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TANZANIA FARMER TRAINING AND PRODUCTION PROJECT

FINAL REPORT

**SUBMITTED BY
DAVID G. ACKER**

**CHIEF OF PARTY
WEST VIRGINIA UNIVERSITY
MORGANTOWN, WEST VIRGINIA**

**Contract AID/afr-C-1480
West Virginia University
North Carolina Agricultural and Technical State University
Publication Number 119
September 1984**

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WEST VIRGINIA UNIVERSITY
NORTH CAROLINA AGRICULTURAL AND TECHNICAL STATE UNIVERSITY

THE FARMER TRAINING AND PRODUCTION PROJECT

FINAL REPORT PREPARED BY

DAVID G. ACKER
CHIEF OF PARTY

OFFICE OF INTERNATIONAL PROGRAMS
WEST VIRGINIA UNIVERSITY
MORGANTOWN
WEST VIRGINIA

SEPTEMBER 30, 1984

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ACRONYMS AND ABBREVIATIONS

MATI	=	Ministry of Agriculture Training Institute
USAID	=	United States Agency for International Development
LITI	=	Ministry of Livestock Training Institute
WVU	=	West Virginia University
NCATSU	=	North Carolina Agricultural and Technical State University

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FORWARD

This report provides a comprehensive review of the successes and failures of the Farmer Training and Production Project. It is the intent to provide sufficient information on Project accomplishments that they may be repeated. It is also the intent to candidly discuss failures in enough detail so as to reduce the chance of their repetition elsewhere.

As the Farmer Training and Production Project sustained three formal evaluations¹ during its five year life span and as reports on each of these evaluations are available, this final report will not attempt to perform all of the functions of summative evaluation.

The opinions expressed in this report are those of the author and are not to be construed as those of West Virginia University, the United States Agency for International Development or the Ministry of Agriculture and Livestock Development of the United Republic of Tanzania.

D. G. Acker
Chief of Party
Dar es Salaam

¹. First Annual Evaluation: October 1981
Mid-term Evaluation: May 1982
Final Evaluation: July 1984

INTRODUCTION

This publication reports on the field activities of the Farmer Training and Production Project between October 1, 1979, and September 30, 1984. For additional detail on Project conceptualization, inception and progress during the period 1979-1983 the reader is directed to the following documents:

**TANZANIA FARMER TRAINING AND PRODUCTION PROJECT
PROGRESS REPORT: OCTOBER 1979 - SEPTEMBER 1980**
West Virginia University Division of International
Agriculture and Forestry Publication Number 63
By Lloyd C. Pickett

**TANZANIA FARMER TRAINING AND PRODUCTION PROJECT
PROGRESS REPORT: OCTOBER 1980 - SEPTEMBER 1981**
West Virginia University Division of International
Agriculture and Forestry Publication Number 75
By Lloyd C. Pickett

**TANZANIA FARMER TRAINING AND PRODUCTION PROJECT
PROGRESS REPORT: OCTOBER 1981 - SEPTEMBER 1982**
West Virginia University Division of International
Agriculture and Forestry Publication Number 87
By Lloyd C. Pickett

**TANZANIA FARMER TRAINING AND PRODUCTION PROJECT
PROGRESS REPORT: OCTOBER 1982 - SEPTEMBER 1983**
West Virginia University Division of International
Agriculture and Forestry Publication Number 115
By David G. Acker

PROJECT DEVELOPMENT

Activity aimed at establishing Farmer Training Wings at four Ministry of Agriculture Training Institutes (MATIs) was underway as early as 1974. Ministry of Agriculture officials were interested in improving the effectiveness of agricultural extension work and felt such extension must be designed and demonstrated at village levels.

Historically, the Ministry of Agriculture had involved itself in a variety of farmer training efforts. (For further detail see Appendix: Farmer Training in Tanzania: A brief Historical Overview). By 1975 substantial dislocation had occurred in information and delivery systems to Tanzanian farmers. The Farmer Training Centers originally established by the Minister of Agriculture had been absorbed into the Prime Minister's Office, and the introduction of the principle of decentralization brought with it delegation of national responsibility for agricultural extension activities to the regional and district offices also under the Prime Minister's Office. Dissatisfaction with the status quo had become a major topic in the local press, and considerable official pressure was exerted for improvement in agricultural information and delivery systems.

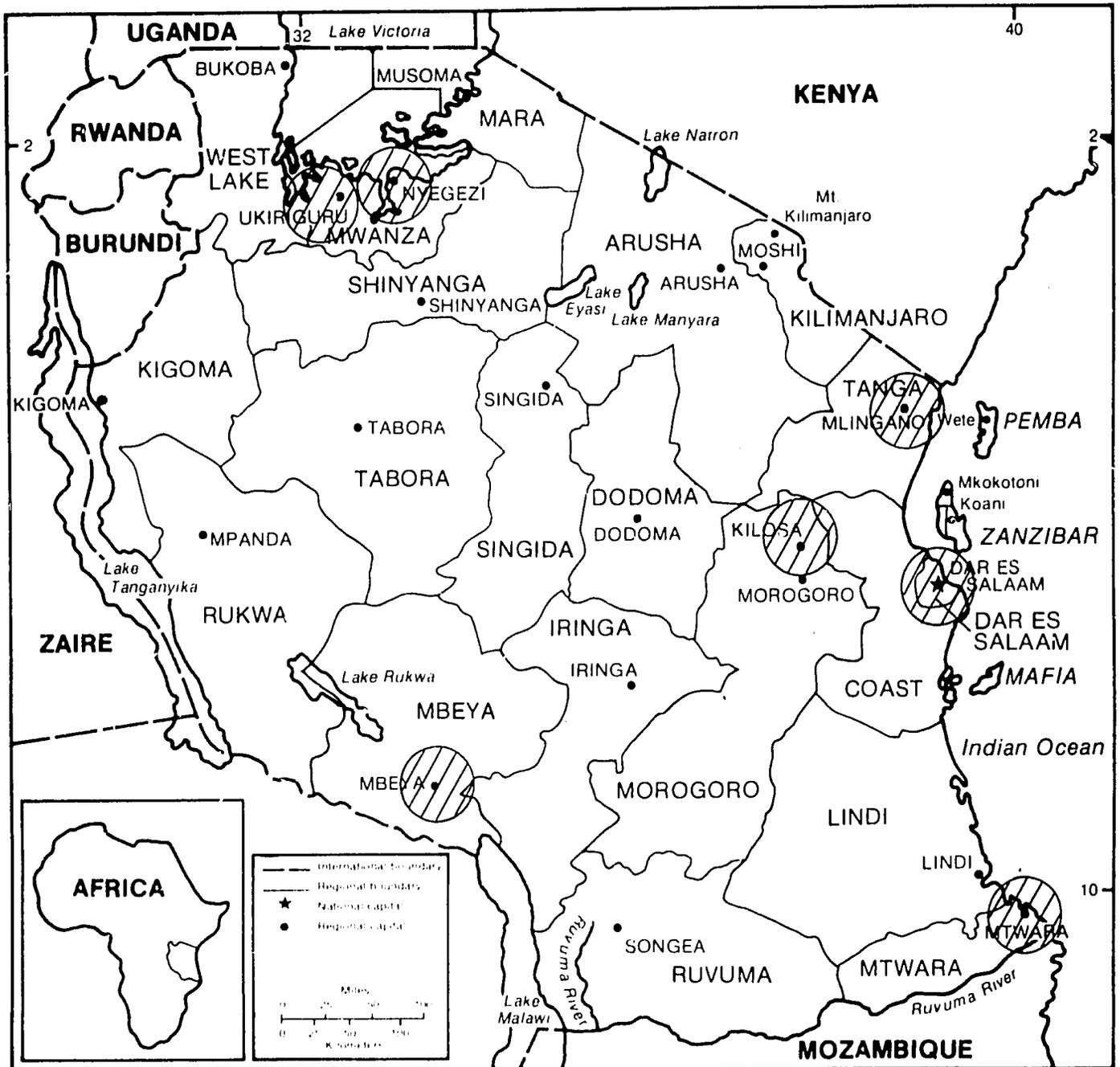
The Farmer Training and Production Project was first planned as a sub-project of the Agricultural Manpower Project, AID/afr-C-1067. The first annual Progress Report of that Project gave the following background:

In July 1975 a team composed of Dr. Ralph E. Nelson of West Virginia University (WVU), Mr. Edward Hirobayashi of USAID/Washington, and Mr. Charles Sweet of Development Alternatives, Inc., Washington, D.C., consulted with KILIMO (the Ministry of Agriculture), ST (Government of Tanzania), and USAID/Tanzania officials. With the assistance of Mr. Marcus L. Winter of REDSO/Nairobi, the team drafted a project proposal to assist in the initiation of a new farmer training effort under the aegis of KILIMO. The proposal involved the establishment of a "Farmer Training Wing" at MATIs Mbeya, Nyegezi, Mlingano and Mtwara, with a single project person stationed at each of these MATIs to spearhead the work of formulating and supervising a grassroots approach to farmer training. MATI students and tutors would be involved in providing extension services to selected villages within their respective areas. The proposal has not yet been fully discussed with KILIMO, and the Project Paper (PP) is still in the formative stages. There is support for this Project in KILIMO and USAID/Tanzania and it appears that this Project can be funded during the current FY period. The philosophy of the Tanzanian approach to rural development is congruent with the USAID congressional mandate. This Project, or sub-project to the current Project, should be underway during 1976.²

Contrary to expectation, the Project Paper was not approved by USAID/Washington until August 1977. Further delaying Project start up was a long period of official inaction following this event; however, preparations slowly continued within the Ministry of Agriculture and at the sites. The four MATIs were allocated funds for construction of buildings and preliminary plans were laid. Agricultural extension tutors and others became somewhat involved at three future Wing sites in collecting preliminary farm data and involving students in villages. At Mtwara, for example, three training events were held for farmers.

² Maxwell, Robert H., Tanzania Agricultural Manpower Project Progress Report, February - December 1975. West Virginia University, Office of International Programs Report Number 56, April 1976.

Figure # 1: MAP OF MAINLAND TANZANIA WITH PROJECTSITES MARKED



A contract between AID/Washington and West Virginia University (representing the consortium of WVU and North Carolina Agricultural and Technical State University, NCATSU) was signed in August 1979. The contract made available \$2.078 million for conducting a four year pilot Project. Dr. Lloyd C. Pickett, who was then serving as Chief of Party for the final nine months of the consortium's Agricultural Manpower Project, was appointed Farmer Training and Production Project Team Leader (Coordinator). Mr. O. T. Kibwana was appointed by the Ministry of Agriculture as National Project Coordinator to work with Dr. Pickett in Dar es Salaam.

Context of the Project

Dr. Pickett, who served as team leader for four years, had this to say in 1981 about the rationale for initiating the Farmer Training and Production Project and its resultant direction:

It has been observed many times that tutors and students are quite out of touch, both with villages and with non-teaching local agriculturalists.³ Tutors' notes seldom discuss local case studies and may not even show local statistics. Our boarding school MATIs are quite isolated from villages culturally. The reference materials used to prepare class notes come largely from developed countries. Furthermore it seems to me that only the tutors of extension topics have worked to develop the competencies in students they will require to work effectively with village people as change agents. Thus we have tended to produce school leavers who know a good deal about various academic topics but who have had little instruction or experience in how to apply their knowledge to solve the overwhelming and unique problems found in their assigned villages where cultural, political, economic and technical forces interact in complex ways.

³ See Vol.2 of the Tanzanian Agricultural Manpower Study Report, sections dealing with Agricultural Education at MATIs.

What was needed was a massive dose of staff and student participation in solving village agricultural problems. The delight of the Farmer Training and Production Project is that it offers this opportunity. The Wings are a conduit and a legitimizer between village and MATI. Both are benefitted tremendously.

Villagers would seem to look all too often to others (especially government) to solve their problems. When government does help, this expectation is reinforced. Extension work properly done develops people, especially their confidence in solving their own problems. It also teaches them to identify their opportunities and to organize for action. The Farmer Training and Production Project is striving diligently to develop these confidences and skills.

Agricultural recommendations based on station research have often been perceived by farmers as being unrealistic agriculturally, economically or culturally. Sometimes farmers' needs have been forgotten; for example their need to insure against starvation or the fact that sometimes research station results have not been repeated under village conditions, or a good recommendation has been made for too broad an area (non area-specific).

We plan to demonstrate forcefully that villages do develop and yields do increase when information flows two ways, when all support groups cooperate, and when support groups set out purposefully to understand the farmer and to work out solutions and recommendations with him/her. We will thus pave the way for farming systems research (project) expected to follow soon on a much larger scale; we will feed back farmers' views and experiences to central research committees; and we will write position papers as they seem appropriate.

The system and circumstances in which extension workers function sets several nearly insurmountable difficulties for them. The Farmer Training and Production Project should be able to demonstrate solutions. For extension workers to have a chance for success they must work intensively with a group of people developing confidence, understanding them, knowing them personally, planting ideas, planning comprehensive programs with them, following-up as often as is necessary, evaluating and re-planning. Extension workers have often been given many villages so that this lengthy process has not been possible and failure has been almost guaranteed. Equity of service among villages might be provided other ways, for example, by assigning an extension worker to one village for three

years, and then to another for three years. Extension workers also tend to be assigned for too many non-agricultural chores. The experience of the Farmer Training and Production Project should prove the value of concentration of effort.

Extension workers have tended to function as information givers because of their large territory, their inclination and their training. Often, encouragement, organization, supervision and push are more lacking than knowledge, or at the least, are additionally needed to move farmers from skepticism of an idea to acceptance of it, and adoption of the new practice. The Farmer Training and Production Project work in villages is providing information and legitimacy necessary for Wing staff to effectively train extension workers. In the upcoming year of the Project, we will conduct short courses for in-service extension workers at two Wings, and we plan to train Regional and District Agricultural Development Officers at a central site. The Farmer Training Centers of by-gone days in Tanzania were apparently only marginally successful. The heart of our model for effective farmer training, it seems to me, is to couple short course training with planning and with outreach. Passing information to farmers during short courses is likely to be of little value by itself. What is much better is for farmers, their tutor(s), their immediate extension workers, and resource person(s) to sit together, share their ideas and work out plans acceptable to all (agreed to by all); then return to the villages together to jointly carry out what was planned.

Should the Project be able to demonstrate the effectiveness of this approach, it could be implemented not only at all training institutes but in the 20 regional (and eventually 80 district) Farmer Training Centers in the country. Also, teaching packages and manuals will be available from the Project for use by all persons involved with teaching farmers and by all MATI and Livestock Training Institutes (LITI) tutors. The trainer's guide in each package will direct trainers in their methods as well as insure appropriateness of content.⁴

⁴ Excerpts taken from the Tanzania Farmer Training and Production Project Progress Report: October 1980 - September 1981, WVU Division of International Agriculture and Forestry Publication Number 75, by Dr. L.C. Pickett

OPERATIONAL PLAN

Funding for the four year Farmer Training and Production Project was provided by U.S. \$ 2.5 million from USAID and Tanzanian Shillings 1.3 million for capital and recurrent costs from the Tanzanian government. The Project was aimed at improving the social and economic well being of small farmers in Tanzania villages. Achievement of this goal began with developing an understanding of small farmer practices, constraints and decision making processes. Building from this knowledge base, the Project tested different extension methodologies and production packages and used the most effective of these to help small farmers to improve their production and income. The insights gained helped researchers, present and future extension workers and trainers to serve farmers more effectively. These insights also helped MATI staff to produce extension workers who know how to effect changes in village agricultural practices.

The Project was implemented through Ministry of Agriculture Training Institutes and was integrated and coordinated with research institutes and extension offices. The capabilities of the four original MATIs participating in this Project were expanded to include Farmer Training Wings, each of which focused on three to twelve villages in its surrounding area. In July 1982, a fifth Wing was added at Ukiriguru. In July 1983, a sixth wing was added at Ilonga.

MATI students and staff collected information on agricultural production practices in selected villages. This information was

then used along with the advice of experts to identify requirements for assisting village farmers to improve their production. The Wing staffs and their supporters then provided appropriate training and technical assistance using a variety of approaches. The effectiveness of the different approaches was evaluated in an effort to identify the essential elements of effective extension work, agriculture research and student training. The Farmer Training Wing staffs then passed on their accumulated knowledge to MATI students and to extension workers, especially those working within the areas surrounding participating MATIs.

Although the Project Paper called for the Project to develop and operate at only four sites, six sites were fully operational by Project Activities Completion Date. Furthermore, at the close of the USAID supported portion of the Project the Ministry announced its intention to expand the program to all 10 MATIs and all LITIs.

Insights gained during the Project have been and continue to be incorporated into the process of curriculum revision for Training Institutes' curricula. Schedules and teaching materials have also been modified to accommodate the changes recommended by the Ministry as a result of the Project. Models for effective Farmer Training were developed, along with a large quantity of teaching materials, some for use with farmers and some with extension in-service or student pre-service training. The former will be used in direct farmer training at the regional and district level as well as in training Ministry of Agriculture and Livestock Development field auxiliaries throughout the country.

PURPOSE

In general terms, the Farmer Training and Production Project provided technical assistance to the Ministry of Agriculture in developing and implementing training programs for small farmers at selected Ministry of Agriculture Training Institutes (MATI's) and villages. The process of developing and implementing the farmer training courses was initiated to gain an understanding of small farmer practices, constraints and decision-making processes. Building from this knowledge base, the Project worked with small farmers to test different training and extension approaches and technological packages, the adoption of which helped farmers to improve their production and increase their incomes.

The original purpose (as it appeared in the Appendix of the Project Paper, 1977) was stated as follows:

To increase food production through the mechanism of developing mutual understanding between farmers and extension agents in such a systematic way that it will lead to better comprehension and appreciation of farmers' production problems and his socio/economic attitudes. It is anticipated that this will then result in the preparation and adoption of improved agriculture cultural practices and farm technologies to the direct benefit of the farmer.

The amended purpose (as it appears in the Mid-term Evaluation Report, May 1982) was stated as follows:

To design, test and evaluate practical approaches for developing mutual understanding and communication between and among village, extension, training and research organizations which will lead to the solution of constraints in improving small farmer agricultural production and the welfare of rural families, and more effective MATI system training programs. These experiences will be documented and made available to the Tanzanian Government and USAID for possible future guidance in rural development activities, and as a

basis for continuous upgrading and enrichment of the MATI's curriculum.

At the onset of the Project much had been tried but little accomplished in encouraging small farmers in a direct way to change their traditional agricultural practices. Formal training attempts had touched only a few, often with irrelevant or unsuitable information. Yet, if agricultural development was to occur, the millions of small farmers needed, among other things, to be provided with additional technical knowledge. How to reach and effectively train small farmers who possess little or no education was one of the major problems in Tanzanian agriculture. It was toward the solution of this problem that this Project addressed itself.

OBJECTIVES

To accomplish the objectives of this Project, USAID will provide technical services to the Ministry of Agriculture and selected MATI's (Mtwara, Mbeya, Nyegezi and Mlingano) to:

1. Develop methodologies for gathering information on small farmer production practices, constraints and decision-making processes.
2. Utilize the knowledge gained to develop small farmer training programs at participating Ministry of Agriculture Training Institutes. The program will be designed to facilitate greater understanding and communication between the farmers and extension workers.
3. Test small farmer acceptance of new technological packages and the efficacy of various extension and training approaches in transferring agricultural knowledge to small farmers and villagers.
4. Conduct follow-up evaluations of the farmer training programs to determine if they are having the desired

results and if not, why not. Evaluations will also be used to refine and improve course content and teaching techniques for the MATIs as well as their Farmer Training Wings.

5. Upgrade the capabilities of agricultural extension personnel through in-service training courses. The favorable results of the information gathering and farmer training experience are to be incorporated into the programs of other MATIs.
6. Assist MATI staff and students to provide technical assistance to those villages whose farmer members attend courses at the Farmer Training Wings.
7. Identify solutions to production constraints that can be incorporated into national, regional and district development plans.

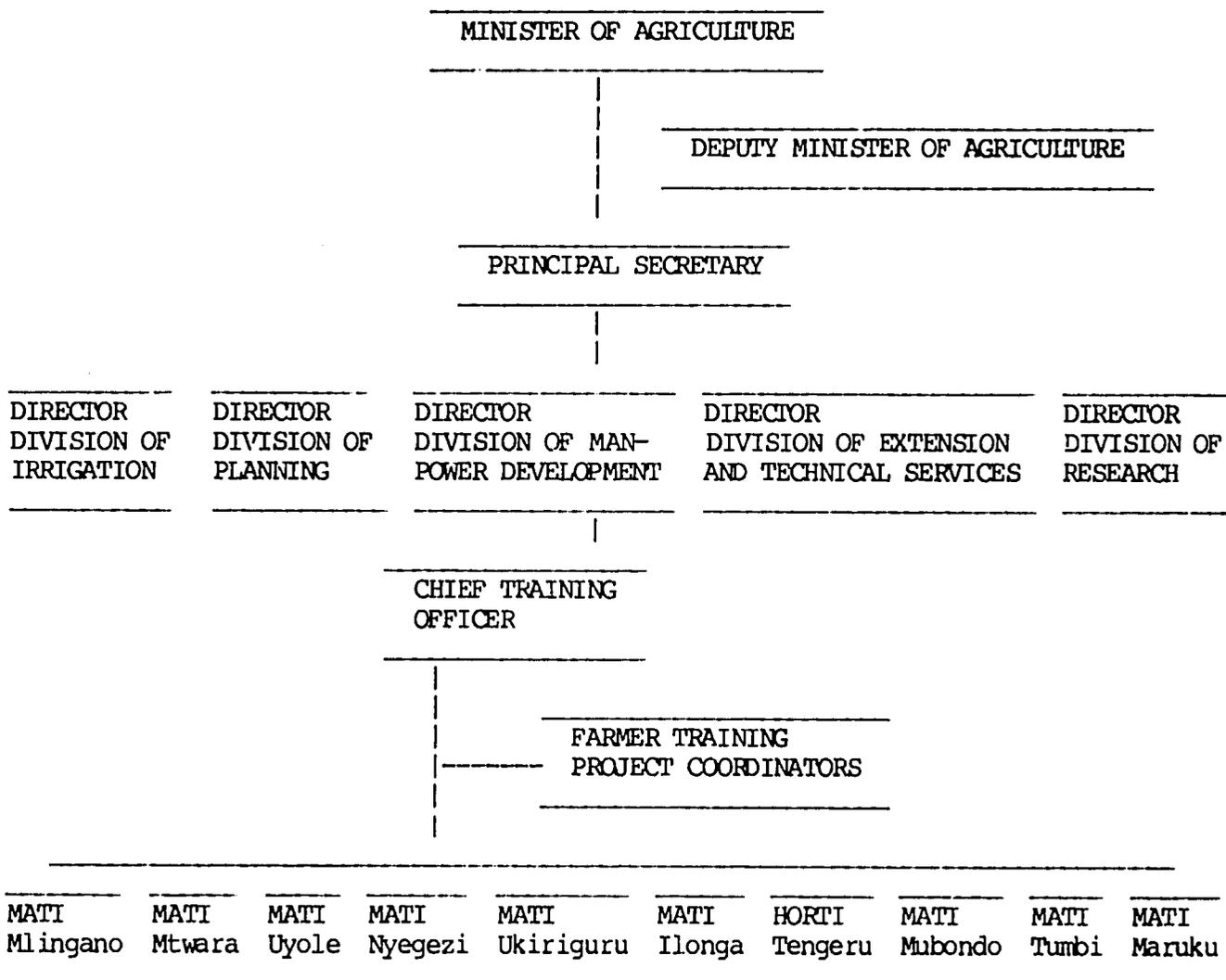
OUTPUTS

Project Outputs include, but are not limited to, the following:

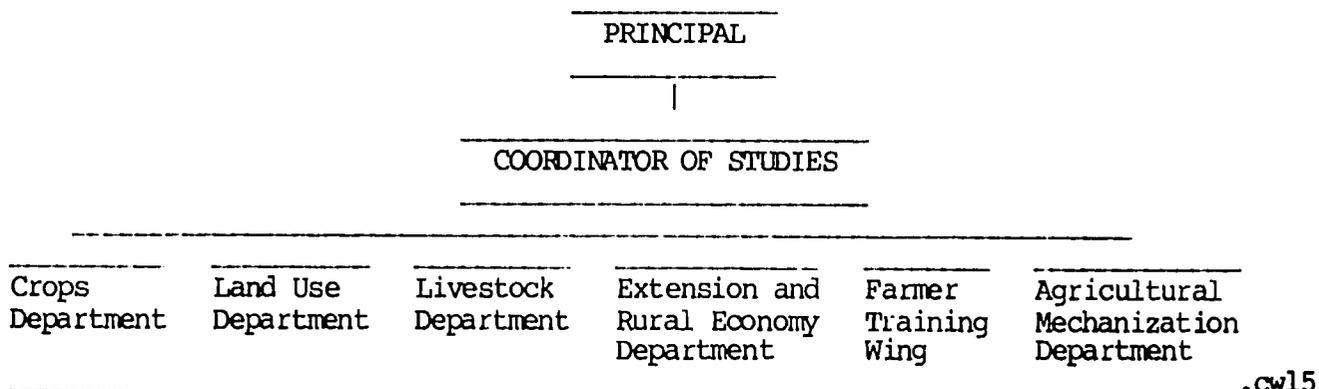
1. A Farmer Training Wing at each of the four participating MATIs.
2. Technical assistance provided by MATIs to villages (including training at Farmer Training Wings and in villages).
3. Trained staff and students in data collection and analysis methodology.
4. Simple information gathering instruments for use in research, training and extension at the participating MATIs.
5. Stronger linkages among research, training and extension to ensure the flow of new ideas to the small farmer.
6. Planning papers for extension, regional, and district development officials.
7. Teaching materials and techniques developed for small farmer training programs.
8. Improved in-service training courses for extension agents at the MATIs.

9. Yield-increasing farming practices successfully extended to farmers and villages.
10. Improved production input packages tested in the MATI and Farmer Training Wing sponsored villages.

Table # 2: RELATIONSHIP OF PROJECT TO MINISTRY ORGANIZATIONAL CONFIGURATION



RELATIONSHIP OF PROJECT TO MATI ORGANIZATIONAL CONFIGURATION



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PROJECT FACILITIES

A total of \$ 111,000 was obligated in the Project Agreement for the construction and renovation of facilities required to initiate Farmer Training and Production Project activities at four sites. Funds were released by USAID/Tanzania to the Ministry of Agriculture and thence to the appropriate MATI principals who in the main, used their own permanent staff to procure materials and supervise the work. Both expatriate and Tanzanian Project staff involved themselves heavily in the completion of facilities during the period April 1980 - September 1981. A listing of facilities built or renovated appears in Table # 3.

The completion of the Farmer Training and Production Project facilities, farmer dormitories, staff offices and technician housing was a much larger task than anticipated. Materials were either unavailable or available at a price beyond what a government institution is allowed to pay. A great deal of energy was required for this effort despite the fact that the facilities were largely complete at the start of the 1980-81 reporting year.

The procurement of local equipment and supplies such as beds, mattresses, towels and even food was also difficult and time consuming for Wing staff. Too often these small matters were not delegated to non-professional MATI staff because they lacked the transport or the clout required to hunt down scarce items. When problems were encountered in such mundane chores it obviously

drained the energy which staff should have been directing toward Project objectives. Such has been the fallout from difficult economic times.

Table # 3: Farmer Training and Production Project Wing Facilities

MATI	Facility	Construction or Renovation
Nyegezi	Technician Housing	New house constructed
	Farmer Classroom and Office Block	Renovated
	Farmer Dormitory	Renovation planned
Mtwara	Technician Housing	Pre-existing
	Farmer Classroom and Office Block	New building constructed
	Farmer Dormitory	Pre-existing
Mlingano	Technician Housing	New house constructed
	Farmer Classroom and Office Block	New building constructed
	Farmer Dormitory	New building constructed
Uyole	Technician Housing	Pre-existing
	Farmer Classroom and Office Block	Pre-existing
	Farmer Dormitory	Pre-existing

PROJECT STAFFING

JOB DESCRIPTION FOR EXPATRIATE TECHNICIANS

The Project Paper called for the following U.S. contract personnel to be recruited:

Rural Development Coordinator and Team Leader (Data Collection and Analysis Specialist), Manpower Development Division, Ministry of Agriculture, Dar es Salaam, Tanzania.

Duties, Responsibilities and Supervision:

Assistance will be given to the Ministry of Agriculture by supplying a Rural Development Coordinator to serve in a staff (non-administrative) capacity. In collaboration with the Ministry of Agriculture training officers, the principals of the MATIs and the technical staff supplied under this Project, and under the general supervision of the Director, Manpower Development Division, the Rural Development Coordinator will assist the Manpower Development Division to design, organize and implement appropriate data collection and analyze the information for utilization in training and extension programs in district, regional and national planning efforts. The Rural Development Coordinator will also serve as Team Leader for the U.S. contract technicians working on this Project.

As assigned and directed by the Director, Manpower Development Division, the duties of the Rural Development Coordinator will include:

- Assisting in the design of the research program of the four participating MATIs necessary for understanding farmer behavior;
- Help the various Tanzanian institutions in devising and testing various training and extension methods and technological packages;
- Organize a system to collect, analyze and present the data collected from the four MATIs;
- Assist in the interpretation of the information and the preparation of implementation plans that enable the Ministry (and other agencies) to utilize the findings of the research and testing undertaken;
- Serve as Team Leader of the 5-person team supplied under this Project;
- Other duties as assigned.

Qualifications

Education

Academic background should include work at the Ph.D. level or equivalent experience with a Masters degree. This individual should have training in several disciplines with a major field in sociology, agricultural economics, applied anthropology, or an interdisciplinary program in rural or international agricultural development.

Experience

Four to six years experience as an agricultural or rural development specialist. The individual selected must have an understanding of traditional small farming systems and experience in introducing changes into these systems. The individual must also have developing country experience (preferably in Africa) in the design and conduct of farmer and extension worker training programs.

Background in applied research methodology, to include experience in the design of data collection instruments and in data analysis. The individual must be able to assess the capabilities of the MATIs and other Tanzanian institutions for doing this type of work and to develop a program with these capabilities.

Other

Ability and willingness to engage in frequent and extended field travel is required.

While Swahili capability is not required, it would be advantageous and funds have been made available for such training. The incumbent of this position must have, as a minimum, demonstrated language aptitude.

Rural Development Specialists (4)

Duties, Responsibilities and Supervision

The four Rural Development Specialists will serve as staff (non-administrative) members of the participating MATIs. In collaboration with other MATI staff members and appropriate officers of the Ministry of Agriculture and under the general supervision of the Principals, the Rural Development Specialists will assist in the design and

implementation of the programs of the Farmer Training Wings of the MATIs.

As assigned and directed by the respective Principals the duties of the Rural Development Specialists will include:

- Assisting in the design of the research effort necessary to gain a better understanding of farmer behavior and farming practices;
- Assist in the design and testing of various training and extension methods and different technical packages;
- Train the MATI staff and students in data collection and analysis techniques;
- Provide inputs into regional and district planning;
- Assist as part of the MATI team in dispensing technical assistance of an appropriate nature to the farmers and villages.

Qualifications

Education

Academic background should include a minimum of an M.S. degree. The individual should have one degree in agriculture with supporting studies in agricultural and economic development, sociology, applied anthropology or communications.

Experience

Four to six years experience as an agricultural or rural development specialist is required. The individuals selected must have an understanding of traditional farming systems (preferably in Africa) and experience in introducing changes into these systems. The individuals must also have experience in the design and conduct of farmer and extension worker training programs.

Background in applied research methodology, to include experience in the design of data collection instruments and in data analysis. The individual must be able to assess the capabilities of the MATIs and other Tanzanian institutions for doing this type of work and to develop a program with these capabilities.

Other

Language capability in conversational Swahili is essential to facilitate communication with staff and

farmers and allow close monitoring of training and research programs. Provision for language training for staff members and their spouses may be included in the contract, though, if possible, Swahili speakers with experience in East Africa should be recruited. The Rural Development Specialists (but not spouses) should possess a Foreign Service Institute (FSI) Swahili language rating in conversation at the 1.5 level prior to arrival in Tanzania. Other testing methods equivalent to FSI standards may be used.

Willingness to live and work under isolated conditions.

It would be desirable if these Specialists were single or that their families were small.

PESONNEL ROSTER

The following personnel were directly linked to the Project:

Ministry of Agriculture Headquarters, Dar es Salaam

C.K.	Tupa	Directors of the Division of Manpower Development
A.L.	Momadi	under which the Project operated.
D.F.	Mkan'gata	
R.N.	Rwasa	Chief Training Officer and Project Director. Held overall supervisory responsibility for Project activities at the National level.
R.J.	Shayo	Farmer Training and Production Project Coordinator. December 1980-August 1982 and January 1984 - September 1984.
O.T.	Kibwana	Farmer Training and Production Project Coordinator, October 1979- December 1980.
L.C.	Pickett	Farmer Training and Production Project Coordinator and Chief of Party for the contracting consortium, October 1979-September 1983.
D.G.	Acker	Farmer Training and Production Project Coordinator and Chief of Party for the contracting consortium, October 1983-September 1984. Associate Project Leader, September 1982-September 1983.
T.C.	Shechambo	Acting Project Coordinator, October 1983 - January 1984

West Virginia University

R.H.	Maxwell	Associate Dean, Division of International Agriculture and Forestry, West Virginia University. In providing both direction and routine administrative support for the Project Dr. Maxwell represents both partners in the consortium.
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North Carolina Agricultural and Technical State University

W.R.	Reed	Associate Dean of Agriculture. Represents NCATSU in the consortium.
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USAID Dar es Salaam

S.A.	Fee	USAID Project Officer, February 1983-present
R.D.	Harvey	USAID Project Officer, October 1979-November 1982

MATI Mlingano

G. Mariki Wing Leader, B.Sc., WVU, December 1981-September 1984

D.C. Scheinman Rural Development Specialist with NCATSU, September 1980-December 1983

E.J. Samki Diploma Holder, June 1981-September 1984

A. Kilua Diploma Holder, July 1983-September 1984

T.C. Shechambo Diploma Holder, November 1980-September 1983

B. Matilibu Diploma Holder, November 1980-November 1982

J.S. Mhina Certificate Holder, July 1982-September 1984

A.P. Shora Certificate Holder, July 1983-September 1984

F. Kipalo Certificate Holder, July 1983-September 1984

MATI Mtwara

M.R.S. Mlozi Wing Leader, B.Sc., M.Sc., WVU, July 1982-February 1984. Left Project to assume position with the Sokoine University of Agriculture

V. Maneno Wing Leader (as of March 1, 1984), Diploma Holder September 1982-September 1984

D.G. Acker Rural Development Specialist with WVU, August 1980-August 1982

A.M. Mtukwe Diploma Holder, June 1980-January 1983

R.A.B. Liloko Certificate Holder, July 1981-September 1984

M.A. Laizer Certificate Holder, July 1981-September 1984

M. Shomari Diploma Holder, October 1982-September 1984

B.R. Rwegasila Diploma Holder, Head of the Department of Extension and Rural Economy

J.J. Bakari Certificate Holder, July 1983-September 1984

MATI Nyegezi

D.M.Z. Sendeu Wing Leader, B.Sc., M.Sc., WVU,
May 1982-September 1984
C.O. Smith Rural Development Specialist with WVU
April 1980- August 1982
C.E. Mchelle Diploma Holder, January 1983-September 1984
O. Ambogo Certificate Holder
V. Masanja Certificate Holder
J. Rwegeshora Diploma Holder
V. Rwegeshora B.Sc., University of Dar es Salaam
M.F. van Rossum M.Sc. Home Economics
M. Masha Diploma Holder
S. Mutakyamilwa Head, Department of Extension and Rural Economy,
J. Amede Diploma Holder
J. Mashiba B.Sc., NCATSU, January 1981-October 1982
(Later transferred to Ukiriguru)
L.K. Susuma Diploma Holder, August 1981-September 1982
I.H. Gwau B.Sc. Holder, May 1980-February 1981
J. Sange Diploma Holder, September 1981-December 1982
B.H. Matanga Diploma Holder, May 1980-April 1982
P.C. Mwakwaia Diploma Holder, May 1980-April 1981

Training Institute, Uyolet Agriculture Center

O. Kussaga Wing Leader, B.Sc., WVU, February 1982-
September 1984
H.G. Peuse Rural Development Specialist with NCATSU,
September 1980-May 1982
C.O. Smith Rural Development Specialist with WVU,
October 1982-June 1983
R.N. Nyamasagi Diploma Holder, March 1981-September 1984
E.S. Mwalukasa Diploma Holder, June 1982- September 1984
J.P. Madauda Certificate Holder, July 1983-September 1984

MATI Ukiriguru

S.C. Lugeye Former Wing Leader, B.Sc., NCATSU,
January 1982-February 1984
Transferred to Ilonga

K.M. Rukiko Wing Leader, B.Sc., UDSM,
January 1983-September 1984

A.M. Mtukwe Diploma Holder, February 1983-September 1984

B.B. Mwenda Diploma Holder, July 1982-September 1984

A.A. Mohamed Certificate Holder, July 1982-September 1984

MATI Ilonga

S.C. Lugeye Wing Leader, May 1984-September 1984

W.G. Massenga Former Wing Leader, July 1983-September 1984

N. Tsubaki B.Sc., June 1982- September 1984

M. Loth Diploma Holder, July 1984-September 1984

STAFF DEVELOPMENT

Participant Training

Six Long-term participants were trained under the Project. These individuals left for degree training in the United States in December 1980 to complete agricultural education and extension degrees as shown in Table # 4:

Table # 4: Participant Training

Name	Degree Received	University	Posting
O. Kussaga	B.Sc.	W.V.U.	Uyole
S. Lugeye	B.Sc.	NCATSU	Ukiriguru
J. Mashiba	B.Sc.	NCATSU	Nyegezi
G. Mariki	B.Sc.	W.V.U.	Mlingano
M. Mlozi	B.Sc./M.Sc.	W.V.U.	Mtwara
D. Sendeu	B.Sc./M.Sc.	W.V.U.	Nyegezi

Two of the six participants continued their studies in the U.S.A. at their own expense after completion of the B.Sc. programs in December 1981. Mlozi and Sendev maintained heavy academic loads during the period of the first degree in an effort to complete half of the requirements of the M.Sc. degree. They were therefore able to complete the M.Sc. degree course work in one additional semester. Some of the other participants also earned considerable academic credit toward an M.Sc. degree.

On return to Tanzania all participants lost a good deal of time in settling in due to home visits, housing problems, personal freight arrivals, etc., but generally brought enthusiasm, vigor and ability to the Project. They also plugged several large holes in the staff roster.

It should be noted that the return of the participant trainees from university training in the U.S. marked a turning point in the Project's development. During the 18 months prior to the return of the participants the Project was dominated by the influence of the expatriate team members. After the return of the participants, the Project took on a decidedly different air; it began to be a Project that belonged to Tanzania and not solely to the donor agency or contract team.

Upon their return all returning participants took part in a two day orientation session run by headquarters staff. In addition, and in response to a recommendation of the mid-term evaluation team, participants were each given an opportunity to visit and observe two other Wings in operation. Wing leaders spent from 2-5

days familiarizing themselves with day-to-day operating styles of other wings.

Study Tours

Representatives of five Wings and three representatives of headquarters participated in a 10 day study tour of extension worker and farmer training institutes in three Indian states. The five representatives were selected from amongst those Wing staff who had been acting in the capacity of Wing Co-Leader during the period when participants were pursuing degrees training in the United States.

In addition, the Chief Training Officer and the Associate Project Leader participated in a week long study tour organized by USAID and the Kenyan Ministry of Agriculture. The principle objective of this study tour was to observe methods and procedures related to the production and utilization of training materials.

In-House Training and Development

Formal staff development training was also conducted immediately following the Project workshops which took place in September 1983 and August 1984. These sessions took the form of in-house training events and were conducted with the help of outside consultants and by utilizing the breadth of experience of the Project staff.

Along these lines, site visits were made on a regular basis by headquarters staff to all Wings. These visits combined the functions of supervision, trouble shooting and continued staff

training. Four site visits were also made by David Scheinman who conducted on-site workshops for MATI staff on student outreach program development and in-service training of extension workers in farmer centered extension methods.

The consortium provided both long and short term technical assistance as shown in Table # 5 and Table # 6:

**Table # 5:
Long Term Technical Assistance Contributions by Consortium Staff**

Oct. 1, 1979	Oct. 1, 1980	Oct. 1, 1981	Oct. 1, 1982	Oct. 1, 1983	Oct. 1, 1984
L.C. Pickett 48 months					
C.O. Smith 39 months					
D.G. Acker 49 months					
D.C. Scheinman 39 months					
H.G. Peuse 20 months					

TOTAL: 195 person months

Table # 6: SHORT TERM TECHNICAL ASSISTANCE CONTRIBUTIONS

R.H. Maxwell	6 weeks
B.M. Lansdale	3 weeks
J.F. Gonsalves	3 weeks
J.D. Lansdale	8 weeks

TOTAL: 5 person months
SHORT TERM CONSULTANTS

Dr. Robert H. Maxwell, Associate Dean, International Agriculture and Forestry, West Virginia University.

Dr. Maxwell, campus coordinator for the Project, visited the Project on three separate occasions between 1980 and 1984. These field visits were both supervisory as well as consultative in nature. Dr. Maxwell's long experience in East African extension and secondary/post secondary agricultural education qualified him to maintain a significant role in the supervision of the Project.

Mr. Bruce M. Lansdale, Director, American Farm School, Thessaloniki, Greece.

Mr. Lansdale participated in a three week consultancy on the role of secondary agricultural institutions in residential farmer training. In addition to visiting all Project sites Mr. Lansdale organized and conducted an in-house Project workshop in Arusha. Mr. Lansdale brought to the consultancy over 25 years of experience in the management of secondary agricultural education and farmer training on three continents.

Dr. Julian E. Gonsalves, Senior Specialist, International Institute for Rural Reconstruction, Silang, Cavite, Philippines.

Dr. Gonsalves joined the Project for a three week consultancy on the development and utilization of training materials appropriate to the Tanzanian context. In addition to performing an analysis

of existing training materials developed by the Project Dr. Gonsalves also presented the findings of his two year research project on farmer training in Tanzania. Dr. Gonsalves also designed and conducted a workshop on group facilitation techniques for Project staff. In addition to his extensive research experience in Tanzania Dr. Gonsalves brought to the consultancy 10 years of rural development experience in India and the Philippines.

Mr. Jeff D. Lansdale, Assistant to the Director, Escuela Agricola Panamericana, Zamorano, Honduras.

Mr. Lansdale participated in an eight week consultancy during which time he concentrated his efforts on editing seven full length training publications and on the preparation of five extension booklets. In addition, Mr. Lansdale served as a resource person at the National Council for Agricultural Education and the Annual Agricultural Training Conference. Mr. Lansdale brought to the consultancy 10 years of agricultural education and rural development experience gathered in the Middle east, Southeast Asia and Latin America.

COMMODITY SUPPORT

The Farmer Training and Production Project was budgeted in the Project Paper for approximately \$356,000 for commodities purchased with Project funds held by USAID. Approximately half of this amount was expected to be spent during the first year. Over the four year period of the Project the MATIs were budgeted as follows:

Mtwara	\$ 77,500
Nyegezi	\$ 65,000
Mlingano	\$ 80,000
Uyole	\$ 77,100
Other MATIs	\$ 54,700

Five Landrovers and thirty Honda 90 motorcycles (trailbikes) were ordered during 1977-78 when an early initiation of the Project was anticipated. The Landrovers were on site and unused in early 1979 when USAID and the Ministry of Agriculture were looking for transport for the Tanzania Agricultural Manpower Survey Team. As the Manpower Study was to be managed by the WVU/NCATSU Consortium as an appendage to the Tanzanian Agricultural Manpower Project, the Landrovers were used to conduct the study's field work. Each was run for 12,000-18,000 kilometers between March and October 1979. One of these later went to MATI Ukiriguru in exchange for a new vehicle which went to the Farmer Training Wing at Nyegezi.

In July of 1981, the USAID Project Officer arranged to transfer a sixth Landrover station wagon to the Project. This vehicle, showing 45,000 kms. of hard use, was transferred to MATI

Mlingano. It proved to be a sink hole for spare parts.

27 of the original 30 motorcycles were taken by another USAID Project in late 1979 by agreement between USAID and the Ministry of Agriculture. Replacements arrived in August 1980. Their distribution to Wings began shortly thereafter.

At Project phaseout, transport units were located as follows:

Table #7: TRANSPORT DISTRIBUTION

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+++++
MATI           Landrovers      Buses      Motorcycles      Bicycles
-----
Mlingano             2             0             6             11
Mtwara               1             1             6             6
Nyegezi             1             0             5             11
U.A.C.              1             1             6             24
Ukiriguru           1             1             4             12
Ilonga              0             1             3             0
Mpwapwa (LITI)     0             0             1             0
Dar es Salaam      1             0             2             0
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TOTAL                7             4             32            64
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Table # 8: INFORMATION ON VEHICLES

Landrover Pickup	1978	Nyegezi	Fair Condition
Landrover Pickup	1978	Ukiriguru	Fair Condition
Landrover St. Wagon	1980	Mlingano	Poor Condition
Landrover Pickup	1978	Mtwara	Good Condition
Landrover St. Wagon	1978	Mlingano	Good Condition
Landrover St. Wagon	1979	U.A.C.	Fair Condition
Landrover St. Wagon	1982	Dar es Salaam	Very Good Condition
Toyota Coaster Bus	1978	Ilonga	Out of order since 10/83
Toyota Coaster Bus	1978	Ukiriguru	Out of order since 2/84
Toyota Coaster Bus	1979	Mtwara	Good Condition
Isuzu Journey Bus	1980	U.A.C.	Good Condition

Although it was agreed in 1978 that maintenance costs on all equipment brought into the country were to be the responsibility of the Tanzanian Government, by 1981 it became clear that this was no longer possible. Due to ever more severe shortages of spare parts in the country and the associated inflation in prices of those limited remaining stocks, spare part orders were placed by USAID and the consortium in Japan, Kenya and Britain, paid for with Project and contract funds, and distributed by the Project headquarters office in Dar es Salaam.

Orders of spare parts require a number of approvals and involve numerous exchanges of correspondence between buyer and seller. The addition of this time consuming task to the already full load of the team leader and the USAID Project Officer proved to be

more than could be efficiently handled. Demand for spares to support Project equipment continually outstripped supply.

More than half of the initial large commodity order arrived in April and July of 1981. Each participating MATI received consignments of paper, stencils, file cabinets, generators, slide projectors, mimeograph machines, wheelbarrows, calculators, photographic paper and film. Supplies which failed to arrive with this large order (first committed to paper in January of 1980) included: typewriters, photocopy machines, movie projectors, tape recorders, 35 mm cameras and print out calculators. It took more than a year to determine conclusively that these items would not be delivered and to get a replacement order into the country. Thus, many of the nuts and bolts of an extension project were not available in the country until the Project was nearly 60% completed.

Small items, office equipment, and miscellaneous supplies were ordered throughout the Project directly from the contractor's home office. These commodities arrived in a timely manner in large part due to the reduced number of people involved in the procurement process. All communication took place directly between the Chief of Party in Dar es Salaam and the campus coordinator at West Virginia University.

Following the mid-term evaluation of May 1982 it was determined that approximately \$ 72,000 of additional commodities should be ordered, primarily to allow expansion of the Project to the Ukiriguru and Ilonga sites. Thus a Landrover, 2 motorcycles,

\$14,000 worth of spares for the Landrover and motorcycles, typewriters, movie and slide projectors, duplicating machines, cameras, tape recorders, 4 mini buses, filmstrips, film strip projectors, and various books were ordered.

The rehabilitated Japanese mini buses imported by the Project were used to transport students and farmers to and from villages. These essential transport units were not originally anticipated in the Project design. The buses arrived during the last 12 months of the Project. Unfortunately, the buses were models which are not exported from Japan as new units and consequently had no spare parts support outside of Japan. To exacerbate the problem, no spare parts were ordered when the buses were ordered from Japan as USAID had determined at that time that no funds were available for the purpose. This determination was subsequently proved unfounded and parts were ordered. However, as of the close of the Project no supplier had confirmed shipment of these spares. As a result of this situation these buses were off the road approximately 45% during their first year in service.

At the close of the Project vehicles provided under the Project were an average of 5 years old and are rapidly approaching retirement age. To continue the level of effort sustained to date the Ministry would need to replace all vehicles within the next two years.

In anticipation of the end of the Project USAID and the contractor have placed orders for additional equipment and spare parts to allow the established 6 wings to operate for another 12 months

before facing serious supply problems. Ordered to arrive at Project phaseout are motorcycle spares, Landrover spares, audio-visual equipment, printing and photographic supplies and additional items to supply the two newest wings. Paper, ink, stencils (electronic and regular) and teaching package covers are in stock in sufficient quantities to allow the Ministry to continue for another 12 months the efforts begun under the Project to produce training materials for farmers and extension workers.

Had the Landrovers been new when the Project started the vehicles could have operated for another two years after Project phaseout. As it is, the Ministry made a decision to put that transport resource to work for them during the Manpower Survey in 1979 instead of 1984.

Table # 9: CHRONOLOGY OF SIGNIFICANT EVENTS

Project proposal drafted		1975
Project design discussions		1976
Official Project Paper approved		1977
Selection of contractor/contract negotiations		1978
Team leader Pickett posted to Dar es Salaam	July	1979
Construction of Project facilities		1979-1980
Recruitment of Rural Development Specialists	October	1979
Participants depart for U.S. training	December	1979
Rural Development Specialist Smith assumes post at MATI Nyegezi	April	1980
Rural Development Specialist Acker assumes post at MATI Mtwara	August	1980
Rural Development Specialist Peuse assumes post at Uyole Agricultural Center, Mbeya	September	1980
Rural Development Specialist Scheinman assumes post at Mlingano, Tanga	September	1980
Language training for Acker, Peuse, Scheinman	October	1980
First National Farmer Training Workshop held at Ministry of Agriculture, Dar es Salaam	December	1980
Second National Farmer Training Workshop held at HORTI Tengereu, Arusha	April	1981
Consultancy by Bruce M. Lansdale	April	1981
Farming Systems Research Workshop	April	1981
Project Evaluation	October	1981
Third National Farmer Training Workshop held at MATI Mlingano, Tanga	November	1981
Field visit by Dr. R. H. Maxwell	November	1981
Participants return from U.S. training	January	1982
Mid-Term Evaluation	May	1982
Peuse completes contract	June	1982

Fourth National Farmer Training Workshop held at MATI Mtwara	July	1982
Farmer Training Wing initiated at MATI Ukiriguru	July	1982
Project Coordinator Shayo Departs for further studies in Holland	August	1982
Acker transfers to Dar es Salaam	September	1982
Smith transfers to Uyole, Mbeya	October	1982
8 Project staff participate in study tour in India	December	1982
Fifth National Farmer Training Workshop held at Uyole, Mbeya	February	1983
Field visit by Dr. R. H. Maxwell	February	1983
Smith completes contract	June	1983
Study tour of Kenya	June	1983
Farmer Training Wing initiated at MATI Ilonga	July	1983
Sixth National Farmer Training Workshop held at the Center for Continuing Education, Morogoro	September	1983
Pickett completes contract	September	1983
Scheinman completes contract	December	1983
Shayo returns from training	January	1984
Consultancy by Jeff D. Lansdale	January	1984
Seventh National Farmer Training Workshop held in Dar es Salaam	April	1984
Final Evaluation	July	1984
Field Visit by Dr. R. H. Maxwell	July	1984
Eighth National Farmer Training Workshop held in Arusha	August	1984
Consultancy by Dr. Julian F. Gonsalves	August	1984
Project Activities Completion Date	September	1984

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Project Activities Completion Date	September	1984

PROJECT PERFORMANCE

PROGRESS IN RELATION TO PROJECT OBJECTIVES

a) Develop methodologies for gathering information on small farmer production practices, constraints and decision making procedures.

Interview forms and evaluative tools developed during the first year were tested and revised during the course of the second year. During the third year the four major data collection instruments were subjected to final scrutiny and revision at the Farmer Training Workshop of February 1983. These forms consist of:

Household Survey Form
Village Leader Survey Form
Extension Worker Opinion Survey Form
MATI Student Survey Form

The Household, Village Leader, and Extension Worker Opinion Survey Forms were published as an Appendix to the "Tutor's Guide to Training Agriculture and Livestock Students in Data Collection and Analysis." The Village Leader Survey data was summarized at Headquarters and distributed widely as a report by Dr. L.C. Pickett.

While the above mentioned surveys helped Project Staff to gain a basic understanding of the farm family, the village, the village extension worker and the MATI student, it is clear that general surveys of this nature by themselves do not provide a sufficient informational foundation upon which extension education or other intervention programs can be based. Consequently, during the last two years of the Project emphasis was placed on developing and utilizing enterprise and/or problem-specific surveys which yield

the detailed information needed for intervention strategy analyses and documentation. Wings have utilized such surveys to collect detailed information as part of the process of developing program plans, teaching packages and training manuals.

Major field research projects mounted during the Project included:

Competencies of Newly Employed Extension Workers as Perceived by their Supervisors by D.M.Z. Sendeu

Survey of Extension Workers in Tanga Region by G.E. Mariki

Animal Power Research Paper by D.M.Z. Sendeu

Survey of Extension Workers in Mtwara Region by M.R.S. Mlozi

Village Survey on Human Nutrition by E.S. Mwalukasa

Priorities Among Rural Women for Village Development Projects in Mwanza District, by M.F. van Rossum

Research findings were documented and presented to policy makers at meetings of the National Council of Agricultural Education, the Annual Agricultural Training Conferences and at Farmer Training Workshops.

b) Utilize the knowledge gained to develop small farmer training programs at participating MATIs. The program will be designed to facilitate greater understanding and communication between the farmers and extension workers.

Small farmer training programs were designed, tested, revised and documented at all six Project sites. The training process used at Project sites drew heavily on the concepts of "dialogue" and experiential learning.

However, at all Wing sites, with the exception of Mbeya, there

are few technological packages which are feasible at village level, given the marginal rainfall conditions, unavailability of inputs and prevailing input-cost and output-return ratios. Extension workers in many areas of Tanzania have had very little to extend.

In areas of frequent drought, maize growing is not recommended due to unreliability of rains. The high-yielding sorghum varieties often recommended to replace maize in these areas are said by farmers, and observed by Wing staff, to be highly susceptible to bird and insect damage and not as palatable as local varieties. Prices paid to producers for oilseed crops, cashewnuts and cotton fiber have been too low to generate much farmer interest in these potential cash crops.

Cassava, a poor quality food crop from a nutritional point of view, is heavily attacked by insects and diseases. New disease-resistant varieties have been tested and are in the early stages of the release process. Field beans do not yield well in many areas due to blight, excessive heat and other problems not readily remedied.

At Mtwara and Mlingano, cattle keeping is rare and risky due to disease, so that it is difficult to help farmers in these areas expand their acreage by the use of animal-powered equipment. At Nyegezi and Uyole our Project villages are already fully under cultivation using manpower, so animal power is usually thought of as a work saver, rather than a production increaser.

In spite of these many limitations, Project staff, with assistance from agricultural research and extension, have identified some areas where effective interventions are feasible. One of the more exciting ones is the use of animal power at Mbeya (and elsewhere) to pull a 5-shovel cultivator for weeding. Although much of the land is still tilled without animal power, there is a labor shortage during the weeding of maize that allows weeds to choke the crops and drastically reduce yields. Several dozen farmers have successfully used the cultivator and more farmers are being trained in its use. At Uyole, is potential for much heavier use of fertilizer, if it can be obtained. Insecticides and herbicides are also very cost effective in this high-yield area, if more can be obtained. Helping farmers to learn the sources and to insist that the system work for them is part of an extension worker's responsibility.

Improved grain storage that is simple and inexpensive to build is an urgent need. The imported chemicals are too often not available or are inactive due to age. Thus, at Mlingano the Wing field tested an oxygen-free pit storage unit in cooperation with Kansas State University grain storage specialists. The Mtwara Wing staff assisted villagers in building improved, above-ground structures.

Perennial crops have a high potential in the dryer areas. Since prices have risen, farmers have been very interested in increasing their coconut plantations. Thousands of seedlings offered for sale by the Mlingano Wing sold immediately. Citrus and banana production are also of interest to farmers.

Improved backyard gardening, rabbit keeping and poultry keeping are of interest to farmers and proved to be within their capabilities and possible to sustain without external inputs. Farmers received help and encouragement to fully use farmyard manures and compost materials. Should the economy improve, should imports become available, prices rise, new varieties prove themselves, or more moisture fall, all kinds of new opportunities will surface. At the moment, the situation is difficult for extension workers. Only the most creative will be effective. Such is the challenge of the MATI system to prepare creative extension workers who are capable of developing an understanding of their clientele through better communication and investigation techniques.

c) Test small farmer acceptance of new technological packages and efficacy of various extension and training approaches in transferring agricultural knowledge to small farmers and villagers.

Progress in relation to this objective can be reported in terms of several important lessons learned by the Project:

Farmers are generally willing to try new technologies when they are convinced that their return on investment from the new

technology will be significantly higher than that of their present practice. However, we often forget that farmers also put a great deal of value on consistency of yield over time (low risk strategies). Researchers, on the other hand, tend to place primary emphasis on yield alone while too often ignoring the importance to small farmers of reliability and consistency of yield over time. The two groups tend to understand one another poorly because of this perspectual difference.

More often than not, training needs are not considered to be a high priority among people with a fair number of pressing survival needs. People who place training lower on the list of needs than other priorities can sometimes be convinced that training can benefit them. However, in persuading such a target audience to engage in training it is essential that the trainer take into account their perceptions of their highest priority needs. If the trainer (or extensionist) can adequately deal with their highest priority need (through one of a variety of intervention strategies) then the target audience may allow training to rise in importance in their hierarchy of needs.

Although it is a relatively common belief that farmer ignorance is the real cause of limited agricultural production, the findings of the Project do not substantiate this belief. In fact, lack of knowledge is not, in many cases, a major constraining factor. Lack of markets, lack of transport, inadequate producer prices, lack of consumer goods to purchase with earned income, lack of inputs and late delivery of inputs are among the major causes of reduced agricultural production. Consequently, policy

emphasis solely on farmer training (reduction of the "farmer" ignorance constraint) will yield meager dividends unless it is coupled with a farm input and rural consumer goods supply program.

Farmers respond a good deal less to directives, targets and projects which are forced on them from above than they do to goals and projects which they have designed for themselves. The findings of the Project indicate that in spite of the official policy of "bottom-up" development farmers are still inundated with demands and regulations from both party and government. The result of this de facto "top-down" approach has been greatly reduced participation on the part of the peasant in the political process and in official trade channels.

d) Conduct follow-up evaluations of the farmer training programs to determine if they are having the desired results and, if not, why not. Evaluations will also be used to refine and improve course content and teaching techniques for the MATIs as well as their Farmer Training Wings.

Wing staff evaluated farmer training short courses with farmers after each course. Wing staff also followed up farmers in villages during the period of post course re-entry. In-village Project assistance was directly linked to the short course training as part of a cohesive Wing program. Short course content was revised based on these post course observations.

Based on these follow-up evaluations and on revised short courses which were conducted during the first two years, the Project developed a series of manuals for use in training MATI studies (future extension workers) and a series of teaching packages for

use in training farmers in teaching MATI students. These materials incorporate up-to-date training methodologies as well as up-to-date research information on a variety of subject matter areas. Please refer to Table # 10 and Table # 11 for lists of titles of these publications.

Table # 10: MANUALS FOR TRAINING OF EXTENSION WORKERS

	<u>TITLE</u>	<u>AUTHOR</u>
1.	Tutor's Guide to: Extension Programme Planning and Evaluation	L. Pickett
2.	Some Considerations in Villager Level Training	J. Gonsalves
3.	Tutor's Guide to: Farmer Centered In-Service Training for Extension Workers	D. Scheinman/ G. Mariki
4.	Tutor's Guide to: Training Agriculture and Livestock Students in Data Collection and Analysis	D. Acker
5.	Tutor's Guide to: The Organization and Conduct of the Student 8 Week Field Practical.	D. Acker
6.	Special Skills for Extension Workers (pacing, plane table mapping, etc). (in draft)	L. Pickett
7.	Tutor's Guide to: Social, Cultural and Psychological Factors in Extension Work	B. Sensenig
8.	Tutor's Guide to: The Organization and Conduct of Weekly Village Outreach Practicals at Agriculture and Livestock Institutes	L. Pickett

Table # 11: TEACHING PACKAGES DEVELOPED BY THE FARMER TRAINING PROJECT

Cashewnuts		M.R.S. Mlozi/A.M. Mtukwe
Groundnuts		M.R.S. Mlozi
Rabbits		J. Sange/J. Gonsalves
Potatoes		C.O. Smith
Cabbage		C.O. Smith
Animal Traction		R.N. Nyamasagi
Nutrition for Young Children		M.F. van Rossum
Coconuts		T.C. Shechambo
Grain Storage		A.M. Mtukwe/D.G. Acker J.D. Lansdale
Dairy		O. Kussaga
Cotton		S.C. Lugeye
Maize		Ilonga
Sorghum		M.R.S. Mlozi
Cassava		S.C. Lugeye
Nutritional Deficiencies		E.J. Samki
Lowland Rice		C.E. Mchelle
Organic Farming		V.M. Masanja
Rat Control		J.T. Christensen
Field Beans	*	B. Sensenig
Bio-Intensive Food Production	*	J. Gonsalves
Woodstoves and Trees	*	T. Sensenig
Citrus Production	*	T. Sensenig
Tree Planting		D.M.Z. Sendeu
Bullrush Millet		D.M.Z. Sendeu
Pig Production		O. Kussaga

* Developed by the Center for Continuing Education and Printed by the Farmer Training and Production Project.

Teaching materials were upgraded each time they were used. Staff at the Faculty of Agriculture, Forestry and Veterinary Science assisted in the development of teaching packages.

It was observed that when farmers are offered an idea that they perceive as beneficial they are generally willing to adopt. Mlingano farmers have bought and planted thousands of coconut trees as they said they would. Farmers at Mtwara drastically expanded their collective farm crops as they had decided at a Wing-sponsored planning meeting. At Nyegezi and UAC farmers eagerly purchased oxen-drawn equipment and participated in oxen training courses. At Uyole, farmers are also employing oxen for plowing and are widely applying commercial fertilizers and insecticides on their crops.

The emotional response from farmers to short courses and demonstrations has been excellent. They have been keen to attend, usually on time, have returned faithfully on continuing days, have been enthusiastic in learning and in sharing knowledge. Part of this may be due to an escape from boredom which training provides, but it seems also to involve genuine interest. Farmers are especially pleased to be listened to and to have planning done with them rather than for them. Training has been well accepted, whether offered in a village or at a Wing.

e) Upgrade the capabilities of agricultural extension personnel through in-service training courses. The favorable results of the information gathering and farmer training experiences are to be incorporated into the programs of other MATIs.

The Project mounted numerous efforts to understand the present village extension worker. Wing staff worked closely with

extension workers in those villages assisted by the Project. The project conducts surveys of extension workers including participant observation during their daily rounds of duties. The project also interviewed extension supervisors and farmers in order to understanding of the environment which the extension worker operates. Later, the project participated in workshops for Regional and District Agricultural Development Officers, in order to share experiences and results with them. The project cooperated in all these matters with staff of the Faculty of Agriculture, Forestry and Veterinary Medicine, University of Dar es Salaam.

The materials written for in-service refresher training equally useful for MATI student instruction. We are cooperating in their development with the Curriculum Development Section of the Ministry of Agriculture. Some MATI tutors who have been involved in village problem solving have stated that their teaching became more relevant. The Project has encouraged Wing staff to teach MATI students, and to feed back experiences, observations, and methodological suggestions.

In addition, a manual was developed for administrators and tutors entitled: "Tutor's Guide to the Organization and Conduct of the Village Outreach Practicals at Agriculture and Livestock Institutes".

It is also worth mentioning other specific efforts mounted during the Project including:

- The Farmer Training Wing at MATI Mlingano designed and held a series of in-service training courses for extension workers in Muheza, Korogwe and Lushoto Districts. The training courses focused on extension methodologies applicable in the village setting. Based on the experience gathered during this course the Wing Co-Leaders developed a 145 page manual entitled "Trainer's Guide to Farmer Centered In-Service Training for Extension Workers", for use in training extension workers in other parts of the country.

- The Project cooperated with the Ministry of Agriculture/FAO Fertilizer Project to develop and conduct in-service training courses for its field extension staff. The Project then developed in conjunction with this Ministry/FAO Project a series of site specific extension booklets for Kilimanjaro and Arusha Regions consisting of the following titles:

Intercropping of Maize and Beans on High Altitude Volcanic Soils

Intercropping of Maize and Beans on High Altitude Non-Volcanic Soils

Intercropping of Maize and Beans in Low Altitude Areas

- The Project coordinators addressed in-service training seminars for Regional and District Livestock Development Officers and Regional Farmers Education Officers. The presentations focused on the need for program planning in proactive extension work and the role of the supervisor in extension management.

- Based on information collected, a wide variety of farmer interactions, extensive observations of small farmer behavior and

a basic understanding of the current role of the extension worker the Project developed seven training manuals on a range of extension topics for use by MATI and LITI tutors throughout the country. (See Table #10). The series was developed in response to the critical shortage of relevant teaching materials appropriate for use by tutors of extension and rural economy.

- In particular, two of the manuals published under the Project are aimed at improving the quality of training given to extension workers by providing systematic methods for increasing the involvement of students in the "village laboratory." These manuals are:

"Tutor's Guide to the Organization and Conduct of Weekly Village Outreach Practicals at Agriculture and Livestock Institutes" and "Tutor's Guide to the Organization and Conduct of the 8 Week Student Field Practical."

f) Assist MATI staff and students to provide technical assistance to those villages whose farmer members attend courses at the Farmer Training Wings.

During the second and third years of the Project the Wing staff served as the main actors in the follow-up of course participants in their villages. Although the Project headquarters staff put a great deal of emphasis on the involvement of MATI students and staff in village outreach the Wings were only marginally successful in fostering this type of activity.

Largely due to the arrival of four buses obtained to facilitate the movement of students and staff to and from the villages, and

in part due to continued encouragement from headquarters, the campaign to involve students and staff in villages took off during the last 18 months in a meaningful fashion at Mlingano, Mtwara, Nyegezi, Ukiriguru and U.A.C. Programs at these MATIs had to overcome a fair amount of resistance to the idea of using the village as a training laboratory. However, after several years of papers being delivered on the subject, personal visits by Project headquarters staff to the MATI staff members, publicizing successful examples of outreach work at several MATIs and encouraging Wing staffs to take a lead role in this campaign the results are observable and impressive. Perhaps the surest indicator of the acceptance of this mode of training is the fact that the academic committees at the five MATIs have made modifications in the students' schedule to accommodate this change.

Farmers attend short courses to learn, to practice what was learned, to share knowledge with trainers and resource people, and importantly, to plan what they will do to use their new learning upon return to their villages. These follow-through plans also contain the commitments of MATI staff and students, of researchers (if relevant), of district extension officers, etc., as well as of the farmers. All Wing staff have been assisted in developing detailed and separate plans for students and staff involvement in village outreach.

MATI tutors, including Wing staff, who are involved in Project work in villages are in position to provide vicarious as well as real experiences to students as they teach in the classroom.

g) Identify solutions to production constraints that can be incorporated into National, Regional and District development plans.

The process of identification of production constraints began with formal surveying in villages, continued with multi-agency advisory committees analyzing survey results and acting as program steering agents, and later reached a point where identified constraints and their solutions were documented in written form for distribution. The series of teaching packages developed by the project places the latest research findings together with improved training and extension methodologies in a form which is ready for dissemination to the target audience.

Farmer Training Wings participated with researchers in conducting verification trials on village land. This is an area which should have been given additional program emphasis and remains a prime opportunity for the Project to become more involved. In addition to crop verification trials some Wings focused on testing technologies which reduced labor bottlenecks in the farming system. For example, the use of the 5 shovel oxen-drawn cultivator to control weeds in an efficient and timely manner.

The ability of the Wing staff to talk together with farmers as friends and close associates gave the Project an enormous advantage when trying to refine analyses of problems. Farmers were willing to contribute to the process of technology "sifting" and offer candid views about their real problems largely because the Wing staff was able to demonstrate that their prime motivation in working with the farmer was to help him improve

himself, rather than to punish, tax or otherwise interfere with him.

In addition, production constraints and suggested solutions were documented and discussed in the form of papers presented to policy makers and practitioners at meetings of the National Council for Agricultural Education (NCAE), the Annual Agricultural Training Conference (AATC) and national Farmer Training Workshops. Papers delivered to the NCAE by the Project included:

"An Overview of the Farmer Training and Production Project", by L.C. Pickett

"Practicing for the Future: The Direct Involvement of Ministry of Agriculture Training Institute Students and Tutors in the Farmer Training Process", by D.G. Acker

"Competencies of Newly Employed Agricultural Extension Workers as Perceived by Their Supervisors" by D.M.Z. Sendeu, MATI Nyegezi

"Training Materials Development: A Case Study of the Farmer Training and Production Project", by D.G. Acker

"Farmer Training Wing Activities at U.A.C.", by O. Kussaga

"Trainer's Guide to Farmer Centered In-Service Training of Extension Workers", by D.C. Scheinman and G.E. Mariki

Papers delivered to the AATC included:

"Student Outreach Program", by MATI Nyegezi

"Agromechanisation for Higher Agricultural Production", by MATI Mtwara

"Farmer Based Agricultural Training", by MATI Ukiriguru

"Tutor's Guide to the Organization and Conduct of the 8 Week Student Field Practical", Headquarters

"Lessons Learned to Date by the Farmer Training and

Production Project", by MATI Mtwara

In addition to numerous papers which were presented to the National Farmer Training Workshops the Project also documented its findings in:

- Annual Reports
- Quarterly Reports
- Newsletters
- Trip Reports
- Study Tour Reports
- Village Data Summary
- Miscellaneous Reports

PROGRESS TOWARD SPECIFIC PROJECT OUTPUTS

a) A Farmer Training Wing at each of 4 participating MATIs.

Comment: At the close of the Project there were active Farmer Training Wings at 6 participating MATIs. It is noteworthy that the former Ministry of Livestock Development announced in 1982 that it would open farmer training units modelled after the Farmer Training Wings at all of its Livestock Training Institutes (LITIs). By the close of the Project two out of five LITIs had already established operational farmer training units. It is also noteworthy that the present Ministry of Agriculture and Livestock Development announced in August 1984 its plan to expand the Farmer Training Wing program to all agriculture and livestock training institutes in the country.

b) Technical assistance provided by MATIs to villages (including training at Farmer Training Wings and in villages).

Comments: Small farmer training programs have been designed, tested, revised and documented at the first five Project sites. The training process placed heavy emphasis on offering farmers:

- a) up-to-date research findings
- b) a choice of technologies depending on their needs
- c) a chance to choose the course content based on their own specific training needs
- d) simple extension booklets in Kiswahili
- e) opportunities to talk directly with researchers
- f) ample opportunities to practice new skills
- g) follow-up support during "re-entry"

The following table helps to illustrate the breadth of involvement by Wings in direct farmer training.

Table # 12: Direct Farmer Training Events Sponsored by Wings

Land Use Planning	Legume Production
Animal Health	Cashewnut Production
Termite Control	Rope Pumps for Irrigation
Rabbit Production	Human Nutrition (Adult)
Village Planning	Human Nutrition (Children)
Groundnut Production	Use of Contact Farmers
Cassava Production	Communal Farm Organization
Sorghum Production	Pigeon Pea Production
Banana Production	Citrus Production
Coconut Production	Vegetable Gardening
Compost Preparation	Cotton Production
Animal Traction	Farm Implements
Tree Planting	Bullrush Millet Production
Cabbage Production	Potato Production
Maize Production	Pig Production
Dairy Production	Goat Production
Grain Storage	Village Record Keeping

In addition to formal residential courses and in-village courses the Wings also offered technical assistance to farmers through the vehicle of student village outreach activities. Largely due to outstanding efforts by individual Wings sites, the arrival of buses and the increased awareness on the part of MATI principals and staff of the importance of getting students off the campus for practical training, the amount of technical assistance offered in this manner increased dramatically during the last 18 months of the Project.

At the close of the project 24 villages were receiving technical assistance from the Farmer Training wing.

c) Trained staff and students in data collection and analysis methodology.

Comments: Training of students and staff in data collection and analysis was initiated during the first reporting year of the Project. Since that time, training was repeated for each new

academic class. Fortunately, this training evolved toward a point where the tools of data collection and analysis were understood within the framework of the extension cycle rather than simply as mere academic exercises. In support of this output a manual entitled Tutor's Guide to: Training Agriculture and Livestock Students in Data Collection and Analysis was published by the Project and distributed to all MATIs and LITIs. This publication includes both teaching notes for tutors and copies of all major data collection instruments developed under the Project.

d) Simple information gathering instruments for use in research, training and extension at participating MATIs.

Comments: These methodologies were developed early in the Project, were tested and refined and were later incorporated into several publications produced under the Project. The following are most relevant:

"Tutor's Guide to Training Agriculture and Livestock Students in Data Collection and Analysis"

"Trainer's Guide to Farmer Centered In-Service Training for Extension Workers"

"Tutor's Guide to Extension Programme Planning and Evaluation"

In addition, an in-house Project impact survey was conducted during the last four months of the Project and preliminary findings were reported back to Wing staff at the final Project workshop held in Arusha in August 1984.

It is noteworthy that the Wings at Nyegezi, Mlinagano, Uyole and Mtwara have each designed, field tested and conducted their own original localized surveys.

e) Stronger linkages among research, training and extension to insure the flow of new ideas to the small farmer

Comments: During the course of the Project the following means were utilized to strengthen linkages among research training and extension:

- Advisory committees and inter-agency meetings at each Wing met on an average of three times per year.

- The National Coordination Committee met 3-6 times each year. This committee was composed of representatives of the following offices:

- Division of Extension and Technical Services
- Division of Agricultural Research
- Tanzania Agricultural Research Organization
- Office of Research Extension Liaison
- Tanzania Livestock Research Organization
- Division of Manpower Development
- Department of Agricultural Education and Extension
- Training Section of the Ministry of Livestock Development
- Research Section of the Ministry of Livestock Development

- Researchers have been integrally involved in the development and review process for all teaching packages.

- Extension worker in-service training courses have been developed after consultation with Regional extension officials.

- Project Coordinators addressed Food Crop Coordinating Committees, seminars for senior extension administrators, national policy meetings and numerous national training workshops.

- Project Coordinators were appointed to the University of Dar es Salaam as External Examiners in the Department of Agricultural Education and Extension during 1982, 1983, and 1984.
- Project staff participated as resource persons at numerous training and development workshops assisting in the development of training materials for nonformal education, curriculum development, teaching methodology, and extension program planning.
- Project staff participated in consultations with other donors as they prepared project proposals for assisting Tanzania in the areas of extension worker and farmer training, farming systems research and rural development.
- Copies of letters, memos, trip reports, papers and meeting minutes were sent to appropriate research and extension officers.
- Personal visits were made to extension and research officers at all levels. For example, every trip to the field included a call on the RADO, DADO, research institute Director and staff.
- Training materials development strategy meetings brought together researchers, extensionists and trainers from various levels throughout the country.

f) Planning papers for extension, Regional and District development officials.

Comment: Planning and position papers were presented by Project staff at each of eight national Farmer Training Workshops during the Project. In addition, the Project Coordinators office made formal presentations at seminars for extension officers, at research committee meetings and at training conferences. In addition, papers were prepared for the National Council of Agricultural Education, the Annual Agricultural Training Conference and the Tanzania Society of Animal Production.

g) Teaching materials and teaching techniques developed for small farmer training programs.

Comments: See Table # 11 for a listing of teaching packages produced under the Project. These packages combine effective teaching techniques with the most up-to-date research recommendations available in the country. The target audience for these packages are small farmers and village level extension workers. The following is a list of the distribution points for the teaching packages:

Folk Development Colleges	Districts
MATIs	LITIs
Agricultural Secondary Schools	Ministry Library
Farmer Training Centers	Regions
Other Projects	Neighboring Countries
CCM	Sokoine University

h) Improved in-service training courses for extension agents at the MATI.

Comments: The Farmer Training Wing at MATI Mlingano, Tanga, was given the lead role in developing and testing improved methods for providing in-service training for extension workers. The Mlingano Wing conducted a series of medium-term residential training courses in conjunction with Regional and District authorities in Tanga Region. From this experience a manual was developed for use by other Wings and trainers of extension workers throughout the country. The manual is entitled: "Trainer's Guide to Farmer Centered In-Service Training of Extension Workers".

Also, materials developed by the Wing were used by the Kilimanjaro Regional Agricultural Development Office in training extension workers from three districts. The Ministry of Agriculture and Livestock Development is reviewing the publication for inclusion in its expanding program to retrain several thousand field auxiliaries.

i) Yield-increasing farming practices successfully extended to farmers and villagers.

Comments: This non specific output leaves itself open to interpretation. Nonetheless, according to the in-house survey of villagers in 12 of the villages assisted by the Project :

- 54% of the farmers interviewed said that they had experienced higher crop yields and an increase in income as a direct benefit of their association with the Project.

- Of a total of 386 new practices which farmers said they have adopted during the last four years, 289 of the practices were attributed by farmers to their contact with the Farmer Training Wing while 65 were attributed by farmers to contact with their extension worker.

In addition, while the final Project evaluation indicated that the Project needs to strengthen its technology screening process, the evaluation team did observe farmers practicing what Wing staff claim are yield increasing practices extended under one or more of their programs.

j) Improved production input packages tested in the MATI and Farmer Training Wing-sponsored villages.

Comments: Demonstrations of improved production packages were sponsored by all Wings. See Table # 13:

Table # 13: FARMER TRAINING WING DEMONSTRATIONS

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MATI	Type of Demonstration
Mlingano	Coconuts Pit Grain Storage Raised Grain Storage Maize Drying Crib Citrus Bananas Rabbits
Mtwara	Groundnuts Sorghum Cassava Bambara nuts Cowpeas Green Grams Maize Sesame Raised Grain Storage Rabbits
Nyegezi	Cotton Sorghum Cassava Vegetable Gardening Tree Planting Nutrition
Uyole	Potatoes Vegetables 5 shovel cultivator Maize Nutrition Dairy Production
Ukiriguru	Cassava Cotton Sorghum Vegetable Gardening
Ilonga	Weed Control in Maize Time of Planting in Maize

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SUMMARY

PROJECT STRENGTHS

PROJECT INSTITUTIONALIZATION

The Farmer Training and Production Project attained a high degree of institutionalization during its lifetime. Evidence of the degree to which the Project had been institutionalized includes, among other indicators:

- a doubling in FY 83 and FY 84 of the Ministry of Agriculture recurrent budget line item for the Farmer Training Wings.
- announcements made by the Ministry of Agriculture and Livestock Development of their intention to expand the farmer training concept to all training institutes under their jurisdiction, and
- the assignment of two very talented senior officers to run the Project after the U.S. contract technical assistance team turned over its duties.

In retrospect, several factors appear to have played important roles in developing the kind of host country ownership for this Project that all such projects strive for. These factors include:

- The initial concept of the Project originated at working levels within the Ministry of Agriculture. In providing technical assistance USAID was responding to a genuine

expressed need of the Ministry.

- A national coordinative committee was established as an advisory group at the earliest point in the Project to insure broad based understanding, publicity legitimacy and support for the Project.

- The Project simultaneously launched work at remote sites and at the Ministry of Agriculture Headquarters. U.S. technicians were posted to live at and work closely with field institutions rather than trying to manage a project by remote control from a distant capital city. Technicians entered into this pilot Project as co workers in the development of farmer and extension worker training methodologies rather than as experts assigned to impart their knowledge to the uninformed.

- Counterpart staff members were assigned by the Ministry of Agriculture for every U.S. Technician. In almost every case these individuals were dedicated, competent officers interested in the objectives of the Project. The importance of the role of counterpart staff in technical assistance projects wherein institutionalization is an objective cannot be overemphasized. Of primary importance is the effect counterpart staff have on their expatriate colleagues in acting as cultural sensitivity sounding boards and providing ongoing orientation to the agricultural, ecological and social system.

- Frequent National Farmer Training Workshops were held in order to share the findings of the Project sites with the largest possible audience. In addition to Ministry of Agriculture personnel, these workshops were attended by representatives of the University, other Ministries, the Party, extension field offices, other projects, other donors and religious missions.

- Project personnel made themselves available as speakers and resource people at conferences, seminars, meetings and classes. Several thousand people outside of the Project were thus involved by the Project.

HUMAN RESOURCE DEVELOPMENT

While the value of vehicles and other equipment provided under the Project will undoubtedly be close to nothing within a year or two after Project phaseout, the value of the return on investment in human resource development will continue to rise. Long-term off-shore training, short term study tours, in-house workshops, consultative site visits and other educational and motivational investments in time and money have produced a well qualified and motivated core staff of well over 30 people. Along with this focus was an effort on the part of the contract team to insure that the handing over of duties to counterpart personnel was done well in advance of departure and in a sensitive and professional fashion. Additionally, and to some extent unintentionally, permanent departures from post of contract technicians were staggered over the course of two years. The end result was a relatively smooth transition period which left

Tanzanian officers in place successfully managing the six wings plus a headquarters office.

DOCUMENTATION

Perhaps because the Project focused on extension and training a great deal of energy was directed toward documentation of results and their subsequent dissemination. Indeed, Project headquarters looked not unlike a writers workshop and small-scale printing operation. The end result is an impressive array of usable training publications and a paper trail of reports, newsletters and papers that interested parties in the future should have no difficulty following. At the time of the mid-term evaluation it was suggested (partly in jest) that the final report could be prepared simply by stapling together all of the reports and training publications. Aside from the difficulties associated with procuring such long staples it was decided that a formal final report would round out the collection of materials available to future project planners. Given that institutional memory is short the work invested in this report should be justified.

It is, perhaps, noteworthy that in addition to writing all of the publications found listed in the previous sections, the Project also printed all of the publications in country using intermediate reproduction technologies which are available and widely practiced in the country. This was a critical point if the series of publications was to be continued without foreign assistance.

Spotlight on extension American Land Grant Colleges have something unique to offer developing countries in the field of

agricultural education and extension. Yet I also saw that to a surprisingly large extent the real achievement of this Project lay not only in the experience we brought from other countries but perhaps more importantly the spotlight we were able to focus on an area that Tanzanians had been eager to improve on themselves. The Project made resources and encouragement available as the Ministry sought to make important changes within their system that they felt to be changing. Perhaps the best example of proof that the Ministry had wanted to strengthen in the area of student/farmer is the Village Block program begun by MATIs in 1978 to encourage greater interaction between the MATI and surrounding communities. The Farmer Training Project made it possible for MATIs to mount such a program in a professional well supported manner. One indication of the motivation felt by the Project staff was the strong showing at the National Council for Agricultural Education which attracts participants from a number of related Ministries. At the NCAE meeting of 1984 50% of the papers delivered to that sitting were written and delivered by Project staff.

GRASSROOTS APPROACH

It was particularly heartening for Tanzanians to see that when carried out in a professional manner grassroots, participatory rural development approaches were more than just rhetoric from the speeches of their President. Project staff saw for themselves the power of harnessing people's self-directed involvement for the good of the community. They saw successful rural development projects. They also saw the futility of beatings, directives and

fines when trying to motivate peasant producers.

PROJECT WEAKNESSES

PROJECT FACILITIES

Project facilities such as technician housing, farmer classrooms, staff offices, and farmer hostels were not ready for use when the rural development specialists arrived to begin their job. An inordinately large amount of time was spent by staff in completing these facilities.

TECHNICIANS

While diversity of approaches by various technicians can be a useful asset to a pilot project it can also breed anarchy. The expatriate technicians on this Project would have benefitted from an orientation cum long range planning session at the onset of the Project. As it was, the team arrived over the course of 6 months and did not meet as a team until several months after the last members arrived in country.

COMMODITIES

The planning on the original list of commodities was adequate for the needs of the Project. Unfortunately, these items did not arrive until 12-24 months after the Project was underway. Procurement continued to be a weak area throughout the Project in spite of two full time professionals devoting themselves to the art of procurement for the USAID Mission. Procurement is a very difficult area under the best of circumstances. Without a working record system it becomes virtually impossible.

DATA COLLECTION

Approximately 10% of Project staff time was spent on data collection. Very little time was spent on systematic data analysis. Instead, impressionistic observations tended to play a much larger role in program planning. There were several flaws in the area of data collection and analysis:

1) The Project Paper puts a great deal of emphasis on data collection and analysis. Emphasis should have been placed on program planning using data collection and analysis as one of the tools of program planning.

2) Data collection instruments were designed without the involvement of field extension personnel involvement. As they are one of the groups who could have ultimately profitted from such data they should have been involved in the design of the surveys.

3) Surveys were voluminous, not formatted for easy tabulation, and lengthy enough to put even the most energetic farmer to sleep. To exacerbate the situation, microcomputers were not used even at headquarters level even though computer support appears as a line item in earlier budgets. When results were finally analyzed at headquarters and returned to the field the results were no longer "fresh".

MAJOR PROBLEMS

RECURRENT FUNDS

During the first two years of the Project's operation the Wings experienced shortages of operating funds. Table # 14 illustrates the shortfall of funds flowing from the Ministry to the Wings. It also serves to illustrate the stronger "second half" funding support.

Table # 14: RECURRENT FUNDS

FISCAL YEAR	REQUESTED BY WINGS	ALLOCATED	NUMBER OF SITES	AMOUNT PER WING
81-82	900,000	200,000	4	50,000
82-83	1,000,000	300,000	5	60,000
83-84	1,200,000	600,000	6	100,000
84-85	1,500,000	1,200,000	6 + HQ	172,000

FUND RELEASE

The timely release of Ministry of Agriculture local recurrent funds did not take place under the Project. This was a key issue raised countless times by Wing staff and Project coordinators but never rectified by those in a position to handle it at Ministry Headquarters. An estimated loss in operating efficiency of close to 20% can be expected to continue if fund release procedures are not streamlined. The amount of paper work required, the number of people who have to become involved and

the number of trips made to regional offices is out of proportion to the value of the money involved. While intricate systems of checks and balances do tend to reduce the amount of money which disappears illegally, we must also consider the net effect of the myriad of money protection procedures, inordinate delays in development activities.

FOREIGN EXCHANGE

Scarcity of foreign exchange is not a new problem in Tanzania. Yet what is most surprising is that the sector responsible for producing the majority of the foreign exchange for the country cannot support its own Ministry's foreign exchange requirements. The reliance on donors rather than the foreign exchange earnings of the agriculture sector puts the Ministry in a precarious position regarding program stability over time.

Foreign exchange must be made available to the Ministry for purchase of the inputs of agricultural development. If this sector continues to receive an inordinately small amount of the national budget there is no reason to believe that the country will develop.

REPORTING

Reporting and accounting procedures must be streamlined. Development does not take place in an office while writing a budget or a quarterly report. These documents are necessary but could easily be boiled down to their most essential items.

STAFFING

During the first two years of Project operation the Ministry did not provide manpower at the levels to which they had committed themselves in the Project Paper. The Project Paper called for 1.5 senior staff and 2 junior staff to be assigned to each wing. Early on in the Project the most critical gaps in staffing were experienced at U.A.C.

By the third year the Ministry had filled the manpower gaps but not before substantial progress had been lost. However, at Project close there were an average of five staff attached to each wing.

STAFF MOTIVATION

With low salaries and increasingly fewer opportunities for study tours and further training the Ministry has had and will continue to have trouble in motivating and retaining staff.

HEADQUARTERS FACILITIES

Vermin, office theft, unmaintained premises, lack of staff buses, limited staff housing, poor telephones, inefficient air conditioning, accumulation of garbage in the halls, lack of security for parked vehicles, etc, serve to create conditions unfavorable to efficient work and high morale.

PROCUREMENT

Orders placed through USAID took on an average of 14 months to arrive. USAID's system of procurement is moving rapidly toward a point where it can no longer function. If USAID justifies their

existence by the vital role they play in managing projects and contracts one would think they would be compelled to turn in a better performance in managing this crucial aspect of project management. It would appear that the procurement system is in need of an overhaul.

USAID RELATIONS WITH PROJECT

With the exception of the period preceding the midterm evaluation the USAID Mission was generally supportive of the Project. While the Project did weather a brief period without a Project Officer, in general the support from the Project Officers assigned to the Project was well above average.

The Project suffered immeasurably from a period immediately preceding the mid-term evaluation during which USAID exhibited a strong interest in closing down the Project. It appeared that this determination was made more on the basis of the Mission's need to economize rather than on the basis of the merits of the Project. The determination to consider closing down the Project appears to have been made on the basis of conjectural and impressionistic evaluations of Project progress rather than on any systematically collected data. Due in large measure to this disruptive period during which the Project spent much of its energies in justifying its existence the consortium lost one of their technicians who left in frustration to join another project.

SPARE PARTS

Spare parts for the Landrovers, buses and motorcycles are in

scarce enough supply that the Project could not run without ordering imported spare parts. Common vehicle expendables such as tires, batteries, etc., are no longer available. When this situation is considered in relation to the age and condition of the vehicles turned over to the Ministry of Agriculture at project completion there is every reason to suspect that the Project will be nearly impossible to carry on at its present level of achievement without new vehicles and accompanying spare parts. Fortunately, due to a concerted effort to leave behind a 12 month supply of spares and supplies, the Ministry will have a grace period during which they will need to attract a donor to support foreign exchange costs for future activities.

PROJECT DESIGN

The Farmer Training and Production Project had a single major flaw: it was designed to be "all things to all people". Because of overly ambitious objectives, limited funding and a short time frame the Project suffered an identity crisis. While it is a credit to the Project that extension officials considered it a successful extension Project, training officials considered it a successful training Project and researchers commended it as an aid to their pursuits, it raises the question what was the Project designed to be and ultimately, what did it become. Primarily because the Project was overly ambitious it became a given that all objectives could not be fulfilled in a meaningful fashion. This provided a forum during the first two years around which USAID and the contract team argued ad infinitum, one group insisting that the Project was a farmer training Project while

the other argued that it was an extension worker training Project. Yet this kind of dialogue can be very useful as a prelude to mid course corrections. Unfortunately, the tight Project design and the Mission's reluctance to approach Washington to seek permission to make necessary mid course corrections prohibited all but minor adjustments to be made. It would appear that making mid course corrections such a monumental or politically laden task is self defeating.

RECOMMENDATIONS:

Given that a great deal of time and energy have been spent in developing recommendations for the future of this Project I will restrict this section to those areas for future programming which need particular emphasis and those areas relating to general considerations of technical assistance projects.

RECOMMENDATION 1:

Provision of training and extension services to farmers cannot be separated from an equal and concurrent effort to supply inputs to the farmer. Conversely, input supply programs should be mounted in conjunction with training and extension programs. While it is theoretically possible for government to control input supply in practice such involvement proved to be a dismal failure.

RECOMMENDATION 2:

Training village follow up, input supply and village planning must be earned out as elements or activities in a comprehensive program plan rather than executed as single and separate haphazardly planned events.

RECOMMENDATION 3:

Farmer training and subsequent follow up by extension staff should not be separate functions handles by separate groups. Program continuity is lost when trainers simply "hand over" trained farmers to the extension service. This continuity gap can be bridged by:

- 1) involve trainers in follow up visits
- 2) involved extension workers in the farmer training

courses as observes or trainers.

RECOMMENDATION 4:

Among the gamut of extension training intervention, residential farmer training is relatively expensive. Transportation, food, lodging center maintenance costs, and health care are expenses incurred by a farmer training center. For farmers, sacrifices include giving up a block of time, spending time away from family, lost income, etc.

Residential farmer training has the advantage of being relatively straight forward to manage. Unlike village extension work with its often times semi-amorfous modus operandi, residential farmer training is relatively easier to evaluate (trainees names are known, number of contact hours are known, a center provides a relatively stable environment etc.)

In reference to the above, government planners should weigh the expenses of residential training against the relative ease of management of such centers.

RECOMMENDATION 5

Without new vehicles and additional spare parts orders to support those vehicles during the next few years the impact of the investment in manpower development made during the Project will be significantly reduced. The Ministry should move immediately to identify a new donor to assist the farmer and extension worker training efforts begun under this Project. As donors generally take a long time to process such requests it is essential that meetings be set up during the next few months in order to get orders placed and into the country before the current stock of

supplies and equipment dwindles or completely deteriorates.

In the future the Tanzanian government would be wise to negotiate during the project planning phase for new equipment to be provided at project phaseout in order that they be able to continue the efforts started during a donor funded project.

RECOMMENDATION 6

It would be ideal to have a small foreign exchange fund set aside for essential small orders during the first 12 months after Project completion. A small fund would allow the Ministry to cope with contingencies which will inevitably arise.

RECOMMENDATION 7

It would streamline operations immensely if the Wings could be issued quarterly installments of their annual appropriation automatically and account for them just as MATI Principals account for their automatic quarterly release of funds.

ACKNOWLEDGEMENTS

As the Chief of Party of the Farmer Training and Production Project vested with the responsibility of closing down the Ministry of Agriculture office in which West Virginia University and have Nort Carolina Agricultural and Technical State University maintained a consistant presence over the past decade I would like to thank all of the officers of the Ministry of Agriculture for their patience and understanding in working with

the Americans on the various technical assistance teams.

As the author of this final report I would like to thank Lloyd C. Pickett and Robert H. Maxwell for their contributions to the preparation of this document.

I would also like to express my appreciation for the strong support USAID offered the Project during the last two years.

APPENDIX

**PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK**

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION
<p>Program or Sector Goal: The broader objective to which this Project contributes:</p> <p>To improve the social and economic well-being of small farmers in Tanzanian villages.</p>	<p>Measures of Goal Achievement:</p> <ol style="list-style-type: none"> 1. Increase in crop and live-stock production. 2. Increase in income from village communal and individually operated farms. 3. Increase in agricultural knowledge as manifested by behavioral change and adoption of better farming practices. 4. Increase in group problem solving and planning capability at the village level. 	<ol style="list-style-type: none"> 1a. Data collected under Project. b. District production statistics. 2a. Data collected under Project. b. Cooperative records. 3a. Data collected under Project. b. Technologies package utilization. c. Utilization of simple but output increasing farm inputs. 4a. Data collected under Project. b. Increase in usefulness of plans developed by villagers and their committees.

**PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK**

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION
Project Purpose	Condition that will indicate purpose has been achieved: End of Project status.	
To increase food production through the mechanism of developing a mutual understanding between farmers and extension agents in such a systematic way that it will lead to better comprehension and appreciation of farmers' production problems and his social/economic attitudes. It is anticipated that this will then result in the preparation and adoption of improved agriculture cultural practices and farm technologies to the direct benefit of the farmer.	<ul style="list-style-type: none"> 1a. On-going courses for farmers at participating MATIs b. Village level, on-the job training by MATI. 2. MATIs and other institutions receiving useful flow of information from villages for use in modifying and improving farmer training and extension methodologies and introducing new technological packages and farm practices useful and acceptable to small farmers and villages. 3a. MATI staff and students (future extension workers) have a better understanding of behavior and attitudes of farmers because of personal relationships established during data collection and farmer training experience. b. Knowledge acquired from information gathering and analysis contributing to desirable curriculum changes at MATIs aimed at making the training of extension workers (and agricultural officers) more relevant to their future work. c. Courses also being modified accordingly at other MATIs and training facilities. 4a. Knowledge acquired being utilized by villagers and development officers for village and broader-level planning efforts. 	<ul style="list-style-type: none"> 1a. Numbers of Farmer Training Wings of courses and farmers attending annually. b. On-site inspection. 2a. Interviews with appropriate officials and village leaders. b. Review of data collection and analysis work and its application. c. Interviews with farmers. d. MATI and research station reports on adoption rates of new technological packages. 3a. Interviews with participating students and farmers and student reports. b. Records on MATI curriculum and directives from the Director of Manpower Development. Also records of curriculum planning and development meetings for the Manpower Development Division. 4a. Village data collection and analysis over time and interviews with appropriate development officials. b. Analysis of training modifications made

b. Knowledge acquired being used to improve farmer training and extension methodologies.

over time and interviews with training and extension staff.

LOGICAL FRAMEWORKPROJECT DESIGN SUMMARY

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION
OUTPUTS	MAGNITUDE OF OUTPUT	
1. Farmer Training Wing at each participating MATI	1. One per institute	1. Project reporting and on-site examination
2. Technical assistance provided by MATIs to villages (including training at Farmer Training Wing and in villages	2. Roughly 16 villages containing 15,000 men and women engaged in farming directly affected	2. Project reporting District reporting Observation Village records
3. Trained staff and students in data collection and analysis method	3. Approximately 86 staff and 400 future extension agents	3. Project Reporting
4. Simple information gathering instruments for use in research, training and extension	4. To be determined by agricultural development specialists and MATI staff based on problems analyzed	4. Project reporting (including provision of instruments Extension materials Training Materials Research Guidelines
5. Planning Papers	5. To be determined by agricultural development specialists and MATI staff according to problems analyzed and demand for information	5. Project reporting (including provision of papers)
6. Farmer Training techniques materials	6. To be determined	6. Project reports (including provision of farmer training materials)
7. Modified MATI extension in-service training materials	7. To be determined	7. Project reports Examination of materials
8. Improved agriculture cultural practices	8. To be determined	8. Project reports and field observation
9. Improved production packages	9. To be determined	9. Project reports and field observation

RECOMMENDATIONS OF THE MID-TERM EVALUATION

Recommendation No. 1:

The Farmer Training and Production Project should be extended to September 1984 to permit the realization of the outputs envisioned in the logical framework as modified below (Section A-2). This recommendation is contingent upon satisfaction of Recommendations No. 2, 3, 4, 5 and 8.

Recommendation No. 2:

Some changes should be made in the logical framework of the Project Paper based upon the experience to date (Section A-2). USAID, Kilimo and the Contractor should agree to these modifications. All of the contract staff, in collaboration with the USAID Project Officer and Kilimo Committee, should jointly plan the program and outputs (implementation plan) for the remainder of the Project's life and concentrate efforts to insure the desired end products.

Recommendation No. 3:

Phase out Project activities at MATI Nyegezi.

Recommendation No. 4:

The Government of Tanzania must make a firm commitment to provide the required financial and personnel support to the Project; including the assignment to the Project of all six participants trained in the U.S. under the Project.

Recommendation No. 5:

The Ministry of Agriculture should provide a formal plan and accord which will officially define the present and future roles

of the Research and Extension departments in the furtherance of the Project objectives.

Recommendation No. 6:

Upon the termination of the activities at Nyegezi, reassess the transport and other commodity needs at each wing, reappportion the resources according to need, and immediately order the spare parts required to keep the required vehicles and motorcycles in service for the duration of the Project. All vehicles and motorcycles should remain under the control of the Contract technician at each site.

Recommendation No. 7:

Readjust the remaining U.S. commodity inputs to eliminate those items which, because of non-arrival are deemed least useful; and augment the amount for office supplies and spare parts for Landrovers and motorcycles. Eliminate commodities originally planned for possible expansion of the Project (unless Scenario No. 4 is implemented).

Recommendation No. 8:

Contract team leader and technicians should begin immediately to refine reports on accumulated experiences, basic survey instruments, topical lesson plans, in-service training presentations, demonstration guidelines, and related information so that publications can commence in manual form. Contributions by Tanzanian staff should be encouraged. The contractor should earmark sufficient funds for publication of the documents. The printing run should accommodate distribution to Tanzanian

development agencies as well as AID interests.

Recommendation NO. 9:

The six participants trained in the U.S. under the Project should be assigned two to each Wing. After spending the complete growing season, a system of rotation should be initiated to permit each participant a familiarization visit of one month each to two of the other Wings. Their permanent assignment to Project activities should be made at the conclusion of this period.

Recommendation No. 10:

The Project should send one high level representative of the Agriculture Research Department and one of the Extension and Technical Services Department on a six-week study trip abroad to observe exemplary models of research-training-extension liaison in action.

Recommendation No. 11:

If Scenario No. 4 of the options is accepted (expansion of the Project) the WVU Contract Technicians should be made available to assist in the start-up operations of the additional MATIs.

RECOMMENDATIONS OF THE FINAL EVALUATION

ADMINISTRATION

Recommendation No.1: Organizational Structure

The F.T.W. should no longer be regarded as a wing or limb, but as a service department which will be run by a department head who will be advised by a steering committee composed of department heads of the Institute. The FTW department head should serve as facilitator or lead tutor in the MATI outreach program. In this way the department should be able to make use of the resources available interdepartmentally. The Farmer Training Department should report to the Principal.

Recommendation No.2: Staff, Funds, Equipment and Supplies

Both national funds and donor resources be allocated to provide for the following basic FTW requirements:

Wing Staffing. An adequate staff number should be established for each Wing. Job descriptions should be developed, and all staff responsibilities fully described. The team encourages cross teaching between Wing and MATI tutors when carried on in an equitable manner. Several Wings feel they are short staffed or are programmed too heavily into regular MATI teaching programs.

Finances. No additional sites should be established without proper increases in total FTW resource allocations. We agree the FTW philosophy should be spread to other MATI's, but it should not be diluted. Hard currency costs must, it appears, be met with outside donor assistance.

Equipment and Materials. Sufficient resources should be allocated to provide for equipment maintenance and instructional material purchases as needed. Transport repair is, and will be, a major constraint to the total working capacity of all FTW's.

Facilities. Several Wings do not have special sleeping accommodations for their farmer training short courses. This should be treated at each affected wing as soon as possible in order to provide an equal opportunity for farmer training at each MATI. Maintenance costs should be included in all FTW budgets for the present sets of wing buildings. Any additional wings to be established may need construction cost allocations.

Recommendation No.3: Management Constraints

That the Ministry take the necessary action to streamline the administrative and management constraints as identified by the evaluation exercise:

Chain of FPHP command. The team suggests that a clear chain of command be established between FPHP headquarters staff, the Wings, and between the Wings and MATI principals.

Wing operational funds. The present system somehow does not allow the timely arrival of operational funds. This could be a major point of discussion at the next workshop and perhaps the responsible fiscal control people from the Ministry could participate at these work sessions in order to develop a more productive fiscal mechanism.

FTW Reporting Systems. The team suggests that a monthly reporting system be initiated that will provide the FTTP headquarters with a minimum set of indicators of Project operational progress and allow some measures of administrative responsibility and response. Production increases, Project impact, farmer adoption rates, student/farmer contact hours and a number of other indicators should be included on this simple reporting format.

Project Supervision. The Project will continue to require a number of supervisory visits by the FTTP coordinator. The Project is still young and very individualized at each MATI. During the coming years a standardization process will be undertaken in order to set certain FTW minimum outputs, basic levels of inputs, selection process for Wing activity etc. All of these will require active participation of the Project coordinator.

LINKAGES

Recommendation No.4: Advisory Groups

- a. The national coordinative committee comprising membership from research, training, and extension divisions should be preserved at the national level.
- b. A zonal advisory committee should be maintained at MATI/LITI level with representation from the Research and Training Institutes, Regional/District Agricultural and Livestock Development officials.
- c. Interdepartmental advisory committee or task force within the training institute headed by the Principal and the FTW

facilitator serving as the secretariat.

- d. A position of program coordinator within the training Division at headquarters with supporting staff should be retained in place to serve as the secretariat and program supervisory body, and to handle finances, logistics, etc.

LINKAGES

Recommendation No.5: Trials

That the Division of Manpower Development establish formal working arrangements and written agreements with the Division of Research to insure proper linkages with the FTW's for the promotion of joint on-farm research activities such as surveying and on farm (off station) verification trials.

WING FUNCTIONS

Recommendation No.6: Programs

Three basic areas of concentration are recommended for programming at each MATI. Local conditions determine the balances between each of the three outputs in terms of resource availabilities for allocation, MATI time investment, and FTW levels of involvement.

Area (1) Instructional Programs

MATI Students. Both diploma and certificate students should participate in the weekly FTW village extension activities. The respective tutors of each MATI subject specialization should also be encouraged to carry on their practicals whenever possible in the villages. A major effort of the FTW should be to continue with this

student target group, and the FPHP approach of learning from the farmer should be maintained.

In-Service Training. The FTWs should program at least one in-service course per year for all the change agents that work in the same region or districts as the MATI. A minimum number of courses and agents should be programmed for each MATI, each year, and every effort made to complete these goals.

Farmer Training. A minimum number of Farmer Training Activities for each FTW should be established for each MATI and courses completed as scheduled. The review teams suggests a certain number of Farmer leaders in each class should be taken from villages outside the normal MATI work area and that are not collaborating with the FTW at this time.

Area (2) Agricultural Production Increases

Research Activities at the MATI's. More effort should be given by the Wings to a scientific examination of recommendations being offered to farmers. This new effort should be carefully programmed with station researchers, where possible, and with extension subject matter specialist that may be working in the same region or district as the MATI/FTP Project. On-farm research is an important link in the process of applied research and generation of appropriate technology for small farmer production recommendations.

The FTW's have a unique opportunity to fill this

investigation gap in at least their six geographic areas of concentration. Students taking agronomic studies as a regular part of their educational process should be exposed to this research methodology of on-site validation and verification of technological interventions.

Extension Activities in the FTW villages. The team was impressed with the extension methodologies that the Wings have used in their treatment villages. The approach that has been used by the FTTP is also commendable in that it teaches students (and tutors) the means to understand the farmer and why he manages his limited resources as he does and thus will enable them, later as extension agents, to motivate farmers to increase agricultural production. The team feels that more might be done to promote a higher FTW interaction and promote more technology transfer to the selected MATI communities. The use of student produced posters, hand-outs, plot demonstration signs, and the location of new village demonstrations, even in crops not normally treated by the FTW but where modern technology interventions can be shown, should be encouraged. We feel that night meetings of a social and educational nature could be given in assisted villages and others outside the normal MATI bounds. These would be for public relations and education purposes. No MATI makes use of the Ministry's five hours of radio programs,

prepared by the extension service in Dar es Salaam, to communicate their FTW special messages. A number of MATI vehicles enter the treatment villages each day and are exposed to hundreds of farmers a week. Simple well made instructional posters with a special seasonal message or theme about Ministry activities or production recommendations, etc., could be carried by each car, truck, bus, and jeep that leaves a MATI compound. The team feels that each MATI principal and Wing leader should assign a number of these extension techniques each year to the students and the tutors involved with Wing activities.

Area (3) Project Produced Information

Teaching Aids. Excellent progress has been made by the FTTP in the preparation of instructional guides, farmer production manuals, student training materials, slide presentations, and teaching models. We urge the Ministry to maintain this capacity. Much of the work presently done at the national level should be accomplished by the Farmers Education Section and the Curriculum Materials Section. However, we suggest that the responsibility for instructional materials preparation not be passed in its entirety to the National level. We suggest that the Ministry seek special donor support (IDRC, CIDA, others) to carry on this very important Project output. Instructional materials development was at the top of the list of

positive statements made by most of the persons interviewed during this evaluation.

Data Analysis. We urge the Ministry to continue and expand this activity to include more participation of potential users (research, planning, extension, and instructional) in the yearly survey designs. Start a time series evaluation at each MATI of what has happened in the treatment villages as a result of the FTW activities. The team also feels that a national data bank should be developed using Project generated information to provide the FTW network with more agronomic and social information. Much work can be done, we feel, in extrapolation of known and FTW proven production recommendations to other areas.

EXPANSION

Recommendation No. 7: Donor Resource

That the Ministry study the possibility of including more MATI's in the FTW network system if both national and donor resources can be assured for the present Wings and those to be included:

The team encourages the Ministry to initiate new Wings where interest has been shown by the MATI personnel and where the philosophy of the FTWP can be easily transplanted. Sufficient human and financial resource allocations are key issues to the natural spread effect that should take place over the next few years. Associated with new Wings are the hard currency needs for transport and equipment costs. This will vary from location to location depending upon the

proximity of villages to be selected for FTW interventions. The team cautions the Ministry on selection of new village sites. This evaluation has shown that at all present FTW sites, the villages with the closest proximity to the MATIs are the most non-productive locations for student or tutor interventions. Donor assistance will be needed for start-up costs to assure proper logistical and instructional materials support.

The team encourages Project management to search out candidates for new wing leaders within the present Wing staff as well as from without. These prospective wing leaders should foremost believe in the FTTP approach of "...learning from the farmer and from this knowledge be able to assist him, them and their villages to increase production and raise the standard of living in rural areas."

Recommendation No.8: Foreign Exchange

That the Ministry seek further donor assistance to assure the continuation of, and addition of new Wings to, the present FTW network:

Without further donor support the Project may be seriously hindered in its present state of six locations and fully prevented from any meaningful growth of starting new Wings. Foreign currency costs, although not high, are crucial to the continuation and spread of the FTW methodology. AID and the Ministry should be encouraged to lend support to this Project through its PL 480 local currency accounts to assist in nationally available

materials. The Ministry of Agriculture must, the team emphasizes, seek special donor assistance for this program. The most ideal situation would be one outside donor. Lacking this possibility, the Ministry might seek other alternatives such as one donor for each FTW. This approach, the team feels, should only be used if the integrity of the total Project can be maintained. Under a multi-donor arrangement this is a most difficult task under any set of circumstances.

Recommendation No. 9: Further Training

The Ministry continue agricultural education and extension training programs for the Wing staff presently employed and for those that may soon join this cadre.

The participant training component of the FTTPP has produced an excellent and highly motivated teaching cadre. The team encourages the Ministry to search out both short-term and degree training opportunities for the Wings staff.

The team further suggests that the Ministry consider training several members from each of the six operating Wings, in the "art" of Farm Systems Research. The evaluation points out very vividly that FTW presently employed methodology to validate or verify farmer recommendations is not sufficient. An understanding of the FSR approach at each collaborating MATI could first assist better student understanding of this approach to refinements of technology packages, and secondly in the long run produce more efficient farmer recommendations. CIMMYT has offered to give a number of in-country courses to Tanzanian research personnel. Dr.

Shao, the coordinator for National FSR programs agreed with the team that FTW staff could be included in these proposed courses. The team urges the Ministry to formally request CIMMYT to proceed with these training exercises.

FARMER TRAINING IN TANZANIA: A Brief Historical Perspective

Residential farmer training in Tanzania experienced somewhat erratic growth during the last 30 years. Beginning on a very small scale in high potential export crop producing areas under colonial rule such training programs expanded slowly until independence. During the first dozen years after independence the Ministry of Agriculture significantly augmented the fledgling farmer training network, ultimately establishing a total of 52 Farmer Training Centers throughout the country. Perhaps because the Ministry put too many of their resources into the development of the physical plants and not enough into the development of appropriate training methodologies, or perhaps because of the rapid rate at which the network expanded, the program did not produce the anticipated results of increased food and cash crop production. As a consequence, the Ministry of Agriculture Farmer Training Centers began a decade of name changes and inter ministerial real estate swapping beginning with the Prime Minister's Office (as Rural Training Centers) and later under the Ministry of National Education (as Folk Development Colleges). The Folk Development College concept was modelled after similiar institutions in Sweden and was intended to attract adults to a program of life long learning and technical skills development.

Today, of the 52 centers around the country several serve as campuses of the Revolutionary Party's Ideological College, several are used by various Projects, and the remainder continue to serve as Folk Development Colleges under the Ministry of National Education. For the past several years the Ministry of

Agriculture has unsuccessfully campaigned in Parliament to reclaim jurisdiction over 20 of the Folk Development Colleges. As a form of compromise, the Ministry of National Education has invited the the Ministry of Agriculture to oversee participant selection and to provide technical input into two week farmer training courses now offered at 19 Folk Development Colleges (one per region).

While cooperation between these two Ministries is laudable the program has experienced some growing pains, including:

- The extension service which is charged with recruitment of farmer trainees for the two week courses has not always, for a variety of reasons, been able to fill the courses. Some Folk Development Colleges cited low attendance as an operating problem facing them under this current arrangement.
- The extension service is also charged with the responsibility for arranging transportation for farmers attending courses at the Folk Development Colleges. In cases where the extension service tried to supply transportation utilizing their own limited resources problems were encountered when fuel shortages and vehicle breakdowns stranded farmers. In some cases, village governments are expected to provide money for bus fares for their representatives. Whatever the arrangement, problems will continue to be encountered in a situation where training centers are limited to one per region requiring farmers to travel up to a maximum of 150 miles one way to attend a

course. As farmers are not compensated for the time spent attending courses they must be strongly attracted by the curriculum if they are to be expected to attend.

- Agricultural curricula at the Folk Development Colleges tended to emphasize general principles of modern crop and animal husbandry rather than focusing on specific problems confronted by farmers everyday. It has been observed many times that adult learners have less tolerance for education which does not provide a tangible immediate pay off.

- Folk Development College programs were weakened by the lack of laboratory practical equipment, insufficient or marginal farm land, and lack of personnel trained in farmer training.

- Follow up of trainees is not performed by trainers but by the extension service which, having not attended the course, may not know which areas to make follow ups on. As a consequence, messages passed by trainees to participating farmers may not be adequately reinforced.

THE FARMER TRAINING PROCESS*¹

1. Establish an advisor committee composed farmers, extension workers, agricultural researchers, trainers, party officials, and others involved in development work in the area.
2. Gain a thorough understanding of the farmers, their situation, constraints, practices, aspirations, and decision-making processes. (Men and women farmers) such an understanding is developed through:
 - review of the literature
 - visits with other development workers and farmers
 - meetings with the advisory committee
 - conduct of village leader committee
 - conduct of individual farmer surveys
 - conduct of follow-up surveys on particular constraints, crops, labor use, etc.
 - conduct routine on-farm observations involving students
 - conduct a survey of soils, crop yields, pests, etc. as needed
3. Analyse data, plan programs, and assemble task forces (done in cooperation with the advisory committee, consulting experts and village leaders).
 - a. Analyze the information collected, identifying both constraints and extension opportunities.
 - b. Select a few extension programs (3-6 having the highest impact potential).
 - c. Gather small task forces or program work groups to concentrate on analyzing, planning and carrying out each selected program. Involve those farmers and experts who have a vital interest in each program area.
 - d. Develop an extension and training program plan for each constraint selected. Develop comprehensive, measurable, long-term and short-term objectives. Decide activities required to reach objectives specified (what, when, how many, who?)
4. Incept training and outreach projects following these principles:
 - a. Where the training of farmers is used as means to effect change, direct each event at the reduction of a specific constraint to production or well

¹ Adapted from L. C. Pickett

being, use a dialogical and practical approach and plan with villagers how the training will be implemented in the village (as a part of the training course).

- b. Wing staff (who represent the extension worker's normal roll) serve (function) primarily as coordinator and catalysts who coordinate or link the efforts of researchers, extension workers, parastatal workers, trainers, party members, village leaders, etc. via the advisory committee and task forces as well as individually. Harness the knowledge, legitimacy and energies of others in solving problems.
- c. Use a dialogical approach in all communications with farmers. (An approach in which trained agriculturalists and farmers share ideas and learn from each other).
- d. Emphasize education for self sufficiency, not service, in all farmer contacts.
- e. Aim at developing the whole person, not just a farmer's agricultural knowledge and skills, but his confidence in solving his own problems, his leadership skills, etc.
- f. Make repeated follow-ups (contacts) to move farmers to adoption or to gain their assistance in the modification of recommendations.
- g. Use a "train and visit approach" (especially to involve students during the Project).
- h. Emphasize the well-known community development process in cases where community projects are needed.
- i. Integrate the training of farmers with village outreach (extension).
- j. Emphasize the improvement of linkages between all parties who can complement development.
- k. Communicate the need for changes upward to decision makers.
- l. Assist researchers to verify or modify recommended practices.
- m. Train and use master farmers or aids to train other farmers.
- n. Always attempt to further develop those with whom one works. Help them to become effective.

EXTENSION AND TRAINING APPROACHES USED

<u>Area</u>	<u>Approaches</u>
Data Collection	<p>Village leader interview</p> <p>Individual household interview</p> <p>Small group interviewing (men and women separated)</p> <p>Students informally collect small amounts of data during weekly contacts with farmers</p> <p>Short interviews dealing with specific problems, programs or enterprises</p> <p>Field observation (notes)</p> <p>Sampling</p>
Data Analysis and Program Planning	<p>Overall advisory groups used</p> <p>Ad hoc, cross-institutional meetings</p> <p>Meetings with small groups in villages</p> <p>Planning meetings of over two days held at MATI</p> <p>Annual planning meeting held with village leaders</p> <p>Land-use plan analysis and village planning meetings conducted in villages</p> <p>Village committees used</p> <p>Planning at end of short courses</p> <p>Task forces (plan their programs from surveys, own knowledge and farmer feedback)</p>
Linkages to Other Agricultural and Support Groups	<p>Via overall multi-agency (and farmers) advisory groups without farmers present</p> <p>Via overall multi-agency (and farmer) advisory groups with farmers present</p> <p>Via bi-agency meetings</p> <p>Via multi-agency task forces assigned to each program</p> <p>Via jointly conducted village trials</p> <p>Via utilizing consultants and trainers</p> <p>Emphasis upon agricultural supply and credit agencies</p>

Area	Approaches
Major Outreach Emphasis	<p>Collaboration with other projects/programs</p> <p>Concentration upon the training and use of village aids and contact farmers to stimulate agricultural development (farmers training farmers).</p> <p>Concentration on the development of self-reliance in villagers.</p> <p>Concentration on getting agricultural inputs to farmers</p> <p>Concentration on training farmers at short courses</p> <p>Concentration on demonstrations.</p>
Means of Involving MATI staff and Students	<p>In data collection during school term</p> <p>In data collection during village assignment period</p> <p>Group conduct of demonstrations</p> <p>In individual conduct of demonstrations with farmers</p> <p>In sample collection</p> <p>In organizing farmer meetings</p> <p>By participation in village projects (mostly staff rather than students)</p> <p>By MATI staff teaching farmers</p> <p>Via field trips to visit projects and dialog with farmers.</p>
Approach to Training Farmers in Courses	<p>General, long term agricultural courses taught</p> <p>Short courses mostly geared to enterprises</p> <p>Short courses dealing with a limited aspect of a crop (problem-centered training)</p> <p>Short courses conducted at Wings</p> <p>Short courses conducted in villages</p> <p>Courses include planning follow-up at the course</p> <p>Farmers teaching farmers</p> <p>Field trips to government farms</p> <p>Field trips to contact farmers</p>

Areas

Approaches

Follow-up and resource
persons usually attend
courses with farmers