be used to create awareness of new practices. These could be posted in public buildings, community wells and local open markets. Health information posters might be effective at community wells.

(6) Signs can be posted at demonstration plots, attracting attention to the practices and giving information about the results.

(7) Printed bulletins and newsletters could supplement other means of communication. Apparently these are not very popular with farmers, but they do have some advantages. Many practices are complicated and require exact amounts of chemicals, etc. It is difficult for a farmer to remember these if he only hears them. Through bulletins the farmer can store information for later use. Illiteracy should not present an insurmountable problem. In nearly all families there is at least one person who can read. This "dependent literacy" has been shown to be effective in many countries. Bulletins can extend extension information beyond the small percent of farmers reached directly by agents. Bulletins must be carefully prepared and written in the farmers' language. Furthermore, agencies must avoid the temptation to see who can put out the best-looking publications. It is content, not packaging that is important.

(8) Information bulletins might be distributed with farm supplies. That is, when a farmer buys supplies, or receives credit in kind, he would receive a bulletin telling how best to use that supply.

(9) Slides are a cheap and effective way of communicating. It is better to produce these locally than in Tunis.

(10) Of all the mass media, radio has the most potential here. Apparently most farmers have transistor radios. For much of the Central Region the station in Sfax would be the best outlet. Recording farmer questions and agent answers (as suggested by Albert Rollard, Lycée Agricole) would be an excellent idea. This would no doubt give recording quality below broadcast standards, but at least the notion of letting farmers determine the subject matter content of the program is an excellent idea. It is a way of using the mass media as a feedback mechanism - something almost never done. By this I mean that farmers have a chance to tell agents, radio programmers and government agencies what problems they have and how they might like to see them solved. Other content could include presentations by agents, weather, descriptions of government programs, questions from listeners and possibly markets. I suspect, however, that market situations are so local in nature that regional market information is not of much value. Producers of the program should keep farmers, not colleagues in mind. Keep emphasis on content, not the slickness of the presentation. Nearly all of the material can be taped for the program. The station at Sfax could put in weather and possible current agricultural information live. After details are worked out, it should not require anyone from this area going to the station. Perhaps the program could be once a week - produced by the Lycée Agricole. If others outside the immediate area wish to do similar programming, these areas could be featured on other days. The program format, however, could remain the same.

(11) Films. DERV is already producing films in Tunis and there seems to be some interest to produce films here. Films are extremely expensive to produce. As a result, they tend to be used many years beyond the usefulness of the information they contain, and in a much wider geographic area than that for which they have relevance. The lack of electricity in most rural areas necessitates the use of a generator. If produced, they should be filmed locally with local farmers. That is, they should show a local farmer carrying out practices correctly, not a researcher from Tunis giving recommendations and showing what works well on the experiment farm. Mexico has done some excellent filming of this type.

Extension - Education

(1) The CTDA should encourage and fund field trials using technologies taught in the schools in order to test for potential adaptability in Central Tunisia. Interaction between teaching staff, students, extension personnel, and farmers would provide practical focus to course material and would reveal the actual complexities of farm production in Central Tunisia.

(2) The CTDA should sponsor selected teaching staff to travel to other Arab countries to assemble teaching materials in Arabic. Teaching technical subjects to students in Arabic will facilitate the communication process between extension agents and farmers.

(3) The CTDA should sponsor workshops at agricultural institutes. The Institute would be responsible for preparing a short course on a pre-specified theme based on technical needs of extension personnel. CTDA sponsorship of such workshops would give the institutes additional financial resources and would orient teachers and students to think about real problems which farmers, technicians, and program administrators confront.

(4) A six to eight week training course in the use of communication techniques should be given for all extension personnel at the Ecole Supérieure in Moghrane. This Institute has the staff and the facilities to train extension agents in the use of a variety of communication techniques. Supplemental training should be offered to address broader ranging technical needs. Both in-country and out-of-country training courses should be available for the extension personnel. In-country training should consist of short courses or workshops at Le Kef, ENRAT, Saïda Center, etc., while training abroad should be directed towards the International Agricultural Center of Wageningen in the Netherlands, or at agricultural institutes in Morocco, Syria or the U.S. The International Agricultural Center in the Netherlands is recommended due to its special curriculum designed for technicians from developing countries, its course presentation in French, and its geographical proximity to Tunisia.

Extension - Research

(1) Extension agents need to know what research is being done and how it applies in their area. This includes all agricultural research, not just that dealing with the specific crop or subject matter of their agency.

(2) Every extension agent should have access to research results and practice recommendations in bulletin or newsletter form.

(3) It would be desirable to have extension agents participate in applied research or at least know how it is conducted. They need to have some notion of the scientific process to know to what extent the research might be useful in their area. This information is also needed if agents are to set up local test plots.

(4) Researchers need regular interaction with extension agents to know what farm problems need researching.

Inter-Agency Communication

This is a difficult problem, and yet the most critical communication task in the area. Each agency has its own programs and priorities. Agencies are often reluctant to cooperate with another agency because they have their own agenda. Furthermore, all agencies compete for the same scarce national budget funds each year. This too, leads to competition. Facilitating the flow among agencies is probably the area in which the CTDA can do the most good.

(1) Keep the bureaucracy under control as much as possible. Delegate authority; do not have all decisions made centrally.

(2) See to it that agents in all agencies have information about recommended practices and the programs of various agencies.

(3) Keep up informal contacts between various agencies.

(4) Organize regional seminars on the problems of rural development with the participation of technicians from all relevant agencies.

<u>FUNCTIONS</u>	<u>DERV</u>	<u>DPV</u>	<u>DAPME</u>	<u>CTDA</u>
TRAINING SPECIALIZED STAFF	X			X #
UPGRADING AND CONTINUOUS TRAINING OF STAFF	X			X #
RESEARCH IN FIELDS RELATED TO AG. PRODUCTION DEVELOPMENT	X			#
Extension: Diffusion of Scientific Documents and Research Results for the Users (TV, cinema, seminars, etc.)	X			#
FEED BACK				#
FIELD CROPS:				
Design and Implementation Control of Programs of Assistance and Ag Promotion		w/INRAT, INAT Le Kef & X UNAT	X)
Selection of Seeds		w/INRAT, INAT Le Kef & X UNAT) X #
Planning and Organization of Campaigns		w/INRAT, INAT Le Kef & X UNAT	X)
FRUIT TREES:				
Follow up on Programs Improvement of Varieties))
Supervision of Assistance and Incentive Actions) X) X #
Planning of Needs (selected plant materials and fertilizer)))
Planning and Supervision of Treatment Campaigns))
TRUCK CROPS				
Planning and Follow-up on Actions designed for the Promotion of Vegetable Production		X) #
Planning and Follow-up on Supply Maintenance and Treatment Operations		X) X

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<u>FUNCTIONS</u>	<u>DERV</u>	<u>DPV</u>	<u>DAPME</u>	<u>CTDA</u>
CROP PROTECTION				
Study of Pests		X w/INRAT		
Experimentation of Chemicals		X w/INRAT		$\frac{1}{2}$
Organization of Campaigns				$\frac{1}{2}$
Control of Imports and Exports of Crops and Seeds		X w/Min. of Economy & Finance		
Registration of Products) w/Ministry of Economy		
Control the Marketing of Chemicals) omv		
LIVESTOCK				
Promotion of Animal Production		X w/OEP, INRAT, INAT		
Genetic Improvement		I :em		
Design and Implementation Control of Forage and Animal Production Programs		I :em		
Protection and Health Control		w/Min. of Health		
Law Enforcement		w/Min. of Interior & Justice		
Inspection of Markets and Producers		w/Min. of Economy		
PROMOTION AND PROFESSIONAL ORGANIZATION OF RURAL SECTOR			X w/UNA	
ORGANIZATION OF THE SUPPLY OF INPUTS		w/OC X & others	X	X
AG POLICY FORMULATION			} w/DPSAE & others	
DEVELOPMENT OF CREDIT POLICIES; ACCESS TO CREDIT				X
AG CREDIT CONTROL			X	X
AG EXTENSION AND TRAINING	X		X	$\frac{1}{2}$ X
LAND TENURE				X w/Affaires Foncières & others

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All Bureaus and offices of Ministry of Agriculture are not included in the above table. The table does reflect all responsibilities of the above listed agencies as only those interrelating functions were included.

X: Executing Legal Authority

$\frac{1}{2}$: New or strengthened authority proposed under Extension Project

Note: All ag Schools and Institutes are under DERV.

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ANNEX H. - PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project: From FY 1980 to FY 1985
Total US Funding: \$2,805,000
Date Prepared: August 28, 1980

Project Title & Number: Central Tunisia Rural Extension and Outreach No. 664-0312.9

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><u>Goal:</u> Improve quality of life and income in rural areas of Central Tunisia.</p> <p>(See CT Project Paper for fuller development)</p>	<ol style="list-style-type: none"> 1. Increased disposable income. 2. Lessened morbidity and decreased infant mortality. 3. Increased economic activity. 	<ol style="list-style-type: none"> 1. National Institut of Statistics household survey. 2. Health record and survey. 3. CTDA project evaluation system. 	<ol style="list-style-type: none"> 1. Higher productivity leads to higher real income. 2. Government programs complementary to this activity are funded and implemented.
<p><u>Purpose:</u> Effective communications systems established between rural population and public sector purveyors of information and services in such fields as agriculture, health, family planning, and other CTRD disciplines.</p>	<ol style="list-style-type: none"> 1. Operational information and extension staff. -- ESSU and AES in place. 2. Rural population response to programs and adoption of new technologies and improved health, nutrition and other practices as measured by rate of adoption for recommendations at field days and demonstration plots and other outreach activities. 3. Public response to rural needs -- number of research packages produced; number of farm visits by outreach workers 	<ol style="list-style-type: none"> 1. Programming records. 2. Government project evaluations. 3. CTDA production statistics. 4. Agricultural program changes. 	<ol style="list-style-type: none"> 1. Technologies can be adapted for communication. 2. Tunisian farmer responsiveness to communication. 3. Adequate staffing, policy and logistical support continues. 4. Communication agents in a wide number of non-agricultural development fields are funded and fielded.
<p><u>OUTPUTS:</u></p> <ol style="list-style-type: none"> 1. Communication & Education Development Staff. 2. Agricultural Extension and Visitation Services <ol style="list-style-type: none"> a. Rural population of extension workers b. Extension workers and ESSU c. ESSU and researchers d. ESSU and public administrators and services. 	<p><u>MAGNITUDE:</u></p> <ol style="list-style-type: none"> 1. 6 ESSU specialists, plus minimum of 4 assistants. 2. Minimum of 9 senior and 49 junior agents. <ol style="list-style-type: none"> 2a. Weekly publications and mass media programs. 2b. Quarterly extension agent training 2c. Publications of reserach results 2d. Regular program of field/farmer visits by agents. 	<ol style="list-style-type: none"> 1. & 2. Organizational and Employment Records 3. Publications: <ul style="list-style-type: none"> Farm visitation records. Mass media programs. Elementary and secondary school programs. Observation and visitation in rural areas. Level of research extension interchange. 	<ol style="list-style-type: none"> 1. Timely inputs by Tunisia and USAID. 2. Continued political stability. 3. Research, Education, Extension linkages can be developed.
<p><u>INPUTS:</u> <u>TUNISIA:</u></p> <ol style="list-style-type: none"> 1. Staff & Salaries 2. Operational Budget 3. Supplies & Equipment <p><u>USAID:</u></p> <ol style="list-style-type: none"> 1. Advisors 2. Training 3. Commodities 	<p><u>TUNISIA</u> - 10 ESSU staff 58 AES agents</p> <p><u>USAID</u> - 2 resident advisors, 3yrs. each 30 PM short-term TDY 200 PM of training</p>	<ol style="list-style-type: none"> 1. Staffing and training records. 2. Contracts. 3. Visitation and observation 4. Procurement records. 5. Observation. 	<ol style="list-style-type: none"> 1. Continued Tunisia and USAID buegetary support 2. Available staff. 3. Ability of CTRD to manage broad program.

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SCOPE OF WORK FOR RESIDENT ADVISORS

I. ADVISOR TO THE ESSU

The principal advisor to the director of the ESSU must have previous work experience in extension with particular emphasis on communication and education.

The responsibilities of this advisor must encompass the following activities:

- (1) Establishing permanent links between the research institutes and the extension specialists of the ESSU and demonstrating the manner in which research findings must be implemented in the field.
- (2) Instituting a structure for extension specialists to provide technical materials for the design of an effective information program in the communication unit and working closely with the communication specialists to develop a comprehensive and relevant information program for the rural residents.
- (3) Assessing technical deficiencies of extension specialists and field agents in order to orient in-service training to their needs and to select appropriate in-country training courses and/or short-term training programs abroad. He/she will have a major responsibility for selecting the extension personnel who will participate in training programs and determining the nature of the training.
- (4) Designing themes of annual workshops based on orientation of extension activities. Organizing and inviting participants to the evaluation seminars which will be held in the third year and the fifth year of the project.
- (5) Establishing a structure to integrate all extension activities of the various departments of the Ministry of Agriculture operating in Central Tunisia.

In undertaking the five above-mentioned activities, the resident advisor will always work in collaboration with the director of the ESSU. By the end of his three year assignment in Kasserine, the director should have assumed all of these responsibilities. This foreign advisor must have a FS-3 working knowledge of French, prior work experience in extension activities related to communication, education and agriculture, and the ability to adjust to living conditions in a rural setting.

II. ADVISOR TO THE AES

The principal advisor to the director of the AES must be a specialist in agriculture-related extension activities. He/she will be responsible for establishing a permanent communication link between the field agents and the farmers. The responsibilities of this advisor must encompass the following activities:

- (1) Designing the work programs and extension activities of the field agents of the AES.
- (2) Assisting in the organization of specific farmer groups to work with each field agent and supervising the manner in which these group sessions are conducted.
- (3) Supervising the establishment of the nine nurseries and the experimental research station. This advisor initially will have responsibility for selecting materials to be planted, the procedure for monitoring growth and evaluating regional adaptability, and providing feedback to the research institutes.
- (4) Providing feedback to the communications unit on the technical materials needed at the delegation level and relevant themes for farmer information days.
- (5) Giving guidance to field agents on how to select farmer fields for demonstration plots and the mix of crops to be planted and cultural techniques to be used.
- (6) Linking credit activities provided by the CTDA Department for Agricultural Inputs and Credit-In-Kind with new agricultural practices introduced by the field agents of the AES. This advisor should play a principal role in developing the capabilities of the field agent to assist the farmer in designing his annual farm plan.
- (7) Orienting the field agents' work to address farm management and farm accounting procedures.

This advisor will always be working in close collaboration with the director of the AES. By the end of his/her assignment in Kasserine, the director of the AES will have assumed all of the advisor's responsibilities. The person recruited for this position must have an FS-3 knowledge of French, knowledge of the technical components of agricultural production, experience in designing communication links between farmer groups and extension agents, and a familiarity with North African culture. An elementary knowledge of Arabic is recommended.

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PROJECT CHECKLIST

A. GENERAL CRITERIA FOR PROJECT

1. FY 79 App. Act Unnumbered; FAA Sec. 653 (b); Sec. 634A. (a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project; (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure)?
- (a) Special Congressional Notification.
- (b) Yes.
2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?
- Yes. See Sections IV and V relating to Technical and Financial Analyses.
3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?
- Agreement with the responsible Ministry of Agriculture authorities has been reached on the responsibilities of the AES. Otherwise only ratification of loan is required.
4. FAA Sec. 611(b); FY 79 App. Act. Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 24, 1973?
- Not applicable.
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?
- Not applicable.

A.

6. FAA Sec. 209. Is project susceptible of execution as part of regional or multi-lateral project? If so why is project not so executed?

It is not readily susceptible of execution as a regional or multilateral effort.

7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

By providing technical assistance and training to GOT field extension personnel the project will support efforts to improve agricultural production and marketing, thus (b) and (e) will be served, in particular.

8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

Technical services of U.S. advisors will be financed under the loan and most commodities will be procured from the U.S.

9. FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.

See No. 10; The project Agreement will provide that the cooperating country's contribution is 25% or more to loan financed project.

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

Tunisia is a near excess currency country. Determination for use of the U.S. dollars was made part of the authorization for CTRD as a whole.

11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

Yes.

12. FY 79 App. Act Sec. 608. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar, or competing commodity?

No.

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B. FUNDING CRITERIA FOR PROJECT

FAA Section 102.b

1. Development Assistance Project Criteria

a. FAA Sec. 102(b); 111; 113; 281a.
 Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves to better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

b. FAA Sec. 103, 103A, 104, 105, 106, 107

Is assistance being made available: (include only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source)

(1) (103) for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; (103A) if for agricultural research, is full account taken of needs of small farmers;

(2) (104) for population planning under sec. 104(b) or health under sec. 104(c); if so, extent to which activity emphasizes low-cost, integrated delivery systems for health, nutrition and family planning for the poorest people, with particular attention to the needs of mothers and young children,

a) The sub-project is to provide technical assistance to poor rural farmers through extension services to help them improve their production and increasing their income. It is part of multi-disciplinary rural development project

b) The project will contribute to the development of local Government institutions and improve the living conditions of the target population through better income. Project is also beneficial to women who are active in rural areas.

c) The project is a contribution to Government broad program of development in Central Tunisia.

FAA Section 103. Assistance is being made available to provide direct support to small farmers, aiming to increase productivity and income of the rural poor.

B.1.b.(2)

using paramedical and auxiliary medical personnel, clinics and health posts, commercial distribution systems and other modes of community research.

(3) (105) for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development;

(4) (106) for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is:

(i) technical cooperation and development, especially with U.S. private and voluntary, or regional and international development, organizations;

(ii) to help alleviate energy problems;

(iii) research into, and evaluation of, economic development processes and techniques;

(iv) reconstruction after natural or manmade disaster;

(v) for special development problem, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance;

(vi) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

c. (107) Is appropriate effort placed on use of appropriate technology?

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be

Yes, more than 25%.

B.l.d.

furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)?

e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to the Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?

Not applicable.

f. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in governmental and political processes essential to self-government.

The sub-project responds to a major Tunisian need as part of an integrated Rural Development project. It particularly meets the need to increase the agricultural production to reach self-sufficiency.

g. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase or productive capacities and self-sustaining economic growth?

Yes.

2. Development Assistance Project Criteria (Loans Only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.

Given Tunisia's economic situation, the prospects for repayment of the loans are good.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

Not applicable.

3. Project Criteria Solely for Economic Support Fund

a. FAA Sec. 531(a). Will this assistance support promote economic or political stability? To the extent possible, does it reflect the policy directions of section 102?

Not applicable.

b. FAA Sec. 533. Will assistance under this chapter be used for military, or paramilitary activities?

Not applicable.

ISSUES PAPER

BACKGROUND

Rural Extension and Outreach (664-0312.9) is one of a cluster of CTRD sub-projects. Its purposes are to: (1) enhance the two-way flow of communication between small farmers in Central Tunisia and public research and outreach organizations; and (2) improve communications among the same public sector organizations. The life of the subproject is five years. The total subproject cost is estimated at \$7.065 million; the U.S. contribution will be \$2.805 million.

The subproject review committee has examined the subproject paper and identified the following issues:

1. Issue: Relationship of CTDA Extension Arm (AES) to other GOT Outreach Organizations.

The subproject proposes to help upgrade the quality of the CTDA extension arm (AES) to assist small farmers in Central Tunisia. Most (90 percent) of these agriculturalists are dryland farmers. CTDA has authority to assist only irrigated farmers while other MOA agencies (DVP, CDRA) have a mandate to work with the dryland group. Will this subproject create overlap and conflict among the AES and DVP and CDRA?

Strategy: While DVP and CRDA have the authority to assist dryland farmers in Central Tunisia neither has an ongoing program for this group nor do they have one planned for the near and medium term future. Therefore, in practical terms there will be no duplication between CTDA (AES) and other MOA organizations. Furthermore, to avoid administrative conflicts of authority this subproject contains a conditions precedent to initial disbursement requiring a clear grant of authority to CTDA to assist dryland as well as irrigated farmers in Central Tunisia.

2. Issue: Role Of Women

In approving the PID the NEAC expressed concern that the subproject contribute to enhancing the participating of women in the Tunisian economy. Does the subproject adequately address this concern?

Strategy: The subproject, in support of a GOT initiative, will impact directly on women at both the professional and target group levels. Concerning the former, the GOT will covenant to develop a plan which provides increased opportunities for women as extension agents within the AES. In addition, one of the positions in the ESSU will be filled by a women. Concerning the latter, some of the farmer information days developed by the AES will be organized specifically for women, and women will be included among the farmers participating in demonstration plots and other AES outreach activities. The ESSU will design technical information packages that address the concerns of female farmers, and a portion of the short term consultant expertise will

be reserved for WID specialists.

3. Issue: Institutional Agreements

Successful implementation of the farmer information days will require close coordination between CTDA and the research and/or academic institution(s) involved. Are the coordination arrangements adequately addressed in the sub-project?

Strategy: Originally, the subproject paper included a condition precedent to disbursement that required agreements, satisfactory to AID, be entered into by CTDA and the appropriate organizations for holding the information days. During subsequent discussions it was decided that this Condition Precedent would be an unnecessary incumbrance to project implementation. In the past, CTDA has established agreements with appropriate research and academic institutions through an exchange of official letters. The subproject review committee judged that the same procedures could be used in this case.

4. Issue: Training

The subproject paper includes a long term training element consisting of sending four people to the U.S. for master's degrees in agricultural specialties. The subproject review committee questioned the appropriateness of this training given the working and living conditions in Kasserine.

Strategy: This issue turns on the trade-off between the need for technical expertise within the ESSU and the potential for overtraining the individuals sent to the U.S. If the AES is to become an effective extension organization the technical backstopping capacity in the ESSU provided by the long term training is a requirement. Yet the living conditions in Kasserine and the limited prospects for career advancement make it unlikely that master's level individuals will remain with the ESSU for a long time. Possessing a master's degree would broaden career opportunities for these individuals increasing their chances for jobs in locations like Tunis or other coastal cities. Given this dilemma the subproject review committee decided to monitor closely this aspect of training to make adjustments in format and duration if necessary.

5. Issue: Environmental Assessment

The subproject design includes the use of technical products (pesticides and herbicides) in relation to an extension agent training farm, plant material nurseries, and demonstration plots. AID regulations require that an environmental assessment be conducted whenever the use of pesticides and herbicides is planned regardless of the source of funds (U.S. or host country) for the chemical products (the regulations also allow for circumstances when the assessment is not required -- e.g. supervised use of the chemical products, employment for experimental purposes only). Is it advisable to proceed with the subproject in the face of this regulation and the fact that an environmental assessment has yet to be undertaken?

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Strategy: In the judgement of the subproject review committee an Environmental Assessment is required and will be conducted early in the implementation of the subproject. While the assessment will encompass all three elements (training form, nurseries and demonstration plots) that will use pesticides, special attention will be given to the demonstration plots. An objective of this subproject is to achieve replication of successful new technologies (including the use of chemical products) among farmers in the target area. Such replication would take these products beyond the range of supervised use. Therefore the review committee sees the need for an environmental assessment and one will be carried out jointly by AID and the GOT after the arrival of the technical assistance team. Included in the subproject agreement is a condition precedent to disbursement of funds for the demonstration plots requiring that the assessment be carried out. In addition, dependent upon results of the assessment, the CP will require that the pesticides ultimately decided upon be acceptable to AID. In addition, in relation to the nurseries and training farms the GOT will covenant to take appropriate measures to assure that: (1) pesticides are used under direct supervision of project personnel; (2) toxicological and environmental data to project research personnel and the environment is supplied; and (3) any crops treated must not be for human or animal consumption unless EPA-FAO standards for residuals are met.

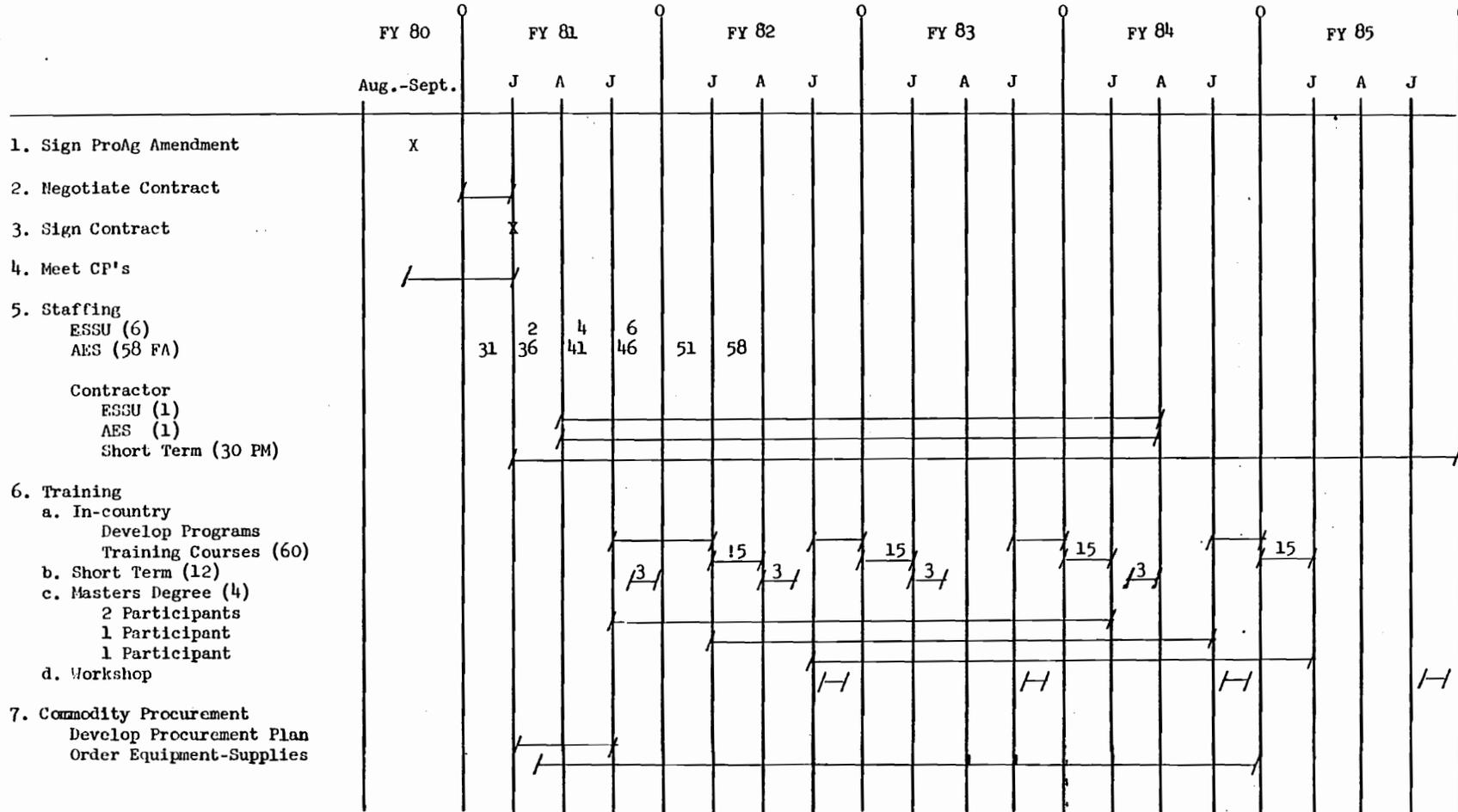
6. Capital Formation:

Farmers in the target group of this subproject are among the poorest people in Tunisia. Even if they are convinced of the utility of the recommended technological packages the cost of the interventions could be a constraint to their adoption by small farmers. Does the subproject adequately address small farmers' need for credit to purchase fertilizers, seeds and the like?

Strategy: The subproject contains a covenant by which the GOT agrees to assure the availability of necessary production elements for the subproject. Credit is included among these production elements and it is expected that it will be drawn from GOT money (e.g. FOSDA credit funds) available to CTDA.

ANNEX L.

IMPLEMENTATION CHART



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	FY 80	FY 81			FY 82			FY 83			FY 84			FY 85		
	Aug.-Sept.	J	A	J	J	A	J	J	A	J	J	A	J	J	A	J
7. (Continued)																
Order Vehicles																
Cars (20)																
4 wheel drive (2)																
Minibus (2)																
Trucks (4)																
8. Construction																
Plans + Blueprints																
AES Residences				10	10											
9. Demonstration Plots																
Develop Plans																
Start Plots					100			200			400			400		
10. Farmer Information Days																
Develop Program																
Farmer Days				24	30	30	30	30	30	30	30	30	30	30	30	30
11. Nurseries																
Develop Plans																
Start Nurseries																
2 Vegetable																
2 Vegetable																
2 Vegetable																
1 Aboriculture																
12. Training Farm																
Develop Plans																
Develop Infrastructure																
Develop Resource Material																
13. Project Evaluation																

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