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**N A R P**  
**A G R E**  
**T I S O**  
**O I C S E**  
**N C U A R J**  
**A L T H C E**  
**L U R A T**



National  
Agricultural  
Research  
Project

البحوث  
الزراعية  
للبحوث  
الزراعية



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November 1990

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**ARAB REPUBLIC OF EGYPT**  
**MINISTRY OF AGRICULTURE**  
**AND LAND RECLAMATION**  
**AGRICULTURAL RESEARCH CENTER**

**NATIONAL AGRICULTURAL RESEARCH PROJECT**  
**(NARP)**

**USAID PROJECT 263-0152**

**TECHNOLOGY TRANSFER COMPONENT**

**LIFE OF PROJECT PLAN**

by

**Dr. Abdullah Nassib**

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## **NARP TECHNOLOGY TRANSFER COMPONENT LIFE OF PROJECT PLAN**

The NARP Technology Transfer Life of Project Plan (LOPP) describes the planned integration and implementation of future technology transfer programs and activities which will be conducted under NARP Project Paper Amendment No. 2. This component will organize and train human resources and utilize physical and financial resources to transfer technology from the researchers to the farmers and provide feedback from the farmers for future research intervention to create a successful agricultural technology transfer system in Egypt.

### **I. BACKGROUND**

#### **A. NARP**

The National Agricultural Research Project (NARP) USAID Project No. 263-0152 was established in September 1985. This cooperative agreement was made between the Government of Egypt's Ministry of Agriculture and Land Reclamation (GOE/MOA) and the United States Agency for International Development (USAID). NARP was established to improve the capability of the Egyptian agricultural research community to generate and transfer improved agricultural technologies to Egyptian farmers.

NARP programs from 1985 to 1988 did not include a technology transfer or an extension focus. Activities were undertaken to mobilize human resources to plan and implement programs mainly concerned with research. Agricultural programs were mainly concerned with developing multidisciplinary research activities with an interdisciplinary focus which combined the areas of plant production, plant protection, soil and water, animal production and health, socio-economics and agricultural mechanization. The teams consisted of specialized research scientists from the ARC research institutes and central laboratories. Research staff and on-farm staff worked together to plan and conduct on-farm research. In the beginning improved research management was required to properly determine the needs and constraints at the level of the farmer or industry and to direct them toward major targeted research activities.

#### **B. Accomplishments of Previous Research Management Programs**

In the previous two years, activities have been designed and implemented in the Research Component to help develop appropriate research for technology transfer. A Research Support System has been designed and implemented to fund research activities which target national priorities to solve constraints in the agricultural system. The research findings need to be transferred through the researchers to extension and farm families.

On-farm research activities have been started through in-country training to develop a linkage with the researchers and on-farm research staff especially

in field crops and horticulture. This linkage will help encourage communications and cooperative relationships to provide a flow from the research coordinators to the farmer and back to the coordinator. Adaptive and applied research activities are being conducted in the laboratories and fields of the central and regional research stations. It is planned that newly developed technology identified in applied research experiments will be converted to adaptive research trials and be tested as research practices on farmer's fields through on-farm research. Analyses of technical and socio-economic factors related to the on-farm trials will provide information needed to select appropriate technology for transfer to farmers. It is envisioned that the transfer of the technology to the farmers will take place when researchers and subject matter specialist staff involve the extension staff in research as well as in training when conducting on-farm demonstrations and field days. The farm families will learn about new technical practices when they are involved in on-farm research and on-farm demonstrations as well as contacted individually and in groups at the village level by trained extension village agents.

### **C. NARP Project Paper Amendment No. 2**

In working with the researchers and on-farm staff it became apparent that the focus of research must be expanded to more adequately include extension and other activities which will link the researchers with the farmer in transferring new technology. In September 1988, NARP was amended to add components for technology transfer, seed technology, data collection and policy analysis and new initiatives.

The Project Paper stated that GOE and USAID officials realized that strengthening the local research technology generation capability in isolation from other critical factors would not accomplish the project objectives. The necessity of an effective technology transfer mechanism to stimulate farmers' demand for and adoption of technologies has been recognized.

## **II. NARP TECHNOLOGY TRANSFER COMPONENT OBJECTIVE**

The goal of the NARP is to increase agricultural productivity. The principal objective of the technology transfer component is to strengthen the transfer system so that it draws needed technology from researchers and transfers it through public and private sector networks to farmers.

The diffusion of new technologies will be improved from research organizations to the farmer. This includes improving the capabilities of the extension system and other intermediary groups to disseminate information concerning relevant technology practices which have been developed by the agricultural research system, mainly ARC, to farmers who will then feed back their needs for new technology.

### III. NARP TECHNOLOGY TRANSFER PROCESS

#### A. Strategies

The NARP Technology Transfer Component will:

1. Build capability at the central level of ARC to manage a comprehensive technology transfer system from the researcher to the farm family; and,
2. Help improve planning and management of technology transfer at the Governorate level.

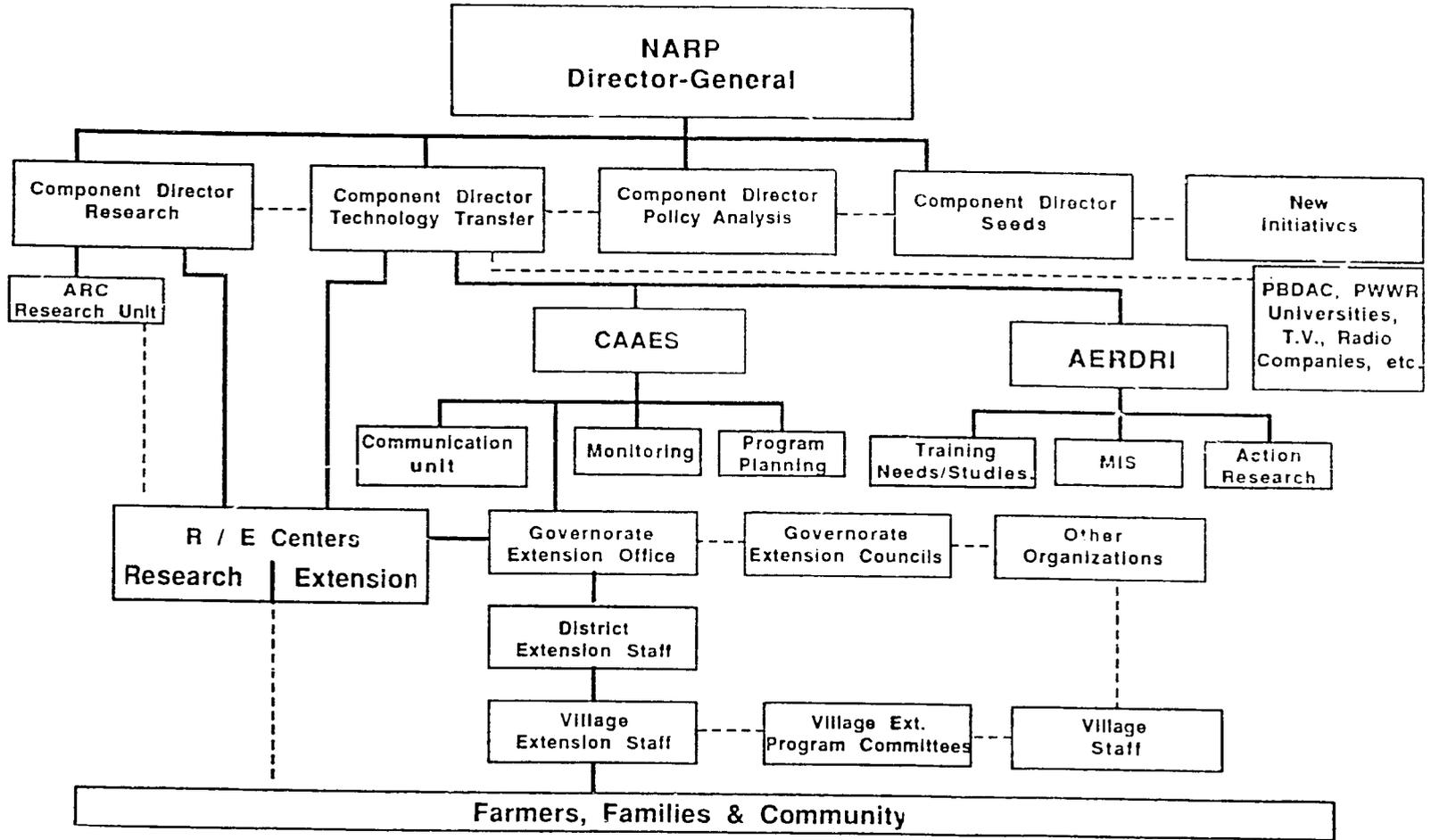
Appropriate technology will be developed at the research level and linkages will be established to adapt and transfer the new technology to the farmer as shown in Chart 1, NARP Functional Chart for Technology Transfer Component. The system established within the Functional Chart 1 will provide for effective management support for the continuous flow of agricultural information and technology from the research laboratory to the farmers field and follow-up feedback to enhance optimum production and maximum net farm income.

Chart 2, Stages of Technology Development, Information Transfer and Feedback, describes the logical order flow of the development, information transfer and feedback process. The chart shows the stages in which results from research programs, for example, Soil and Water, Integrated Pest Management, Seed Technology, Animals, Horticulture, Field Crops, Mechanization, etc., will follow. It is possible that a particular result obtained from the Research Program(s), disciplinary or multidisciplinary, would go through all of the appropriate stages for testing and modification prior to the final stage of Farmers Fields Production Demonstration. In some instances, however, results obtained from abroad, research conducted at the research station or other local sources, concerning specific technology or emergencies such as the control of desert locusts or screw worms might go directly from the primary source to the farmer for recommended use.

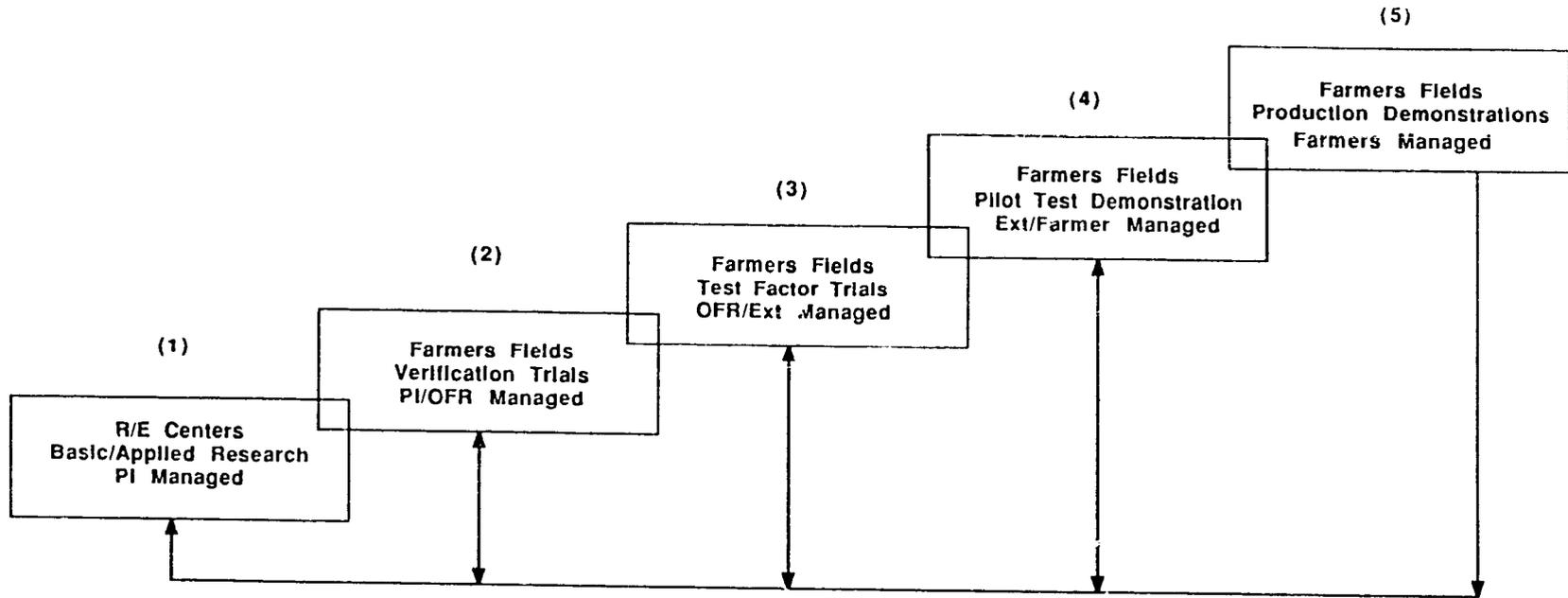
The NARP AMRI Mechanization research provides one example of the process shown in the chart. AMRI scientists are developing a multicrop thresher, that was first produced in another country for threshing wheat only. The thresher with and subsequent on the spot minor adjustments, will be able to thresh wheat, rice, sunflower and possibly other cereal, food legume and oil crops. The process began with an identification of a farmer need (feedback) and then proceeded through development, testing, modifying and demonstration field days. This effort, combined cooperation with staff from local manufacturers, research stations, on-farm research and extension. Directly and indirectly AMRI scientists are following the steps as described in Chart 2 to ensure development continuity and sustainability for this particular technology as well as establish prototype system development for other mechanization research and technology transfer.

As illustrated above, the model as shown in Chart 2 is important because this logical procedure develops overlap between each stage as well as linkage and may be used for any program to assure a systematic approach.

# NARP FUNCTIONAL CHART FOR TECHNOLOGY TRANSFER COMPONENT



# STAGES OF TECHNOLOGY DEVELOPMENT AND INFORMATION TRANSFER



Arrows Denote Feedback of Results  
Increased Productivity, Net Farm Income  
and/or  
Identified Constraints for Future Research Intervention

Maximum participation and involvement of researchers, on-farm, extension staff and farmers is required to develop an optimum interdisciplinary relationship. When these steps are followed both effective technology development and information transfer will be achieved with important positive results and feedback concerning constraints from farmers.

## **B. NARP Technology Transfer Components Areas**

The Project Paper Amendment and the LOPP emphasizes four major areas in the NARP Technology Transfer Component.

### **1. Strengthen Planning and Management Capability of ARC Staff at the Central Level**

Planning and management capabilities of ARC staff and the affiliated units will be strengthened to plan, manage and support a comprehensive technology transfer program. The specific elements are to:

- *Strengthen Central Planning, Management and Implementation*

Central level management will receive technical assistance and resource support to develop and manage the NARP Technology Transfer Component. The Technology Transfer Component Director will cooperate with the Central Administration for Agricultural Extension Services (CAAES), the Agricultural Extension and Rural Development Research Institute (AERDRI) and other affiliated units to develop and implement the agricultural technology transfer activities under NARP.

- *Strengthen the Training Infrastructure*

A Training Unit will be established in the Technology Transfer Component. AERDRI and other staff's capability will be improved to design and implement manpower development plans, training needs assessments, training plans, train the trainer activities, and monitoring/evaluation plans.

- *Strengthen the Information System and Communication Support Infrastructure*

The agricultural extension communication unit within CAAES will be helped to establish an information system by improving its capability to cooperate with research and extension staff to design, produce and disseminate technical references, training aids, extension fieldworker aids, and mass media programs.

- *Establish a Capability for Developing and Implementing Action Studies and a Management Information System (MIS)*

AERDRI staff will be trained to develop baseline studies, continuous action oriented studies and implement a Management Information System (MIS). The studies will gather data, analyze and report results while the MIS will monitor the implementation of the technology transfer programs and provide needed information concerning progress to the appropriate people.

## 2. Strengthen Technology Transfer Capability of the Research and Extension System to Implement Programs

The approach to the dissemination of technology will be flexible. Previous USAID projects such as the Egyptian Major Cereals Project (EMCIP), Rice Research and Training Project, Small Farmer and other projects were involved in working with extension. Some Governorates have received major support while others have received very little. Differences in working situations that exist in each region and Governorate will be considered when activities are designed. The technology will be designed for women and youth as well as men farmers.

Linkages will be developed between the researchers of the ARC institutes and laboratories, on-farm research staff, extension staff and farmers for the purpose of disseminating new technology. For example, research subject matter specialists (SMS's) will be selected and trained to serve as trainers of the extension SMS staff. On-farm specialist staff will provide assistance to the researchers in conducting researcher managed trials and OFR/Extension managed trials. OFR/Extension specialists will provide followup monitoring of pilot test and production demonstrations in farmer's fields. Agricultural technical practices will be developed by research, on-farm and extension staff and disseminated to the Extension Service and other groups who are working with farmers. Staff working directly with farmers will receive training in extension methods and agricultural practices to increase their effectiveness in their demonstration and communication of farming practices information.

Meetings will be held with staff from other Projects such as the AID Irrigation and Management Systems Project (IMS), AID Agricultural Production and Credit Project (APCP), International Fund for Agricultural Development Projects (IFAD), Egyptian Universities and others who are currently involved in technology transfer activities to plan a coordinated and integrated effort

- *Create Research/Extension Centers*

Ten ARC Research Stations will be converted into Research/Extension (R/E) Centers. Each R/E Center will serve two Governorates to provide training, develop research practices and

communications, establish linkages and support the Governorate technology transfer program.

- *Create linkage between extension and research staff and upgrade capabilities to implement technology transfer programs*

A system and a plan will be devised to utilize the previous training which has been conducted in the NARP Research Component and develop new training to develop linkages between the researchers and the farmers.

Subject Matter Specialists will train Extension staff to develop and manage demonstrations, field days and make individual contacts with the farmers.

Governorate Staff will be trained to respond to needs which are identified in the Governorate plans.

- *Develop Technical Information for Dissemination*

Research staff will develop recommended practices and work with the communication support units to prepare technical information materials that will be utilized in training, mass media, field days, individual contact with the farmers, etc.

### 3. Decentralize Public Extension Program Planning and Management

Governorates may request NARP assistance when they develop and implement technology transfer plans which involve farmers and a variety of non-public extension agencies. The specific elements in this area include help to:

- *Plan, Implement, and Monitor Governorate Technology Transfer Programs*

An organizational infrastructure in the Governorates will be developed to involve public and private agencies in developing Governorate technology transfer plans. Staff in the Governorates will be assisted and trained to prepare requests for assistance from NARP.

- *Build Capability at the Central Level to Support these Governorate Technology Transfer Programs*

Linkages will be developed with support groups within ARC at the management level to provide technical programs, training, communication support and monitoring programs.

#### 4. Support Non-Public Extension Service Agencies

Public and private agencies outside of the public extension service will be encouraged to participate in the technology transfer process especially in the support of the Governorate needs. Their capabilities will be strengthened to disseminate relevant technology to farmers. The specific elements are to:

- *Strengthen Institutional Capabilities*

Personnel who are in non-extension service agencies will receive special training or orientation in technology transfer concepts and methods, participate in planning/coordinating councils, link with research institutions, receive appropriate technical material and participate in assessing farmers' technology needs.

Public and private groups will be encouraged to work in programs aimed at special groups such as youth, women, commodity groups, and hard to reach segments of the agricultural community.

*Fund Special Grants for Increasing Participation or for Innovative Programs*

Public and private groups can submit proposals for funding of activities which will contribute to better understanding of the technology transfer system; or to develop and test new types of technology materials, prototype communication materials, new extension methods, innovative training programs, etc.

#### IV. NARP TECHNOLOGY TRANSFER IMPLEMENTATION

Successful implementation of the technology transfer system will depend on effective organization and management of the current system as well as initiation of additional activities. As implementation progresses there will be continual development and redesigning of the activities, procedures and guidelines to improve the system. In this section, the organization, activities and responsibilities are outlined. When such plans as the Master Training Plan, Inventory Assessment and Procurement Plan and Governorate Plans are written, quantifiable numbers can be given.

Staff from USAID will participate in some planning and monitoring of the various activities. An approval of USAID is required in such plans as training and procurement before funds are available for these activities.

An estimated schedule for the TDY's will be included in the Master Training Plan. The time frame of the implementation activities is shown in Appendix B by Quarter.

## **A. Improve Planning and Management Capabilities of ARC.**

The programs within this major area will establish the management system which will help support the other areas within the NARP Technology Transfer Component.

### *1. Develop the System for Central Planning, Management and Implementation of Technology Transfer*

The NARP Technology Transfer Component Director (CD) under the direction of the NARP Director General (DG) is responsible to coordinate activities with staff from the ARC Central Administration for Agricultural Extension Services (CAAES), Agricultural Extension and Rural Development Institute (AERDRI), other ARC research institutes and R/E Centers, Governorate Under Secretaries of Agriculture and councils, and a number of other government and non-government organizations to develop linkages for providing a continuous flow of technology from the researchers to the farm families.

In the beginning a management task group (MTG) consisting of the Technology Transfer Component Director and representatives from CAAES and AERDRI and assisted by Technical Advisors (TA) from the Consortium for International Development (CID) to design and direct the overall program development and management of the Technology Transfer Component. This group will design work plans, training plans, inventory and procurement plans and financial plans to provide the guidelines for future implementation. The first priority is to start with strengthening the planning and management capability of ARC to act as a support for the other elements.

Roles and responsibilities of units within the ARC and in other public/private agencies which are involved in technology transfer need to be examined and defined so that implementation activities can be properly linked, integrated and not duplicated. Meetings will be held with Directors of Research Units with ARC, IMS, APCP and Egyptian Universities to orient them concerning the purposes of the Technology Transfer Component. Plans will be discussed and activities coordinated between these various units and organizations.

The activities and responsibilities are to:

Activities	Person (s) Responsible
1. Appoint GOE and NARP Technology Transfer (TT) personnel	NARP DG
2. Appoint long term Technical Advisors	NARP DG, CD, CID
3. Form Management Task Group (MTG)	CD, TA*
4. Define roles and responsibilities of MTG staff	CD, MTG

\* When TA is indicated, it refers to both long and short term advisors. The specific assistance provided is explained later in the paper.

- |  |                     |
|--|---------------------|
| 5. Write Life of Project Plan  | CD, MTG             |
| 6. Write Financial and Implementation Plan for 12/88-7/90  | CD, MTG             |
| 7. Assess training needs and develop preliminary training plans.   | CD, MTG             |
| 8. Develop outline of needs for baseline studies   | CD, AERDRI, TA      |
| 9. Identify commodities required, write procurement plan, procure local commodities, use Procurement Services Agent (PSA) for out of country procurement | CD, MTG, TA, PSA    |
| 10. Determine roles of existing organizations involved in TT   | CD, MTG             |
| 11. Develop orientation meeting with ARC units & other public/private organizations involved in TT   | CD, MTG             |
| 12. Develop linkage & cooperative relationships with ARC units, other organizations to involve them in TT  | CD, MTG             |
| 13. Develop, manage & implement in-country training activities in cooperation with Center for Agricultural Management Development (CAMD)                 | CD, MTG, CAMD       |
| 14. Identify and process out-of-country trainees Training for each element   | CD, MTG, Contractor |

## 2. *Strengthen the Training Infrastructure*

Developing a training infrastructure will build the capacity of the ARC units and other organizations to develop personnel to conduct needs assessments, training plans and training activities. A Training Unit will be developed to implement daily organizational and implementation activities while the AERDRI staff will be trained to develop organizational plans for training, implement and monitor plans, develop and manage facilities for training programs and build train the trainers programs for technology transfer. The AERDRI staff who are trained will be responsible to transfer this knowledge in training activities to other ARC units, extension staff and Governorate programs.

An overall training needs assessment completed in the beginning implementation phase under the Management Task Group will identify the types and numbers of staff which need training from the various ARC units or organizations, their previous training, location of work, and future needs of staff. A Training Plan will outline the concepts, goals and plan for manpower development and training, fields of training and numbers of staff to be trained and funded from the Technology Transfer Component.

This program element will provide funds to develop a Technology Transfer Training Unit (TU) with representatives from the Component Director, CAAES and AERDRI. Support staff will be assigned to help

the Component Director facilitate daily activities which are needed to organize, implement, report and monitor training activities. A data base system will be established to maintain financial and reporting records of training activities. The Center for Agricultural Management Development (CAMD), which is part of the Ministry of Agriculture and responsible for agricultural management training, may be contracted to help implement some of the training programs in cooperation with the training unit.

Training activities will build the capability of the ARC units, especially AERDRI, to improve staff capabilities in such areas as organizational planning and management, use of data base programs for monitoring training needs and results, development of training needs assessments and development of training plans for technology transfer.

The activities and responsibilities are to:

Activities	Person(s) Responsible
1. Review training needs assessment	CD, MTG
2. Appoint a Training Unit	CD, MTG
3. Develop a Training Unit Plan to build an infrastructure to implement training activities	CD, MTG
4. Clarify roles & responsibilities of staff in organization & implementation of training	CD, MTG
5. Train AERDRI staff in areas of developing training inventories and needs assessments training plans, etc.	TA, AERDRI
6. Develop program materials for training	AERDRI, TA
7. Design & implement use of database programs, for management of records for reporting & monitoring of training process	TU, TA, AERDRI
8. Develop, implement and monitor in-country training activities	TU, TA, AERDRI, CAMD
9. Process out-of-country trainees	CD, TU

### 3. *Strengthen the Communication Support*

The Central Administration for Agricultural Extension Services's (CAAES's) Communication Unit will be upgraded to help improve the production of technology transfer communication materials and programs. Staff in the communication unit will be trained to establish smaller communication support programs in the R/E Centers, and Governorate offices. The CAAES Communications Unit (CU) will be responsible to work with the technology transfer staff which may involve researchers, trainers, subject matter specialists, extension staff or non-public organizations to design and produce publications and training materials necessary for transferring technology. The material will be suitable to use in mass media as well as in group meetings and individual contacts with staff and farm families.

The activities and responsibilities in this element are to:

Activities	Person(s) Responsible
1. Review current status of communications unit and materials being used	CAAES, TA
2. Develop outline for development & use of communications material in technology transfer	CAAES, TA
3. Identify needs for renovation of facilities, assist in design to renovate facilities	CAAES, TA
4. Develop communications materials suitable for technology transfer by researchers field personnel, mass media	NARP Research Staff, TT Staff, TA, CAAES CU
5. Pretest communication materials and programs	CAAES CU, TA
6. Provide assistance to establish, train, and support CAAES & communication units in the R/E Centers and the Governorates	CAAES CU, TA
7. Implement in-country training	CAAES CU

4. *Establish a capability for developing and implementing action studies and a Management Information System (MIS)*

AERDRI staff will review previous baseline studies and compile information to document existing data. A search will be made to identify the organizations which are currently involved in technology transfer, their responsibilities, current roles, number, location and type of staff and methods they use to reach farm families. After review of the existing information a plan will be developed to outline the additional information that needs to be gathered concerning the numbers, gender analysis and type of farmers who are currently being reached and the effect of the contacts by extension and other organizations. Additional studies will be planned and conducted which assess farmer's needs.

A MIS will be established to monitor the performance and effect of the technology transfer system in delivering the technical information.

The activities and responsibilities in this element are to:

Activities	Person(s) Responsible
1. Assign staff from AERDRI for review of baseline studies and development of MIS	AERDRI
2. Review current baseline data, studies & work being conducted in various organizations	AERDRI, TA
3. Develop outline for further data collection & organization of MIS	AERDRI, TA
4. Train staff to organize MIS	AERDRI, TA
5. Establish a data base system & MIS	AERDRI,

- |   |            |
|---|------------|
| 6. implement baseline studies and MIS   | AERDRI     |
| 7. Publish and disseminate reports and studies  | AERDRI. TA |
| 8. Conduct seminars and workshops with policy makers, program managers and staff to review findings | AERDRI     |

**B. Strengthen Technology Transfer Capability of the Research and Extension System with the Farmers**

Linkage relationships will be developed between research and extension staff and the two systems, extension and research will be integrated to help dissemination of new technical practices to reach the farm families. Plans will be developed to modify the current research and extension system and to strengthen capabilities of staff to increase the flow of appropriate agricultural technology. By the end of the Project, ten Research/Extension (R/E) Centers will be created where both research and extension staff are working together to develop a strong linkage between researchers and extension staff, farm families and Governorates technology transfer programs. Agricultural technical practices are developed in some commodities but this development will continue until technical practices have been developed in all commodities. These practices will be constantly tested, reviewed and improved.

Implementation activities will begin with the current organizational structure and staff. ADD information on other programs in the Governorates. The capacity to transfer technology will be improved in the modified system as the individuals and their activities progress. As mentioned in the background section, training sessions have been developed where important linkages concerning research practices have been created between the researchers and on-farm research staff. In the NARP Technology Transfer Component the ARC R/E Centers will be created to improve the linkage between research and extension. ARC researchers will become ARC research subject matter specialists to further the linkage concerning research to the district extension officers. The district extension officers will organize and train the extension staff to work with farm families. Selection of subject matter specialists for training district extension officers in some crops will begin immediately so that the flow of new technology is continued and not delayed.

After the initial mobilization phase has begun, plans have been developed and initial activities started, the full implementation of all of the elements will start. One of the key factors is that research and extension will be more fully integrated with each other with involvement of extension and farmers started at the on-farm level. In most instances, the on-farm trials will be researcher managed and conducted by the subject matter specialists and extension staff on farmer's fields. As the research progresses to the on-farm demonstration level the researchers will still be involved but mostly in a supervisory level while the extension staff are managing the trials with more involvement of the farmer.

## 1. Create Research/Extension (R/E) Centers

Creation of R/E Centers is a high priority. Initially two Research Centers will be selected to be converted into R/E Centers to serve as models in which to test new organizational and operational procedures. Over the life of the Project 10 R/E Centers will be created from existing ARC Research Stations to serve two adjacent Governorates. The addition of the extension function, will help researchers become more involved as Subject matter specialists so as to create a steady flow of new technology from research through the public extension service and other public and non-public extension to the farm families. The R/E Centers will become involved in helping Governorates design and implement their technology transfer programs. This will help in creating a feedback mechanism of farmer's needs which is essential for designing adaptive and zonal research programs at the experiment stations.

The R/E Centers will work with the Governorates in incorporating research and extension related activities, such as providing Subject matter specialists, into the Governorate technology transfer plans. The plans will consider local conditions, both agronomic and cultural, and be coordinated with other public and private agencies represented in the Governorates. The R/E Center staff will link with Governorate officials and planning groups to coordinate and integrate technology information, material and training into Governorate planning.

The activities and responsibilities are to:

Activities	Person(s) Responsible
1. Select initial 2 Research Centers	DG, CD, MTG
2. Identify and Appoint TT staff at the selected R/E Centers for management, training and communications	DG, CD, MTG
3. Develop a work plan	MTG, TT staff, TA
4. Train staff to integrate Research. & Ext. as needed for TT function	CD, MTG, TT staff, TA
5. Central level staff and R/E staff work with Governorate staff to implement technology transfer plans.	MTG, TT staff, GTG, Gov. staff
6. Identify and process staff for out-of-country training	CD, MTG, GTG, TA, Training Contractor
7. Implement in-country training activities	TT staff

## 2. Create linkage between extension and research staff and upgrade capabilities to implement technology transfer programs

Research subject matter specialists (SMS) and extension SMS will play a key role in transferring technical information and providing the

linkage between the researchers, extension staff and farmers. The NARP Research Component has already been very successful in developing a good linkage between the researchers and the On-Farm Research (OFR) staff.

Beginning implementation activities will start with the current organizational structure and staff. Improvements will be made both in the organization and the staff as the implementation activities begin to link and integrate the extension and research system together to transfer technology. As mentioned in the background section, training sessions have been developed within NARP where important linkages concerning research practices have been strengthened between the researchers and on farm research staff. This linkage will continue and be expanded by involving extension staff and farm families in the Technology Transfer Component activities. The district extension officers will be responsible to train the extension village agents. It is estimated that extension village agents will work in an area which averages 500 feddans. The NARP Technology Transfer Component may concentrate mostly on the linkage of the research SMS, the OFR specialist and extension SMS specialists. The extension SMS will then train the district extension officers to be trainers of village extension agents and selected farmers. Plans developed with CAAES and other organizations will determine how much training will be conducted with the extension agents directly through this Component.

Training programs for extension women may begin in Gharbiya and Menya Governorates where previous research concerning roles of women in agriculture and their needs have been conducted through the EMCIP and the IFAD Project. Women have previously been involved in on-farm demonstrations especially in Lower Egypt and in both regions they are heavily involved in care of animals and post harvest activities.

Activities and responsibilities in this element are to:

Activities	Person(s) Responsible
1. Review programs which are currently conducting technology transfer functions	MTG, TA
2. Develop & test plans to define the current & future role and responsibilities of the different involved organizations in research and extension	MTG, TA
3. Meet with representatives to clearly refine and approve a work plan	MTG, TA
4. Select subject matter specialists	DG, CD, CAAES
5. Involve extension and farmers in researcher managed trials	Res. & Ext. staff, farmers
6. Plan and implement training of SMS with District Extension staff.	Res. staff, MTG, SMS, CAMD. TA
7. Implement training for extension village agents & farmers	CAAES, farmers, CAMD

- |   |           |
|---|-----------|
| 8. Work with Governorate staff in planning & implementing Governorate plans.  | MTG, TA   |
| 9. Work with communication unit to design information and mass media material | CAAES, TA |

3. *Produce Technical Information Practices and Related Material*

Currently tested technical practices are available for many of the commodities. These practices must be continually revised and new information prepared so that appropriate technology is available to intermediary groups as reference materials for farmers through mass media or individual contacts. The CAAES communication unit will work with researchers to produce materials that are appropriate for training or for use in dissemination of information.

Activities and responsibilities in this element are to:

Activities	Person(s) Responsible
1. Review current publication and training material	CAAES, TA
2. Devise plan to revise and produce new materials	CAAES, MTG, TA
3. Prepare materials for reference, training, mass media, individual contact	NARP Research staff CAAES, TA
4. Test and continually revise as required	CAAES, NARP Research staff

**C. Strengthen Planning and Management of a Decentralized Technology Transfer System**

Implementation in this area depends mostly on developing an infrastructure for involving people and implementing programs at the Governorate level. The needs of the farm families and other clientele groups must be assessed, and addressed. Plans will be developed and activities implemented to help solve some of the constraints in transferring technology. Different cropping patterns and farming techniques in these regions may create a requirement for different kinds of technical information.

A Governorate Task group will be formed at the central level to help develop policy and procedural guidelines for Governorate Plans. Governorates will be selected to help develop and test plans to request assistance, implement programs and monitor progress. Staff at the central level and at the R/E Centers will be available and trained to support the Governorate requests.

Governorate technology transfer plans will be prepared at the Governorate level to request assistance from NARP in areas such as technical assistance, training, or procurement of some commodities and

budgetary supplemental costs. Implementation approaches will be flexible because past projects and other factors have influenced the Governorates to create different organizational structures. The approach is to support the Governorates in developing and managing their own technology transfer programs in a way that best meets the needs of their farm families and other clientele groups.

Orientation and training is essential to create awareness of the programs as well as to properly implement the procedures.

**1. *Develop capabilities for planning, managing and implementing technology transfer programs at the Governorate level***

NARP Technology Transfer staff will be selected from the Component Directors office, AERDRI, CAAES and the R/E Centers to work in consultation with Governorate officials to design procedures for the development of Governorate plans and develop the responsibilities of the Governorates and supporting agencies in the planning and implementation of Governorate technology transfer programs. The selected staff plus the Governorate staff from a select number of Governorates will form a Governorate Task Group (GTG) in the beginning phase. They will develop the process and pretest manuals, outlines or guidelines which describe the benefits, training and resources which are available through NARP. Evaluation forms, criteria for selection, report forms and procedures for submitting and processing requests for assistance will be formulated and tested.

After the beginning phase, additional Governorates will be selected and added to complete a decentralized planning and implementing process in 20 Governorates.

Activities and responsibilities in this element are to:

Activities	Person(s) Responsible
1. Appoint a Governorate Task Group (GTG)	CD, CAAES, AERDRI
2. Outline roles, responsibilities for GTG	CD, CAAES, AERDRI & GTG
3. Develop policy and procedural guidelines for development of Governorate plans	CD, MTG, TA
4. Select initial Governorates to help develop and test Governorate plans	DG, CD, MTG
5. Draft Plan of Work & involve selected Governorates in developing detailed procedural guidelines, manuals, training, plan development, forms, evaluation, & requests for assistance	Gov. staff, GTG, TA
6. Revise & finalize plans with initial Governorates	Gov. staff, GTG, TA
7. Organize Governorate Extension Councils	Under Sec. Ag, Gov. staff, CAAES, GTG

- |  |                                      |
|--|--------------------------------------|
| 8. Organize village planning committees, link them to the Governorate planning process | CAAES, TT & Gov. staff               |
| 9. Select remaining Governorates in all areas  | DG, CD, MTG                          |
| 10. Implement Governorate planning in all areas  | TT and Gov. staff                    |
| 11. Prepare annual Governorate technology and transfer plans                           | MTG, Gov. Councils & staff           |
| 12. Identify and process people who will travel for out of country training            | CD, MTG, GTG, TA Training Contractor |

2. *Create and Implement Training Opportunities for Governorate Officials, Staff and Participants Involved in Planning, Implementing and Supporting Governorate Technology Transfer Plans*

Training is critical to support the planning, management, and implementation of the Governorate technology transfer programs. NARP staff will work with Governorate officials to review the opportunities as well as guidelines and procedures for submission of plans, rules for implementation, evaluation, reporting and monitoring. Needs assessment will be used to help develop plans.

Activities and responsibilities in this element are to:

Activities	Person(s) Responsible
1. Orientation session in selected Governorates for Under-Secretaries and Extension Directors, & other Governorate staff	CD, CAAES, MTG
2. Train Governorate Extension leaders in needs assessments, organization of councils and committees, program planning, preparation of plans, submission of requests	AERDRI, TT Training Unit, CAMD
3. Develop & implement training for Gov. Extension Councils and Village Planning Committees	GTG, TT Training Unit, CAMD
4. Develop & implement training for staff in extension & non-extension agencies who are involved in supporting Governorate technology transfer	GTG, TT Training Unit, CAMD

3. *Create Support and Establish Linkages to Implement Governorate Programs*

The management levels of the NARP Technology Transfer System must ensure development of effective linkages between the Governorate technology transfer programs and the programs which will provide support. In the technical area, ARC Institutes, R/E Centers, On-Farm Research, and other research groups need to be involved with the Governorate planning process to assist in the program implementation and monitoring. There could be research

advisory groups established in each Governorate. The R/E Center will serve as the linkage between technical staff from ARC.

Training will be provided from the central level as well as other organizations to help plan, coordinate and train trainers who will be involved at the Governorate level. The support agencies will have orientation programs to help them understand their role in supporting the Governorates. Other support will be provided from the CAAES communication unit to help prepare training materials, training aids and mass media.

The Management Information System (MIS) should be developed early so base line information can be gathered for later evaluation of progress. Report forms can be integrated into the monitoring process.

Activities and responsibilities in this element are to:

Activities	Person(s) Responsible
1. Orient senior staff from ARC Institutes, R/E Centers, CAAES, training, MIS, on approach being used for designing and implementing Governorate plans	CD, MTG, GTG, TA
2. Outline roles, responsibilities, work plans for R/E support & central level support	CD, GTG, MTG, TA R/E Center staff
3. Governorate Task Groups meet with Management Task Group to coordinate and integrate work with staff from central support level & selected Governorates	CD, MTG, GTG, TA Gov. staff

#### **D. Encourage Participation of Non-Public Extension Service Agencies**

Funds are available to work with organizations which are not part of the Extension Service to participate in the development and implementation of the Governorate's public extension programs. A \$3.5 million grant fund can be used to build institutional capabilities, receive training on new methods or research, test and develop new types of technology practices and develop communication materials. Funds will also be available to conduct programs which are aimed at special groups of people especially in the hard to reach segments such as community development associations, cooperatives, youth, women or self help groups in the agricultural community.

##### *1. Strengthening Non-Extension Organizations to Conduct Technology Transfer Activities*

Organizations outside of the public extension service are in contact with the farmer providing information about farming practices. These groups, which are non-extension service organizations, both government and non-governmental, will be offered assistance through the NARP Technology Transfer Component to conduct activities such

as training, which will potentially help increase agricultural production. The activities will be problem focused based on farmer's needs, be planned and implemented with the farmers' participation and complement the efforts of the Governorate public extension service.

Activities and responsibilities in this element are to:

Activities	Person(s) Responsible
1. Review of non-extension organizations which are currently involved in TT.	CD, MTG, TA
2. Conduct orientation meetings with them to explain NARP Technology Transfer objectives and opportunities	CD, MTG, TA
3. Conduct needs assessment to find out the types of assistance needed	AERDRI, TT Training Unit
4. Prepare guidelines for obtaining assistance from NARP	MTG, TA
5. Implement programs appropriate to complementing efforts in the Governorates relating to transferring technology	MTG, TT Staff
6. Evaluate, monitor and revise programs	AERDRI, MTG,
7. Nominate and process out-of-country trainees	CD, MTG, TA. Training Contractor

## 2. *Special Grants for Increasing Participation or Innovative Programs*

Funds will be available for public and private groups to conduct special activities which will contribute to a better understanding of the technology adoption process such as development and testing of new types of technology practices, prototype communication materials, new extension methods, innovative training programs, etc.

Activities and responsibilities in this element are to:

Activities	Person(s) Responsible
1. Prepare guidelines and procedures for organizations to apply and receive grants	MTG, TT staff, TA
2. Notify organizations of the opportunities for funding from NARP	CD, MTG, TT staff
3. Review proposals	CD, MTG, TA
4. Fund priority programs	CD, MTG
5. Prepare annual report and review annual work plans	Special Grant staff, MTG
6. Monitor and evaluate results	AERDRI, MTG, TT staff, Private Org

## **V. OUTPUTS**

In section B-2 of the Logical Framework contained in the Project Paper Amendment No. 2, the end of project status concerning technology transfer is:

- Technology and transfer activities based on local farmers needs, planned and implemented with active participation of farmers, public and non-public extension service agencies
- Farmers knowledge and effective use of improved technological practices significantly increased

In the same section of the Logical Framework, Project Outputs C-1, the technology transfer objectively verifiable indicators in Section C-2 are:

- Governorate level extension councils, with adequate farmer representation, in all 20 agricultural Governorates, established and effectively functioning
- Service delivery capability of the decentralized public extension service strengthened
- A large number of non-public extension agencies actively participating in the technology transfer process
- Linkages between and among public extension, non-public extension service entities, research community and farmers strengthened
- ARC/Central Administration for Agricultural Extension Services ability in support of the technology and transfer system strengthened

## **VI. TECHNICAL ASSISTANCE**

Technical assistance will be contracted from the Consortium for International Development (CID). Two long term advisors will work on the Transfer Technology Component. The On-Farm Research Advisor will provide the technical assistance link between the research component and the transfer technology component.

One advisor will concentrate in providing assistance to strengthen capabilities at the central management level and to assist in training activities of people who are involved in this component. In the beginning phase this involves developing overall plans for building a management team, designing of manpower development and training plans, procurement plans and other plans as necessary in each element. The other person will concentrate heavily in providing assistance in creating research extension linkages and in management of the Governorate Programs. Assistance will be provided in the design as well as development of guidelines, orientation programs and other outputs that are relevant to the Governorate Program area.

Short term technical assistance advisors will be needed mostly on a TDY recurring basis. The Training Plan developed in the beginning phase will outline the numbers, types and duties of the TDY's which will be utilized. One important aspect of implementing the NARP Technology Transfer Component relies on using recurring TDYs to focus on development of specific program areas. These recurring TDYs will visit 2-3 times in the year that the specific program areas are started and it is expected that they will continue to be involved intermittently for several more years. Their task is to serve as a facilitator in their particular program element preparing materials and setting a base for the long-term TA and NARP personnel to work on after completing their TDY assignment. The TDYs required at specific times will be identified in the Annual Implementation and Financial Plans.

Locally hired professionals are needed to help in management of the project as well as in the implementation of training and Governorate programming process and in some of the more technical aspects of support services. These professionals are vital to:

- Develop liaison between research and extension units, non-governmental entities and Governorate officials, councils and village councils
- Assist in development of guidelines, manuals and training materials including audiovisuals
- Implement daily activities in management, training, Governorate plans and grants which help the NARP Deputy Director manage the Component

## **VII. BUDGET**

The budget is summarized in the attached sheet. It remains identical to the one that was approved under the Project Amendment No. 2 at this time. The Management Task Group will review and revise the budget as needed after the Training Needs Assessments, Procurement Plan and Implementation Plans are drafted and completed.

**NATIONAL AGRICULTURAL RESEARCH PROJECT**  
(263 0152)  
AMENDMENT NO 2

**AGRICULTURAL TECHNOLOGY TRANSFER COMPONENT**  
**COST ESTIMATE**  
(\$000)

PROJECTION OF EXPENDITURES BY FISCAL YEARS

	FY89		FY90		FY91		FY92		FY93		FY94		TOTAL		TOTAL
	US\$	LC	US\$	LC	US\$	LC									
<b>TECHNICAL ASSISTANCE</b>	861	132	876	72	876	72	696	72	516	72	471	72	4,296	492	4,788
LONG TERM	336	72	336	72	336	72	336	72	336	72	336	72	2,016	432	2,448
SHORT TERM	525	60	540	0	540	0	360	0	180	0	135	0	2,280	60	2,340
<b>TRAINING</b>	320	1,629	675	1,629	555	1,599	375	1,597	225	1,596	110	1,567	2,260	9,617	11,877
LONG TERM	210	0	510	0	390	0	210	0	60	0	0	0	1,380	0	1,380
SHORT TERM	110	1,629	165	1,629	165	1,599	165	1,597	165	1,596	110	1,567	880	9,617	10,497
<b>COMMODITIES</b>	2,052	1,124	5,957	1,124	1,212	110	0	110	0	110	0	110	9,221	2,688	11,909
OFFICE EQUIP. / SUPPLIES	0	1,124	220	1,124	587	110	0	110	0	110	0	110	807	2,688	3,495
VEHICLES	0	0	1,495	0	0	0	0	0	0	0	0	0	1,495	0	1,495
MOTORCYCLES	2,052	0	2,052	0	0	0	0	0	0	0	0	0	4,104	0	4,104
MEDIA PRODUCTION EQUIP.	0	0	2,190	0	625	0	0	0	0	0	0	0	2,815	0	2,815
<b>SERVICES</b>	75	3,225	75	3,046	125	1,715	100	1,461	50	1,230	0	1,280	425	11,957	12,382
DEMONSTRATION	0	680	0	680	0	680	0	680	0	680	0	680	0	4,080	4,080
TRAVEL	0	500	0	375	0	250	0	125	0	0	0	0	0	1,250	1,250
MAINTENANCE	0	230	0	173	0	115	0	58	0	0	0	0	0	576	576
PRINTING	0	140	0	105	0	70	0	35	0	0	0	0	0	350	350
MEDIA	0	160	0	120	0	80	0	40	0	0	0	0	0	400	400
ADMINISTRATION	0	90	0	68	0	45	0	23	0	0	0	0	0	225	226
OFFICE RENOVATION	0	1,000	0	1,000	0	0	0	0	0	0	0	0	0	2,000	2,000
TECH. TRANSFER GRANTS	75	425	75	525	125	475	100	500	50	550	0	600	425	3,075	3,500
<b>SUB-TOTAL</b>	<b>3,308</b>	<b>6,110</b>	<b>7,583</b>	<b>5,871</b>	<b>2,768</b>	<b>3,496</b>	<b>1,171</b>	<b>3,240</b>	<b>791</b>	<b>3,008</b>	<b>581</b>	<b>3,029</b>	<b>16,202</b>	<b>24,754</b>	<b>40,956</b>
CONTINGENCIES 5%	165	306	379	294	138	175	59	162	40	150	29	151	810	1,238	2,048
INFLATION	165	672	777	1,029	436	732	252	942	219	1,139	198	1,434	2,047	5,948	7,996
<b>TOTAL</b>	<b>3,639</b>	<b>7,088</b>	<b>8,739</b>	<b>7,193</b>	<b>3,343</b>	<b>4,403</b>	<b>1,482</b>	<b>4,344</b>	<b>1,049</b>	<b>4,297</b>	<b>808</b>	<b>4,614</b>	<b>19,060</b>	<b>31,940</b>	<b>51,000</b>

**NATIONAL AGRICULTURAL RESEARCH PROJECT**  
(263 0152)  
**AMENDMENT NO 2**

**AGRICULTURAL TECHNOLOGY TRANSFER COMPONENT**  
**TECHNICAL ASSISTANCE COST ESTIMATE**  
(\$000)

PROJECTION OF EXPENDITURES BY FISCAL YEARS

SPECIALIZATION	NO. OF M.M.	COST PER MAN MONTH		TOTAL		FY88		FY90		FY91		FY92		FY93		FY94		TOTAL
		US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	
<b>LONG TERM</b>	<b>144</b>			<b>2,016</b>	<b>432</b>													
Extension Specialist (CID)	72	14.0	3.0	1,008	216	168	36	168	36	168	36	168	36	168	36	168	36	2,448
Extension Specialist (CID)	72	14.0	3.0	1,008	216	168	36	168	36	168	36	168	36	168	36	168	36	1,224
																		1,224
<b>SHORT TERM</b>	<b>182</b>			<b>2,280</b>	<b>60</b>	<b>525</b>	<b>60</b>	<b>540</b>	<b>0</b>	<b>540</b>	<b>0</b>	<b>360</b>	<b>0</b>	<b>180</b>	<b>0</b>	<b>135</b>	<b>0</b>	<b>2,340</b>
<b>EXTENSION</b>																		
Rural Sociology	5	15.0	0.0	75	0	15	0	15	0	15	0	15	0	15	0	0	0	75
Agricultural Education	4	15.0	0.0	60	0	0	0	15	0	30	0	15	0	0	0	0	0	60
Agricultural Communications	5	15.0	0.0	75	0	30	0	30	0	15	0	0	0	0	0	0	0	75
Adult Education	3	15.0	0.0	45	0	15	0	15	0	15	0	0	0	0	0	0	0	45
Rural Youth Organizations	4	15.0	0.0	60	0	30	0	15	0	15	0	0	0	0	0	0	0	60
Women's Development Program	3	15.0	0.0	45	0	15	0	15	0	15	0	0	0	0	0	0	0	45
Cooperative Organizations	3	15.0	0.0	45	0	0	0	15	0	0	0	0	0	0	0	0	0	45
Training Methodology	5	15.0	0.0	90	0	0	0	30	0	30	0	0	0	0	0	0	0	90
Training Curriculum	5	15.0	0.0	75	0	0	0	15	0	15	0	15	0	15	0	15	0	75
Farm Management	2	15.0	0.0	30	0	0	0	15	0	15	0	0	0	0	0	0	0	30
Farming Systems	2	15.0	0.0	30	0	0	0	0	0	30	0	0	0	0	0	0	0	30
<b>MASS MEDIA</b>																		
A.V. Specialist	3	15.0	0.0	135	0	0	0	0	0	30	0	30	0	30	0	15	0	135
Advertising	3	15.0	0.0	45	0	0	0	0	0	0	0	45	0	0	0	0	0	45
Publication Layout	6	15.0	0.0	90	0	0	0	0	0	45	0	45	0	0	0	0	0	90
Print Media	3	15.0	0.0	45	0	0	0	15	0	15	0	0	0	0	0	0	0	45
<b>SUPPORT</b>																		
Management Analyst	6	15.0	0.0	90	0	15	0	15	0	15	0	15	0	15	0	15	0	90
Financial Management	6	15.0	0.0	90	0	15	0	15	0	15	0	15	0	15	0	15	0	90
Equipment Repairs & Maintenance	4	15.0	0.0	60	0	0	0	15	0	15	0	15	0	15	0	0	0	60
Computer Programming & Software	6	15.0	0.0	90	0	0	0	15	0	15	0	15	0	15	0	15	0	90
Commodity Procurement	2	15.0	0.0	30	0	15	0	15	0	0	0	0	0	15	0	15	0	30
Agricultural Economics	2	15.0	0.0	30	0	0	0	0	0	15	0	15	0	0	0	0	0	30
Privatization	2	15.0	0.0	30	0	0	0	0	0	15	0	15	0	0	0	0	0	30
Invited Papers / Speakers	4	15.0	0.0	60	0	0	0	15	0	15	0	0	0	0	0	0	0	60
Inventory Specialist	3	15.0	0.0	45	0	0	0	0	0	15	0	15	0	0	0	0	0	45

**NATIONAL AGRICULTURAL RESEARCH PROJECT**  
(263 0152)  
AMENDMENT NO 2

**AGRICULTURAL TECHNOLOGY TRANSFER COMPONENT**  
TECHNICAL ASSISTANCE COST ESTIMATE  
(\$000)

PROJECTION OF EXPENDITURES BY FISCAL YEARS

SPECIALIZATION	NO OF MM	COST PER MAN MONTH		TOTAL		FY89		FY90		FY91		FY92		FY93		FY94		TOTAL
		US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	
<b>MONITORING</b>																		
Program Design	7	15.0	0.0	105	0	15	0	30	0	15	0	15	0	15	0	15	0	105
Methodology	5	15.0	0.0	75	0	30	0	15	0	15	0	15	0	0	0	0	0	75
Program Analysis	6	15.0	0.0	90	0	0	0	15	0	30	0	15	0	15	0	15	0	90
Survey Statistician	3	15.0	0.0	45	0	0	0	30	0	0	0	15	0	0	0	0	0	45
<b>GOVERNORATE PLANNING PROG</b>																		
US Extension Programmers	15	15.0	0.0	225	0	30	0	45	0	45	0	45	0	30	0	30	0	225
Egyptian Specialists	30	0.0	2.0	0	60	0	60	0	0	0	0	0	0	0	0	0	0	60
<b>PRE IMPLEMENTATION</b>	<b>18</b>	<b>15.0</b>	<b>0.0</b>	<b>270</b>	<b>0</b>	<b>270</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>270</b>
<b>TOTAL</b>	<b>326</b>			<b>4,296</b>	<b>492</b>	<b>861</b>	<b>132</b>	<b>876</b>	<b>72</b>	<b>876</b>	<b>72</b>	<b>696</b>	<b>72</b>	<b>516</b>	<b>72</b>	<b>471</b>	<b>72</b>	<b>4,788</b>

NATIONAL AGRICULTURAL RESEARCH PROJECT  
(PG 0152)  
AMENDMENT NO. 2

AGRICULTURAL TECHNOLOGY TRANSFER COMPONENT  
TRAINING COST ESTIMATE  
(\$'000)

PROJECTION OF EXPENDITURES BY FISCAL YEARS

ILLUSTRATIVE TRAINING PROGRAM	No. OF PART.	TRG. MO (T M)	COST PER UNIT		TOTAL		FY89		FY90		FY91		FY92		FY93		FY94		TOTAL
			US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	
<b>LONG TERM TRAINING</b>	19	552			1,380	0	210	0	510	0	390	0	210	0	0	0	0	0	1,380
<b>MASTERS STUDIES</b>																			
EXTENSION METHODOLOGY	2	56	2.5	0.0	140	0	0	0	0	0	20	0	0	0	0	0	0	0	140
RESEARCH DISSEMINATION	1	28	2.5	0.0	70	0	30	0	30	0	10	0	0	0	0	0	0	0	70
AGRICULTURAL COMMUNICATIONS	1	28	2.5	0.0	70	0	0	0	30	0	30	0	0	0	0	0	0	0	70
RESEARCH PACKAGING	1	28	2.5	0.0	70	0	0	0	30	0	30	0	10	0	0	0	0	0	70
AGRICULTURAL EXTENSION	2	56	2.5	0.0	140	0	0	0	30	0	30	0	10	0	0	0	0	0	70
AGRICULTURAL EDUCATION	1	28	2.5	0.0	70	0	0	0	60	0	60	0	20	0	0	0	0	0	140
ADULT EDUCATION	1	28	2.5	0.0	70	0	0	0	30	0	30	0	10	0	0	0	0	0	70
<b>DOCTORAL STUDIES</b>	5	240	2.5	0.0	600	0	90	0	150	0	150	0	150	0	0	0	0	0	600
<b>POST DOCTORAL</b>																			
EDUCATION PLANNING & DEVELOPMENT	1	12	2.5	0.0	30	0	30	0	0	0	0	0	0	0	0	0	0	0	30
COMMUNICATIONS PRODUCTION	1	12	2.5	0.0	30	0	0	0	30	0	0	0	0	0	0	0	0	0	30
COMMUNICATION DISSEMINATION	1	12	2.5	0.0	30	0	0	0	30	0	0	0	0	0	0	0	0	0	30
RESEARCH PRESENTATION	1	12	2.5	0.0	30	0	0	0	30	0	0	0	0	0	0	0	0	0	30
DATA PRESENTATION	1	12	2.5	0.0	30	0	0	0	0	0	30	0	0	0	0	0	0	0	30
<b>SHORT TERM TRAINING</b>	29,579	64,217			880	9,615	110	1,629	165	1,629	165	1,599	165	1,597	165	1,596	110	1,567	10,497
<b>OUT-OF-COUNTRY</b>	160	160			880	0	110	0	165	0	165	0	165	0	165	0	110	0	880
SHORT COURSES	60	60	5.5	0.0	330	0	55	0	55	0	55	0	55	0	55	0	55	0	330
GOV. PLNG PROGRAM OBSERV TOURS	100	100	5.5	0.0	550	0	55	0	110	0	110	0	110	0	110	0	55	0	330
<b>IN-COUNTRY</b>	29,419	64,057			0	9,615	0	1,629	0	1,629	0	1,599	0	1,597	0	1,596	0	1,567	9,617
<b>PRE-SERVICE TRAINING</b>																			
EXTENSION	10,000	5,000	0.0	0.135	0	675	0	135	0	135	0	108	0	108	0	108	0	81	675
<b>IN SERVICE TRAINING</b>																			
SUBJECT MATTER SPECIALISTS	900	2,700	0.0	0.135	0	365	0	61	0	61	0	61	0	61	0	61	0	60	365
GOVERNORATE (ES) STAFF	217	651	0.0	0.135	0	88	0	15	0	15	0	15	0	15	0	14	0	14	88
DISTRICT SUPERVISION (ES)	650	1,950	0.0	0.135	0	263	0	44	0	44	0	44	0	44	0	44	0	43	263
VETERINARIANS	1,000	3,000	0.0	0.135	0	405	0	68	0	68	0	68	0	67	0	67	0	67	405
EXTENSION AGENTS	12,000	36,000	0.0	0.135	0	4,860	0	810	0	810	0	810	0	810	0	810	0	810	4,860

NATIONAL AGRICULTURAL RESEARCH PROJECT  
(263 0152)  
AMENDMENT NO 2

AGRICULTURAL TECHNOLOGY TRANSFER COMPONENT  
COMMODITY COST ESTIMATE  
(\$000)

PROJECTION OF EXPENDITURES BY FISCAL YEARS

ILLUSTRATIVE COMMODITIES ITEMS	NUMBER OF UNITS			COST PER UNIT		TOTAL		FY89		FY90		FY91		FY92		FY93		FY94		TOTAL
	CAAES	AERDRI	GOVERN	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	
OFFICE EQUIP./ SUPPLIES	53	105	4,180			807	2,688	0	1,124	220	1,124	587	110	0	110	0	110	0	110	3,495
COMPUTER / SOFTWARE	7	12	20	5.0	0.0	195	0	0	0	0	0	195	0	0	0	0	0	0	0	195
COPIER	3	10	20	3.0	0.0	99	0	0	0	0	0	99	0	0	0	0	0	0	0	99
COLLATING COPIERS	1	1	20	7.5	0.0	165	0	0	0	0	0	165	0	0	0	0	0	0	0	165
MICROFICHE	1	0	0	3.0	0.0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	3
TYPEWRITERS	16	30	60	1.0	0.0	106	0	0	0	0	0	106	0	0	0	0	0	0	0	106
BINDING MACHINES	8	10	20	0.5	0.0	19	0	0	0	0	0	19	0	0	0	0	0	0	0	19
OFFICE FURNITURE	15	40	4,000	0.0	0.5	0	2,028	0	1,014	0	1,014	0	0	0	0	0	0	0	0	2,028
OFFICE SUPPLIES	2	2	40	5.0	15.0	220	660	0	110	220	110	0	110	0	110	0	110	0	110	880
VEHICLES-VANS	5	20	40	23.0	0.0	1,495	0	0	0	1,495	0	0	0	0	0	0	0	0	0	1,495
MOTORCYCLES	25	40	2,500	1.6	0.0	4,104	0	2,052	0	2,052	0	0	0	0	0	0	0	0	0	4,104
MEDIA PRODUCTION EQUIP.	72	62	980			2,815	0	0	0	2,190	0	625	0	0	0	0	0	0	0	2,815
MOBILE VANS	5	0	20	50.0	0.0	1,250	0	0	0	625	0	625	0	0	0	0	0	0	0	1,250
VIDEO RECORDER/T.V. SETS	10	10	160	2.0	0.0	360	0	0	0	360	0	0	0	0	0	0	0	0	0	360
VIDEO CAMERA, TRIPOD, ETC.	20	10	160	2.0	0.0	380	0	0	0	380	0	0	0	0	0	0	0	0	0	380
OVERHEAD PROJECTOR	15	10	160	0.8	0.0	111	0	0	0	111	0	0	0	0	0	0	0	0	0	111
TRANSPARENCY MAKERS	5	10	160	1.0	0.0	175	0	0	0	175	0	0	0	0	0	0	0	0	0	175
35MM CAMERA / FILMS	10	10	160	1.5	0.0	270	0	0	0	270	0	0	0	0	0	0	0	0	0	270
INSTRUCTION EQUIPMENT	7	12	160	1.5	0.0	269	0	0	0	269	0	0	0	0	0	0	0	0	0	269
<b>TOTAL</b>	<b>155</b>	<b>227</b>	<b>7,700</b>			<b>9,221</b>	<b>2,688</b>	<b>2,052</b>	<b>1,124</b>	<b>5,957</b>	<b>1,124</b>	<b>1,212</b>	<b>110</b>	<b>0</b>	<b>110</b>	<b>0</b>	<b>110</b>	<b>0</b>	<b>110</b>	<b>11,909</b>

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NATIONAL AGRICULTURAL RESEARCH PROJECT  
(263 0152)  
AMENDMENT NO. 2

AGRICULTURAL TECHNOLOGY TRANSFER COMPONENT  
SERVICES COST ESTIMATE  
(\$000)

PROJECTION OF EXPENDITURES BY FISCAL YEARS

ITEMS	FY89		FY90		FY91		FY92		FY93		FY94		TOTAL
	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	US\$	LC	
DEMONSTRATION	0	680	0	680	0	680	0	680	0	680	0	680	4,080
TRAVEL ***	0	500	0	375	0	250	0	125	0	0	0	0	1,250
MAINTENANCE ***	0	230	0	173	0	115	0	58	0	0	0	0	576
PRINTING ***	0	140	0	105	0	70	0	35	0	0	0	0	350
MEDIA ***	0	160	0	120	0	80	0	40	0	0	0	0	400
ADMINISTRATION ***	0	90	0	68	0	45	0	23	0	0	0	0	226
RENOVATION	0	1,000	0	1,000	0	0	0	0	0	0	0	0	2,000
TECHNOLOGY TRANSFER GRANTS	75	425	75	525	125	475	100	500	50	550	0	600	3,500
<b>TOTAL</b>	<b>75</b>	<b>3,225</b>	<b>75</b>	<b>3,046</b>	<b>125</b>	<b>1,715</b>	<b>100</b>	<b>1,461</b>	<b>50</b>	<b>1,230</b>	<b>0</b>	<b>1,280</b>	<b>12,382</b>

**COST ASSUMPTIONS**

1. DEMONSTRATION: 1 DEMONSTRATION PER VILLAGE/YEAR, 25 VILLAGES PER DISTRICT, 8 DISTRICTS PER GOVERNORATE, 20 GOVERNORATES @ \$170/DEMONSTRATION (ONE FEDAN) @ 6 YEARS.
  2. TRAVEL: 4000 VILLAGE EXTENSION AGENTS @ 200 DAYS/YEAR + 1335 DISTRICT STAFF @ 120 DAYS/YEAR + 460 GOVERNORATE STAFF @ 87 DAYS/YEAR ; @ \$0.50 /DAY
  3. MAINTENANCE: 20 GOVERNORATES, @ \$11500/YEAR
  4. PRINTING: 20 GOVERNORATES @ \$7000/YEAR
  5. MEDIA: 20 GOVERNORATES @ \$8000/YEAR
  6. ADMINISTRATION: 20 GOVERNORATES @ \$4500/YEAR
  7. RENOVATION: 20 GOVERNORATES @ \$100000/GOVERNORATE
  8. TECHNOLOGY TRANSFER GRANTS: FUNDS ARE SET ASIDE FOR SMALL GRANTS TO INDIVIDUALS OR ORGANIZATION
- \*\*\* THESE OPERATIONAL COSTS WILL BE SHARED WITH MOA, THE ABOVE AMOUNTS REPRESENT AID CONTRIBUTION WHICH ACCOUNT FOR 100% IN YEAR 1, 75% IN YEAR 2, 50% IN YEAR 3, AND 25% IN YEAR 4.



**LIFE OF PROJECT PLAN (LOPP)**  
**NARP TECHNOLOGY TRANSFER (TT) IMPLEMENTATION ACTIVITIES (By Quarters)**

A. STRENGTHEN PLANNING AND MANAGEMENT CAPABILITY	7 / 88		7 / 89				7 / 90				7 / 91				7 / 92				7 / 93			
	6 / 89		6 / 90		6 / 91		6 / 92		6 / 93		6 / 94		6 / 95		6 / 96		6 / 97					
	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

**3 Strengthen the Communication Support**

- 1 Review current status of communications unit & materials x
- 2 Develop plan for use of communications material in TT x x
- 3 Identify needs for renovation of facilities, renovate facilities x x x x x x x
- 4 Develop communications materials suitable for TT x x x x x x x x x x x x x x x
- 5 Pretest communication materials and programs x x x x x
- 6 Establish, train & support CAES CU in R/E Centers & Gov. x x x x x x x x x x x x x x
- 7 Implement communications in-country training x x x x x x x x x x x x x x

**4 Establish a Management Information System (MIS)**

- 1 Assign staff from AERDRI for MIS x x
- 2 Review current studies & work in MIS x x
- 3 Develop outline for organization of MIS x x x
- 4 Train AERDRI staff & others to organize MIS x x
- 5 Establish a data base system & MIS x x
- 6 Collect baseline data, implement action studies and MIS x x x x x x x x x x x x x x x x
- 7 Publish and disseminate reports and studies x x x x x x x x x x x x x x x
- 8 Conduct seminars & workshop to review & analyze findings x x x x x x x x x x x x x x x

**LIFE OF PROJECT PLAN (LOPP)**  
**NARP TECHNOLOGY TRANSFER (TT) IMPLEMENTATION ACTIVITIES (By Quarters)**

B. STRENGTHEN TECHNOLOGY TRANSFER CAPABILITY OF RESEARCH & EXTENSION SYSTEM WITH THE FARMERS	7 / 88		7 / 89				7 / 90				7 / 91				7 / 92				7 / 93			
	6 / 89		6 / 90				6 / 91				6 / 92				6 / 93				6 / 94			
	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

**1 Create Research/ Extension (R/ E) Centers**

- 1 Select initial 2 Research Centers x
- 2 Identify & Appoint TT staff at the selected R/ E Centers x x
- 3 Develop a work plan x x x
- 4 Train staff to upgrade R/ E Center to include TT function x x x x
- 5 Central level staff & R/E staff work with Gov. staff x x x x x x x x x x x x x x x x
- 6 Identify & process out-of-country trainees for all elements x x x x x x x x x x x x x x
- 7 Implement in-country training x x x x x x x x x x x x x x

**2 Create Linkage Between Ext. & Res. Staff to Implement TT**

- 1 Review programs which are currently conducting TT functions o o
- 2 Develop & test plans to define future linkage role & responsibilities o x x x x
- 3 Meet with representatives to refine & approve work plans o x x x x x
- 4 Select Subject Matter Specialists o x x x x x x
- 5 SMS plan & conduct training with District Extension staff o x x x x x x x x x x x x x x x x x
- 6 Involve ext. and farmers in researcher managed trials x x x x x x x x x x x x x x x x x
- 7 Implement training for extension village agents & farmers x x x x x x x x x x x x x x x x x
- 8 Work with Gov. staff in planning & implementing Gov. plans x x x x x x x x x x x x x x x x
- 9 Work with com. unit to design infor. & mass media material x x x x x x x x x x x x x x x x

**3 Produce Technical Information Practices & Material**

- 1 Review current publication and training material o x x
- 2 Devise plan to revise & produce new materials o x x
- 3 Prepare materials for reference materials, training, mass media o x x x x x x x x x x x x x x x x x
- 4 Test and continually revise as required o x x x x x x x x x x x x x x x x x



**LIFE OF PROJECT PLAN (LOPP)**  
**NARP TECHNOLOGY TRANSFER (TT) IMPLEMENTATION ACTIVITIES (By Quarters)**

	7 / 88		7 / 89				7 / 90				7 / 91				7 / 92				7 / 93			
	6 / 89		6 / 90		6 / 91		6 / 92		6 / 93		6 / 94		6 / 95		6 / 96		6 / 97					
	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

**1 Strengthen Non-Extension Organizations to Conduct TT Activities**

- 1 Review work of non-extension organizations involved in TT x x
- 2 Conduct orientation meetings to explain NARP TT obj. & oppor. x x
- 3 Conduct needs assessment to find out types of assistance needed x x
- 4 Prepare guidelines for obtaining assistance from NARP x x
- 5 Implement TT programs to complement efforts in the Gov. x x x x x x x x x x x x x
- 6 Evaluate, monitor, revise, & report programs x x x x x x x x x x x x
- 7 Nominate and process out-of-country trainees x x x x x x x x x x x x

**2 Special Grants for Increasing Participation &/or Innovative Programs**

- 1 Prepare guideline & procedures for organizations to receive grants x x
- 2 Notify organizations of opportunities for funding from NARP x x
- 3 Review proposals x x
- 4 Fund priority programs x x x
- 5 Monitor, evaluate & report results x x x x x x x x x x x x
- 6 Prepare annual report and review annual work plans x x x x x x x x x x x x

## PUBLICATIONS

<u>PUBLICATION TITLE</u>	<u>PUBLICATION NO.</u>
- <u>Quarterly Report</u> (November - December, 1986)-----	1
- <u>Quarterly Report</u> (January - March, 1987)-----	2
- <u>Implementation Workshop - Proceedings</u> February 9-17, 1987-----	3
- <u>Quarterly Report</u> (April - June, 1987)-----	4
- <u>Life of Project Plan</u> (September, 1987)-----	5
- <u>Implementation and Financial Plan, Fiscal Year 1987-1988</u> (September, 1987)-----	6
- <u>Manual for Grant Research Under NARP</u> (October, 1987)-----	7
- <u>Manpower Development &amp; Training Plan</u> (November, 1987)-----	8
- <u>Quarterly Report</u> (July - September, 1987)-----	9
- <u>Annual Report - 1987</u> (May, 1988)-----	10
- <u>Implementation &amp; Financial Plan FY 1988-1989</u> (August, 1988)-----	11
- <u>List of Approved Proposals Under the Research Support System</u> (December, 1988)-----	12
- <u>Work Plan for the NARP Research Grants Program</u> Part A: For Non-ARC Agricultural Research Institution in Egypt (December, 1988)-----	13
- <u>Procedures for Grant Research Under NARP At Non-ARC Agricultural Research Institutions in Egypt</u> (December, 1988)-----	14
- <u>Quarterly Report</u> (July - September, 1988)-----	15

- Quarterly Report  
(October - December, 1988)----- 16
- Reporting Results Workshop Proceedings and Preparation Guides for  
Research Proposals and Progress and Technical Reports  
(May, 1989) ----- 17
- Quarterly Report  
(January - March, 1989) ----- 18
- NARP Annual Report FY 1988-89 and Implementation and Financial  
Plan for the Research Component FY 1989-90  
(August, 1989)----- 19
- Technology Transfer Component, Implementation and Financial Plan  
(August, 1989)----- 20

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