TANZANIA FARMER TRAINING AND PRODUCTION PROJECT

PROGRESS REPORT

OCTOBER 1980 - SEPTEMBER 1981

Submitted by

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Contract AID/afr-C-1480

West Virginia Univ./ North Carolina A&T State Univ.

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FARMER TRAINING AND PRODUCTION PROJECT

TANZANIA

1. INTRODUCTION

This Progress Report is primarily a report by the Contracting consortium (West Virginia University and North Carolina Agricultural and Technical State University) to the United States Agency for International Development (USAID). As such, it will reflect bias toward the external inputs and USAID's contractual expectations.

This report covers the first full year of field activity for the Farmer Training and Production Project (October 1980, September 1981). Of the four expatriate field staff, one had been at post for 17 months, one for 14 months, and two for 12½ months at the end of the report period. Part of this reporting period was consumed by Kiswahili training and part by preparation of living quarters, water supplies, etc. Some Tanzania Wing staff were already at post in August 1980, but most were assigned between then and April 1981.

The Tanzanian project coordinator and the expatriate coordinator/project leader were at post in Dar es Salaam for this entire 2-year period but had other duties, especially during the first year.

The Farmer Training and Production Project was officially launched with the signing of a contract between West Virginia University (representing the Consortium of WVU and NCATSU) and USAID in August 1979.

This second annual Project Progress Report, will record the early successes and problems of project field work. Most of the Farmer Training and Extension outreach was carried out in the second half of the report year. Even in this short time the opportunities and constraints have become obvious.

The four-year FT&P Project is financed at a level of US$2.5 million by USAID and Tsh. 1.3 million for capital and recurrent costs from the Tanzanian government. It is aimed at improving the social and economic well being of small farmers in Tanzanian villages. Achievement of this goal begins with developing an understanding of small farmer practices,

constraints and decision making processes. Building from this knowledge base, the project will test different extension methodologies and production packages, and will use the most effective of these to help small farmers and villages improve their production and income. The insights gained will help researchers, present and future extension workers, and trainers to serve farmers more effectively.

The project is being implemented through Ministry of Agriculture Training Institutes (MATIs) and is being integrated and coordinated with research and extension agencies. The capabilities of the four MATIs participating in this project have been expanded to include Farmer Training Wings, each of which has focused on two to five villages in its surrounding area. MATI students and staff have collected information on agricultural production practices in these villages. This information is being used to identify requirements for assisting the villages to improve their production. The Wings are then providing training and technical assistance, appropriate to the villages they sponsor, and are evaluating the effectiveness of the different approaches used.

In the later stages of the project, the Farmer Training Wing staffs are expected to pass on their accumulated knowledge by providing in-service training to present extension workers, especially those working within the areas surrounding participating MATIs. The program is expected to expand to other MATIs if it is successful. Insights gained via the project will be incorporated into recommendations for revisions in MATI and LTI curricula and schedules. Further, Position Papers will be written, aimed at influencing certain policies and methodologies in agricultural extension, agricultural research, and farm service institutions. Models for effective Farmer Training will be developed, along with teaching materials. These can be used in the Farmer Training Centers which MinAg hopes to reestablish throughout the country.

II. SUMMARY OF PROGRESS OCTOBER 1, 1980 - SEPTEMBER 30, 1981

During this report period, the Contract Rural Development Specialists continued their settling-in activities. The final three to arrive (of four

posted at Wing sites) completed Swahili language training in October 1980. Three R.D. specialists assisted in upgrading their living quarters. All became involved in completion of Farmer Training facilities (buildings).

The R.D. specialists found some on-going activities to build upon at each site. Tanzanian staff members were assigned to most Wings, but the Uyole Wing suffered without for many months; and the Nyegezi Wing lost most of its staff at mid-year. During the year, institutional and village linkages were formed, initial data collection instruments were developed, and village leaders and individual households were surveyed. These data were analyzed, and initial training and outreach programs were initiated. All Wings conducted, or helped to conduct, successful crop demonstrations.

At MATI Mtwara, the Wing conducted eleven short courses during the year, participated in seven village projects and conducted four village demonstrations.

The interest and participation of farmers has been outstanding. Many government and political party representatives at ward, district and regional levels have also been active in Wing activities. Research staff participation is improving.

The project is philosophically sound and timely. It is catching fire in its own small way. The project has the potential to make MATI instruction truly relevant for Tanzanian conditions by getting staff and students involved in village problem solving. It has the potential to convincingly demonstrate to policy makers what it takes to be successful in assisting small farmers to increase their production and well-being. It can provide a model for training farmers and will leave teaching packages to help the F.T. Centers the Ministry of Agriculture hopes to revive.

A major problem during this report period has been the lack of adequate Tanzanian staff at two sites. The shortage should largely be alleviated by December 1981 when six participants return from study abroad. Also, operational funds have been critically deficient during the present fiscal year. National economic conditions are making it ever more difficult to progress toward our objectives as they add to the load of mundane

support activity,e.g. increased searching for Ag inputs and vehicle spare parts.

III. BRIEF HISTORY

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

Historically, MinAg had involved itself in a variety of farmer training efforts. By 1975 substantial dislocation had occurred in information and delivery systems to Tanzanian farmers. Farmer Training Centers were absorbed into the Prime Minister's Office (PMO) and the principle of decentralization brought with it delegation of national responsibility for agricultural extension activities to the regions and districts under the PMO. Dissatisfaction with the status quo had become a major topic in the local press, and considerable official pressure was exerted for improvement in these 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 WVU, Mr. Edward Hirobayashi of AID/ Washington, and Mr. Charles Sweet of Development Alternatives, Inc., Washington, D.C., consulted with KILIMO, ST, and USAID/Tanzania officials. With the assistance of 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 the 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.

The Project Paper was approved by USAID/Washington in November 1979. A long period of official inaction followed this event; however, preparations slowly continued within the Ministry of Agriculture and at the sites. The four MATIs were given monies for construction of buildings and preliminary plans were laid. Agricultural extension tutors and others became somewhat vigorous at three future Wing sites in collecting preliminary farmer data and involving students in villages. Ac Mtwara some training events were held for farmers.

In 1978 and early 1979 the project was scrutinized in Washington for design appropriateness, and the long process of bidding and then awarding of a separate project contract took place. In the meantime, construction of a staff house was begun at Mlingano, and funds were subwarranted from MinAg to begin construction on a house for the expatriate staff member at Nyegezi. Plans for farmer classroom facilities at Mtwara, Mbeya and Mlingano were developed by the Ministry of Communications and Works. Five Landrovers and thirty Honda motorcycles were ordered, which arrived in Dar es Salaam well ahead of the signing of the project agreement.

A contract between AID/Washington and West Virginia University (representing the consortium of WVU and North Carolina A&T State University) was finally signed in August 1979. It provided $2.078 million to conduct a four-year pilot project. Dr. Lloyd 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 Leader (Coordinator). T. Kibwana was appointed by MinAg as National Project Coordinator to work with Pickett in Dar es Salaam.

The two coordinators made several site visits prior to the arrival of expatriate Rural Development Specialists. Village selection activity got underway at most sites, additional data were collected by MATI tutors, building construction inched along, and the major project commodities were ordered.

Six long-term participants were sent for B.Sc. training in the U.S.A. in January 1980.

The four consortium field staff members arrived in Tanzania in April, August and September 1980 and undertook 4 weeks of language training soon thereafter.

This brings us to October 1, 1980, the beginning of the period discussed in this Progress Report.

IV. OPERATIONAL PLAN

This section is extracted from the contract, AID/afr-C-1480. It describes what the project is intended to accomplish and how.

A. Purpose*

The stated purpose of the project is to increase food production and small farmer incomes by developing a mutual understanding between the farmers and extension agents in such a way as to lead to better comprehension and appreciation of farmer production problems and social/economic attitudes. It is anticipated that this will result in the preparation and adoption of improved agricultural practices and farming methods.

B. Objectives and Outputs

To date, little has been done in Tanzania to encourage small farmers in a direct way to change their traditional agricultural practices. Formal training attempts ahve touched only a few, often with irrelevant or unsuitable information. Yet, if agricultural development is to occur, the millions of small farmers must be provided with some additional technical knowledge and information. How to reach and effectively train small farmers who possess little or no education is one of the major problems in Tanzanian agriculture. It is the solution of this problem to which this sub-project addresses itself.

To accomplish the objectives of this sub-project, the USAID will provide technical services to the Ministry of Agriculture and selected MATIs (Mtwara, Mbeya, Nyegezi and Mlingano) to:

* Some changes in the wording of the Project Purpose as it now appears in the Project Paper are currently being discussed. See Secton V, E, 3 of this report.

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 (MATIs). 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 experiences 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.

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

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. Staff and students trained in both 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.

C. Manning Requirements

Number	Title	Assignment Duration
1	Rural Development Coordinator and Team Leader	Two-year contract tour; Four and a half year position duration.
4	Rural Development Specialists (1 for each of 4 MATIs)	Two-year contract tour; Four-year position duration.

Job descriptions, duties and qualifications for contract technicians follow:

program;

-Other duties as assigned.

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.

D. Sequence of Activities

1. Submission of formal staff nominations.

2. Notification by USAID of acceptance of staff nominations following interviews by USAID/T.

3. Staff orientation program on WVU campus.

4. Departure of contract team for Tanzania.

5. In-country orientation program conducted by Agricultural Manpower Chief

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 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 analysis systems for the participating MATIs and to collate 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 sub-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;

-Helping the various Tanzania institutions in devising and testing various training and extension methods and technological packages;

-Organizing a system to collect, analyze and present the data collected from the four MATIs;

-Assisting in the interpretation of the information and the preparation of implementation plans that enable the Ministry (and other agencies) to utilze the findings of the research and testing undertaken;

-Serving as Team Leader of the 5-person team supplied under this sub-

of Party and relevant project staff, staff of Manpower Development Division of Tanzanian Ministry of Agriculture, and USAID/T, in cooperation with relevant staffs of regional administrations, MATIs, and University of Dar es Salaam Faculty of Agriculture and Forestry.

6. Rural Development Specialists proceed to assigned posts, Rural Development Coordinator works with Agricultural Manpower Project Chief of Party. Specialists work closely with MATI staffs and students, village committees and farmers, regional and district authorities, in gathering and analyzing village data, developing communications systems and technical packages, suggesting preliminary curriculum innovations, suggesting planning recommendations, and establishing a firm monitoring and evaluation system. All work assisted and monitored by Rural Development Coordinator, who also begins to develop early suggestions for potentially system-wide applications for findings and strategies across Farmer Training-assisted MATIs, and more speculatively, and liaises with Chief of Party, Director of Manpower Development, and campus coordinator on necessary supports, generally develops proposed general policy suggestions from results obtained by Rural Development Specialists, and assists Specialists during frequent field trips to participating MATIs, regional and district headquarters, and villages.

7. On the basis of the preceding months' experiences, and with the assistance of relevant government officials, MATI staffs and students, Chief of Party, USAID/T, and others, Rural Development Coordinator and Rural Development Specialists meet and develop formal Farmer Training Communications and Technical Assistance System, to be standardized in the Farmer Training Wings of the four participating MATI's.

8. Farmer Training field staff subject the Farmer Training Communications and Technical Assistance System to a minimum one-year test, and constantly monitor and evaluate the relative merits and applications of component information and technical assistance sub-systems of the System. Team members provide for major refinements of the System, and possible extension of the System to MATIs not included within the sub-project, by the end of their tours of duty.

A U.S. participant training component to the Farmer Training Sub-Project will be implemented. The objective of the participant training component will be to provide a small cadre of specifically trained Tanzanian rural development specialists, who will continue and expand on the work of the Farmer Training team, after the team has left Tanzania at the completion of the contract.

In all of the activities in the operational plan, the Farmer Training field team will be fully supported by the Consortium administrative and technical backstopping services. These services are centered in and coordinated by the Division of International Agriculture and Forestry at West Virginia University. This office will also coordinate and manage the participant training component.

V. REVIEW OF PROJECT ACTIVITIES OCTOBER 1, 1980 - SEPTEMBER 30, 1981

A. Project Staffing

At Ministry of Agriculture Headquarters the following officers have supervisory responsibilities for the project:

C.K. Tupa	Head, Division of Manpower Development and Administration, Ministry of Agriculture
R.N. Rwana	Chief Training Officer, Ministry of Agriculture
L.C. Pickett	Farmer Training and Production Project Coordinator/ Team Leader for the contracting Consortium (WVU Adjunct Professor)

Richard Shayo — Farmer Training and Production Project Coordinator, Ministry of Agriculture

The Contractor's key representative in the U.S.A. is Dr. Robert Maxwell who holds the position of Associate Dean of the College of Agriculture, West Virginia University. In providing both direction and daily support for the project, Dr. Maxwell represents both partners in the contractual Consortium, WVU and NCATSU (North Carolina Agricultural and Technical State University). At NCATSU, Dr. William Reed, Associate Dean of Agriculture, provides back-up support.

Mr. Ron Harvey has served as Project Officer for USAID during the entire period. Hamisi Kitombi served the Team Leader in Dar es Salaam as an administrative assistant.

Project Field Staff are as follows as of September 30, 1981:

MATI Mlingano

-David Scheinman

NCATSU, Adjunct Assistant Professor

Wing Leader

MSc Degree in Agricultural Education

Arrived in Tanzania September 12, 1980.

-George Sechambo

Acting Wing co-leader

Diplomatic holder in Farm Management

Assigned to the project in November 1980 on a full time basis. He has, however, devoted considerable time to the curriculum development section at Headquarters in training tutors. This gives the project a useful linkage.

B. Matilibu

Diploma holder in Adult Education

Assigned to the project in November 1980, on a nearly full time basis.

E.J. Samki

Diploma holder in Agro-Home Economics

Assigned to the project in June 1981

She is a full-time member of the Wing.

A.S. Mosha is the MATI Principal.

MATI Mtwara

David Acker

WVU Adjunct Assistant Professor

Wing Leader

MSc Degree in International Ag Development & M. Ed in Ag Education

Arrived in Tanzania August 5, 1980.

A. Mtukwe

Acting Wing co-leader

Diploma holder in Farm Management

Assigned to the project before it started on a full time basis.

P. Mwakisyombe

Diploma holder in Nutrition

Assigned to the project on a 50% basis.

R.A.B. Mloko

Certificate holder in Agro-Vet

Assigned to the project in July 1981 on a full time basis.

Scheduled for National Service in January 1982.

A. Lazer

Certificate holder in Agro-Vet

Assigned to the project in July 1981 but left for Nat'l Service immediately.

B.R. Rwegasila

Extension Department Head

Assists Wing Staff.

C.J. Liwa is the MATI Principal.

MATI Nyegezi

Charles Smith

WVU Adjunct Associate Professor

Wing Leader

MSc Degree in Agricultural Education

Arrived in Tanzania April 11, 1980.

J. Sanga

Diploma holder

Assigned to the project in September 1981 on a part time basis.

B.H. Matanga

Diploma holder in Agricultural Education

Assigned to the project from the beginning on about a 20% basis.

S. Mutakyamilwa

Extension Department Head

BSc in Agricultural Education

Supports Wing activities heavily since his transfer to Nyegezi in September 1981. He could be considered a Wing Staff member as he devotes most of his time to it.

P.C. Makwaia and I.H. Gwau served as Wing staff members until April and February 1981 respectively. P.S. Makwaia transferred to follow her husband. Gwau resigned from government service.

H. Nyamenda

Mwana Shamba

Assigned to Wing by the Regional Agricultural Development Officer

P. Kimiti is MATI Principal.

Uyole Agricultural Center (Mbeya)

Gene Peuse

NCATSU, Adjunct Assistant Professor

Wing Leader

Ph.D. in International Agricultural Education

Arrived in Tanzania September 12, 1980.

E.N. Nyamasagi

Acting Wing co-leader

Diploma holder

Assigned to the project in March 1981 on a full time basis.

F.R. Lyimo

Assisted the Wing over a period of several months from her position as head of the Extension Department at MATI.

J.B. Ndunguru is Principal.

B. Project Facilities

A total of U.S. $111,000 was obligated in the Project Agreement for the construction and renovation of facilities required to initiate Farmer Training and Production Projects at the 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 work. The following section briefly describes progress of facility construction during the report period.

Farmer Training and Production Wing Facilities

Status at Beginning and End of Project Year

MATI	FACILITY	STATUS October 1980	STATUS October 1981
Nyegezi*	Rural Dev. Spec. house- new.	Occupied in July. Needs supplementary water system.	Completed.
	Farmer classroom and office block pre-existing.	Room divider framework up. Hardboard unavailable at government stores.	Completed.
	Farmer dormitory pre-existing.	Renovation not started. Funds are released. Toilet facilities should be considered.	Usable, but still needing some lights and some repair. Separate toilet facilities should be renovated for farmer use.
Mtwara	Rural Dev. Spec. house- pre-existing.	Occupied in August. Water system yet to be constructed.	Completed.
	Farmer classroom and office block-new.	Walls in progress	In use. Still needs 7 sheets of ceiling board, some glass and tube lights. Usable.
	Farmer dormitory pre-existing,	Usable.	Usable.
Mlingano	Rural Dev. Spec. house-new.	To be occupied Oct. 1980. A few minor problems. Kitchen cabinet is being added.	Completed.
	Farmer classroom office block-new.	Usable but plumbing and electrical wiring incomplete.	In use. Bathroom fixtures not in use.
	Farmer dormitory.	Plumbing and electrical wiring incomplete.	Completed. Lounge furniture is needed.

* All Project facilities at this site suffer from infestations of bats in the attics. An economical control measure needs to be found.

MATI	FACILITY	STATUS October 1980	STATUS October 1981
Uyole	Rural Deve. Spec. house - pre-existing.	Usable. Minor adjustments required. To be occupied October 1980.	Completed.
	Farmer classroom new.	Usable.	Usable. Storeroom window bars incomplete.
	Farmer dormitories-pre-existing.	Usable.	Usable.

The completion of Farmer Training Project facilities, farmer hostels, staff offices and R.D. Specialist homes was a much larger task than anticipated. Materials either were not available or available at a price beyond what a government institution is allowed to pay. A great deal of energy went into this effort in spite of the facilities' being largely complete at year's start.

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 handled by the MATIs' non-professional staff because they lacked the transport or clout needed. When problems are encountered in such mundane chores it obviously drains the time and energy which staff should be directing toward project objectives. Such has been the fallout from difficult economic conditions.

Mtwara's chronic and critical household water shortage continued throughout the report year although the roof collectors, installed early in the year, helped during wet seasons. The other MATIs suffered from much less critical or occasional water shortages.

Electrical power supply was very erratic at Uyole and gave some problems at Mtwara. The Consortium's Rural Development specialists endured these difficulties with little complaint even when frozen food was ruined.

C. Commodities

The Farmer Training and Production Project is budgeted in the Project Paper for about $356,000 (Tsh. 2.9 million) for commodities via USAID funds. About half of this amount was expected to be spent during the first year. Over the four-year period of the project, the MATIs are budgeted as follows in the PP: Mtwara, $77,500; Nyegezi, $65,000; Mlingano, $80,000; Uyole, $77,100; and other MATIs, $54,700.

Five Landrovers and thirty Honda 90 motorcycles (trail bikes) were ordered in 1977-78 when an earlier 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 Study 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 km. between March and October 1979. One of these later went to MATI Ukiriguru in exchange for a new vehicle which went to the FT&P Wing at Nyegezi.

In July of 1981, USAID Project Officer, Ron Harvey, arranged to transfer a sixth Landrover, a station wagon, TZ 5?904 to Farmer Training. This vehicle, showing about 45,000 kms. of hard use, was transferred to the Mlingano Wing.

Twenty-seven of the original 30 motorcycles were taken by another USAID project in late 1979 by agreement between USAID and MinAg. Replacements arrived in August 1980. Their distribution to Wings began shortly thereafter.

The present disposition of project Landrovers and motorcycles is as follows:

Vehicle

TZ 45292 Landrover Pickup, 1978 Model, MATI Uyole, Condition, fair to good.
TZ 45293 Landrover Pickup, 1978 Model, MATI Mlingano, Condition, fair to good.
TZ 56904 Landrover St. Wagon, 1980 Model, MATI Mlingano, Condition, fair.
TZ 45294 Landrover Pickup, 1978 Model, MATI Mtwara, Condition, fair to good.
TZ 46245 Landrover St. Wagon, 1978 Model, DSM (Team Leader), Condition good.
TZ 51858 Landrover St. Wagon, 1979 Model, MATI Nyegezi, Condition, good.

Motorcycles (All Honda C90s)

6 at MATI Nyegezi
6 at MATI Mlingano
4 at MATI Mtwara
6 at MATI Uyole
7 in storage at a MinAg warehouse in Dar es Salaam
1 in use by project Administrative Assistance, Dar es Salaam (3 years old)

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The issued motorcycles are in widely varied mechanical condition as of October 1981 after one year's use. While some have been used little, others have had up to 12,000 km. of use. Some have been well cared for and some less so. Most are sub-issued to specific individuals.

Principals and Wing leaders must constantly supervise the use of these vehicles or they will not provide reliable transport for even the life of the project, considering the rough dirt roads over which they travel. Where abuse is occurring, the staff member should be summoned to sit with the administrators to work out agreements as to how the abuse will be stopped. Continuous training should accompany supervision. The major abuses seem to be use for non-official business, too little thought about maintenance, and rough handling.

Due to ever increasing shortages of spare parts in-country, plus exhorbitant costs, the Team Leader and Project officer initiated out-of-county

orders for both Landrover and Honda 90 spare parts in May of 1981. These had to have origin waivers and had to be priced and approved by the local Tanzanian distributors, all of which has taken a very long time. Shipments are expected to arrive by April 1982.

More than half of the initial large commodity order arrived in Tanzania between April and July of 1981. Each participating MATI received about one-fourth of these items which included: paper, stencils, file cabinets, generators, slide projectors, mimeograph machines, wheelbarrows, calculators, photo paper and film.

Not arriving from this same order (first committed to paper in January 1980) were: typewriters, photo copy machines, movie projectors, tape recorders, 35mm cameras and print-out calculators. The Project Officer is presently investigating the whereabouts of non-received items while he is in the U.S.A.

Small items of office equipment and miscellaneous household improvement items were ordered directly through the contractor's home office.

At present the possibility of buying one or more rehabilitated used buses from Japan for transport of students and farmers to and from villages is being investigated. These buses would be inexpensive but rather slow to arrive.

If we donors are serious about leaving a program behind that has a good chance of surviving when we leave (institutionalizing the project), we must order replacement Landrovers and spare parts; and some, but not all, replacement motorcycles and spare parts. At project conclusion we must also appoint a person (perhaps in USAID) who can assist MATIs in procurement of parts for all U.S. equipment not normally imported into the country.

Although Tanzania is expected to meet all recurrent costs incurred on equipment, it has become impossible for it to do so. Neither parts availability

nor budget has been adequate. Projects such as this cannot succeed without donor countries picking up more financial obligation than was envisioned when the Project Agreements were made.

D. Participant Training

The six long-term participants funded by the project left for undergraduate degree training in the U.S. in January 1980. They are expected to complete Agricultural Education/Extension degrees in December 1981. All have had excellent academic records. They are:

NAME	PREVIOUS POST	U.S. UNIVERSITY	ANTICIPATED POSTING
S. Lugeye	Tutor at MATI Mpwapwa	NCATSU	Ukiriguru
J. Mashiba	Tutor at MATI Mlingano	NCATSU	Nyegezi
G. Mariki	Tutor at MATI Ilonga	WVU	Mtwara
R. Mlozi	Tutor at MATI Ukiriguru	WVU	Mlingano
O. Kussaga	Tutor at MATI Mtwara	WVU	Uyole
D. Sendeu	Tutor at MATI Mlingano	WVU	Headquarters, DSM

Present plans call for conducting a 3-day orientation session and providing visitations to other Wings soon after the participants' return to Tanzania.

The short-term training proposed in the Project Paper via a short tour of Africa has not yet occurred. Letters of inquiry have yielded disappointing results, and we have now concluded that we must either visit Asia or settle for a quick, and probably not very useful, visit to Kenya. We must make the trip in early 1982 or strike it from our work plan.

E. Program Progress, October 1, 1980 - September 30, 1981

I. Introduction

This section reviews program progress against the project purpose, objectives and outputs. Full Annual Reports of Wings can be seen in Appendix A.

The reader is again reminded that at the end of this reporting period, the project had been on-going for two years since the signing of the contract between USAID and the contracting consortium; however, most of the consortium field staff had been on site for about one year (one R.D. specialist had been in-country 17 months). Early in the report year, Wing staff were busy settling in, completing physical facilities, developing and administering data collection instruments and planning programs; late in the report year they were well immersed in Farmer Training and village follow-up. Table 1 shows the project implementation plan for events important to USAID and the contractor.

Table 1: Project Implementation (updated September 1981)

Action	Responsible Organization	Date Completed (or to be compl.) Month/Year
1. PRP submitted	USAID/Tanzania	--
2. PRP approved	AID/W	--
3. PP submitted	USAID/T	11/76
4. PP approved	AID/W	11/77
5. Project Agreement and PIO/T prepared	USAID/T,TanGov	12/77
6. Contract Negotiation	AID/W, Contractor	9/79
7. Commodities ordered	Contractor	4/80
8. Housing arrangements finished	Contractor, TanGov	2/81
9. MATI contract staff arrive-	Contractor	4-9/80
10. Initial commodities arrive-	Contractor Support Unit	5/81
11. Data collection begins	Contractor, Tan Gov	6/80
12. Participant training in Africa	Contractor, TanGov	2/82

13. Remaining commodities arrive	Contractor Support Unit	11/81
14. Farmer training begins	Contractor, TanGov	11/80
15. First interim evaluation	Contractor, TanGov, AID	2/81
16. Participant training in U.S.	Contractor	1/80-12/81
17. Second interim evaluation	Contractor, TanGov, AID	2/82
18. Third interim evaluation	Contractor, TanGov, AID	1/83
19. Project Phaseout	Contractor, TanGov, USAID/T	9/83
20. Final evaluation (post proj.)	Contractor, TanGov, AID	10/83

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2. Why the FT&P Project is (was) Needed

This writer sees the project as one means to interrupt several vicious cycles or self-defeating ways of doing things.

(a) One such vicious cycle is that of theory-biased MATI tutors producing theory biased graduates, some of whom become tutors who repeat the process. The boarding school students are taught by tutors who themselves have been isolated in boarding schools most of their lives and who were taught from foreign books. Most MATI tutors have been quite out of touch with village agriculture.* They have little understanding of the constraints and opportunities of small farmers. They are not well prepared to teach future extension workers how to solve problems in Tanzanian villages in these difficult times. One does not learn how to manage a village dairy in central Tanzania or how to build a grain store made of sticks or stones from a U.S. or British textbook. Further, only the tutors of ag extension attempt to mold students into extension professionals (problem solvers for Tanzanian villages). This is not enough. What is needed to break the cycle is a massive dose of staff and student participation in solving village agricultural problems with villagers, following a process that is known to be successful most of the time. The delight of the Farmer Training and Pro-

* See the Tanzania Agricultural Manpower Project Report, Vol. II, Appendix A.

duction Project is that it offers this opportunity. Tutors are volunteering, sometimes eagerly, and students also are generally enthusiastic about their village experiences. The Wings are a conduit and a legitimizer between village and MATI (LTI). Under the best of circumstances, both will be benefitted tremendously. Hopefully all 12 MATIs and LTIs will start a Farmer Training Wing as a result of this pilot project. The FT&P Project can impact heavily on MATI curriculum and MATI teaching designed to prepare professional change agents.

(b) 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. The FT&P Project will strive diligently to develop these confidences and skills.

(c) Recommendations based on station research have often been perceived by farmers as being unrealistic agriculturally, economically or culturally. Sometimes farmers' needs are forgotten; for example, the need to insure against starvation. Sometimes station results don't repeat themselves under village conditions, and sometimes a good recommendation is made for too broad an area (is not area-specific).

The FT&P Project often involves researchers in Program Teams (Task Forces) which are in regular contact with farmers. Where needed, we will support village verification trials. To varied degrees, researchers are also involved on overall FT&P Project advisory committees, in data collection and analysis and program development, in farmer training, and in formal planning sessions with farmers. One of our main objectives is to create linkages between farmers and their service and

support institutions as well as among the institutions. A two-way information flow is central to our process.

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 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.

(d) The system and circumstances in which extension workers function sets several nearly insurmountable difficulties for them. The FT&P Project should be able to show solutions. For extension workers to have a chance for success they must work intensively with a group of people, developing confidences, 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 process is not possible and failure is almost guaranteed. Equity of service among villages could be provided by assigning an extension worker to one village for three years, and then to another for three years.The F.T. experience should prove the need for concentration of effort.

Extension workers now tend to function as information givers because of their large territory, their inclination and 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 practice.

The FT&P Project should provide sufficient information and legitimacy for Wing staff to effectively train extension workers. In the final year of the project, we hope to conduct short courses for in-service Bwana Shambas at the Wings and for DADOs and RADOs at a central site, using our process-for-successful-extension-work as the core of learning.

(e) The Farmer Training Centers of by-gone days in Tanzania were apparently only marginally successful. At least they were taken over for other functions. 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 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 will be available from the project for use by all persons involved with teaching farmers and by all MATI and LTI tutors.

(f) Service institutions will get more pressure from farmers who have been involved in self-help projects such as ours. They will demand better service. This may upgrade the service institutions eventually. In addition, FT&P project staff will feed information upward regarding the production constraints presently associated with service institutions and will try to effect changes.

3. Project Purposes and Progress Toward Them

The purposes and objectives of the Farmer Training and Production Project have already been introduced in the section of this report entitled, "Operational Plan". That Project Purpose as it now appears in Project documents is as follows:

> "To increase food production and small farmer incomes by developing a mutual understanding between the farmers and extension agents in such a way as to lead to better comprehension and appreciation of farmers' production problems and social/economic attitudes. It is anticipated that this will result in the preparation and adoption of improved agricultural practices and farming methods."

During the year, a good deal of discussion took place regarding what the purpose and uses of the project are. At the time of this writing, discussions are underway with USAID regarding possible changes in the wording of the Project Purpose, Objectives and Outputs. If this is fruitful, TanGov officials will also be asked to react.

The purposes as proposed to USAID and shown here begin with the statement of fundamental purpose formulated by participants at the April 6-7, 1981, FT&P Project Coordinative meeting held at Tengeru. The revised purposes statement, though more comprehensive, does not add to nor delete from the intent of the Project Paper.

The draft statement recommended to USAID/Tanzania states:

> (1) To design, demonstrate, document and disseminate a process for successful assistance to Tanzanian small farmers. The process will include developing a two-way flow of communications between farmers and government officials such as extension workers, researchers and trainers. The resultant improvement in comprehension and appreciation of farmers' production constraints/opportunities, decision-making processes and social/economic attitudes should in turn lead to the formulation and adoption of improved agricultural practices and farming methods.

(2) To design and demonstrate a model approach and teaching materials for effective farmer training. These will be available for use by other Farmer Training Wings at MATIs and LTIs and by regional or district Farmer Training Centers (as they return to MinAg control).

(3) To design, demonstrate, document and disseminate a process for limited integration of MATIs and LTIs with surrounding villages so that future extension workers will be more effective in assisting farmers and so that the assisted villages will show improved agricultural production and increased farmer well being."

The present, official, (first) statement of purpose is incomplete. Development of a mutual understanding between farmers and extension agents is very important but is by no means the only way to improve agricultural practices. The second draft statement attempts to identify all major outcomes sought.

Progress toward developing mutual understanding between farmers and extension agents has generally been good, if one considers all persons working with farmers under Wing auspices as extension agents. These individuals - Wing staff, MATI tutors, District extension officers, researchers and others, have made a good start by participating in such exercises as initial data collection, problem identification discussions in the villages, advisory committee meetings, classroom discussions with farmers, and village extension work. This good start must be followed up with in-depth information collection in each of the problem areas which the Wings have selected for extension programs.

If one considers extension agents to be only those personnel hired as village Bwana Shamba or District/Regional extension officers, then our project impact is limited at this time. We will train such people and try to influence decision makers only after we have had considerable experience. We have made a good beginning in getting students involved with farmers so that future extension workers will have a better chance

of appreciating farmers' problems and be able to communicate on a two-way basis.

If we evaluate Project Progress against the "Proposed Project Purposes," again, a solid beginning has been made, collectively, in designing and demonstrating the three processes. The four Wings vary in the processes they emphasize. All four Wings are emphasizing the design and demonstration of a process for successful assistance to Tanzanian small farmers. This process will be taught to in-service extension workers and recommended to policy makers, both local and national. Because each Wing has very unique circumstances, each has a unique program, but importantly is employing common, time-tested principles and approaches for effective extension work. (See a list of these in Appendix D). Program uniqueness and situation differences at various Wings are displayed in Table 2.

Out of the diversity of approach and methodology should come some highly successful and some unsuccessful activities from which we will search for common elements. Liitle by little we will move toward a common broad process. We must measure conditions before and after intervention, observe keenly, document the observations, and use simple instruments when they seem useful so we can analyze what happened and why, with some assurance. The approaches and methods used during these early months of project operation tend to be exploratory or experimental while those that will be used during the second half of the project will be devoted to refining the processes, demonstrating their effectiveness on villages, and finally, to disseminating them or informing others.

Proposed purpose number two refers to the design and demonstration of a model approach, and to the development of teaching materials for effective farmer training. A good beginning has been made at three Wings. MATI Uyole has lagged behind due to staff shortages and due to the Wing staff's emphasis on involving students in village work. Wing staff will

Table 2: Differences Among Wings and Their Programs

WING	Agricultural Potential	Major Crops	MATI Student Courses (Specialization)	Wings Use of Students	Planning & Advisory Committees*	Crop Demonstrations Conducted	Crop Training Conducted	Major Village Projects
Mlingano (in East Central Tanzania)	Limited	Tree Crops Sorghum Cassava Maize	Diploma in Agro-Mechanics Diploma in Farm Management	Rather low (data col-) lecting and projects)	-Village planning meetings -Multi-agency meetings -Task forces	-Maize and sorghum -Planting & maintenance of coconuts	-Orientation -Village planning meetings -Coconut production -7-week course of 7 topics	-Coconuts planted -Crop demonstration plots
Mtwara (in South-East)	Very low	Cashew Coconut Oil seed Cassava Citrus	Certificate in General Agriculture	Medium (data collection projects)	-Overall Committee -Task forces -Village planning sessions	-Pigeon Pea production -Cowpea production -Sorghum culture	-Orientation -Goats and rabbit prod. -Animal Health -Human Nutri. -Village planning -Six crop courses	-Crop demonstration plots -Initiation of goat herds -Construction of cattle facility -Animal health assistance -Human Nutri. assistance
Nyegezi (in North-West)	Fair to Marginal	Cotton Cassava Sorghum	Certificate in Land Use Diploma in Irrigation Diploma in Agro-Mechanics	Rather low (data collection projects) Land use mapping	-Overall committee -Village committees	-Varieties of cassava -Fertilizer on sorghum -Fertilizer on millet	-Record keeping -Rope pump -Land use -Livestock improvement	-Young Farmer Club -Firewood Plantation -Rope pump irrigation -Crop demon. -Livestock Impr.
Uyole (in South-West)	Good with fertilizer	Almost any temperate	Certificate in General Agriculture Diploma in Crops Diploma in Animal Sci. Diploma in Home Economics	High** (data collection, routine farmer assistance & projects)	-Small group meetings -Multi-Agency meeting	Optimum maize culture	-Village problem identification only	Procurement of ox carts, plows, seed, fertilizer, and pest & disease control chemicals

* Planning is also an important part of each training session.

** The high involvement of students will occur primarily after Sept. 1981, as students begin to work with farmers on a weekly basis.

collaborate with the Faculty of Agriculture, Forestry and Veterinary Science in this venture. In some teaching areas, such as in reducing grain storage losses, we are not satisfied that the technology we are now advocating is the best available. Further searching for this expertise is required, in-country and out.

Proposed purpose number three is to integrate MATIs and LTIs with surrounding villages. This goal is being vigorously pursued at the Mtwara and Uyole Wings, but less so at Mlingano and Nyegezi. Unfortunately, general certificate students no longer attend at MATI Nyegezi as they did at the time the Project Paper was written. It is of interest to note, however, on page 35 of the Project Paper, that Nyegezi was selected as a site due to "The need for testing the efficacy of small farmer irrigation techniques" and Mlingano for the "need for developing farm management training methods applicable at the village level." At Nyegezi, an irrigation program is started, but it has utilized few students to date. It was assumed in 1976 that many of the students at Mlingano would be employed as village farm managers, and thus Wings would provide linkage between students and farmers. Students would supply the necessary labor to collect data and would develop and test management schemes for village and small farmer operations. Staff at Mlingano currently seem to feel the farm management students are being training to manage state farms. Mlingano students have surveyed villages and some farm management training is scheduled for the next project year. Further opportunities need to be investigated. If they are not there, or if other activities hold higher priority, MATIs Mlingano and Nyegezi can still contribute effectively to the FT&P Project by concentrating on extension and farmer

training. At the same time, they must do what is possible and sensible to integrate MATIs and villages. MATIs have a pre-existing mandate from the Ministry of Agriculture to serve surrounding villages. It will be done better via a Wing than via the former village-block program because of the Wing's critical mass and specialization.

4. Project Objectives and Progress Toward Them

The Project Objectives which follow are taken from the Contract AID/afr-C-1480.

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

Comments and Progress: Our approach to information gathering has been to build it into every activity and to concentrate on that which is needed to conduct the programs we are involved in. We hope to develop numerous in-depth sets of interview questions, to be administered a few at a time, informally, dealing with the constraints we are trying to reduce. Also, we will sample soils, yields, diseases, etc., where useful. These, plus daily field notes and planning meeting and notes from sessions with farmers will provide the basis for the meaningful insights we will gain.

We have not much trusted quick data collection methods where large survey instruments are administered early in one's relationship with villagers. Yet we made and used such quick surveys in order to select some preliminary projects and training topics and in order to obtain baseline statistics needed to evaluate progress.

In this report period, Wing and Headquarters staff, with advisory help, designed and administered the following:

-Village Leaders' Interview Form - All Wings, on initial participating villages and some control villages.

-Household Interview Form - All Wings; however, Uyole is administering it piecemeal and is not yet through. Mtwara is re-administering.

-Program or Problem-specific interview materials. A few in-depth sets of questions were begun.

-Health and Nutrition Survey Form - Two Wings

-MATI Tutor Questionnaire - Three Wings

-Student Questionnaire (Two versions) - Two Wings

-Village Extension Workers' Questionnaire - Tested at one Wing

-Researchers' Attitudes and Practices Interview Form - Now ready

-Farmers' Post-Training Evaluation Forms - Two Wings

-Farmers' Visit Record - Being refined

-Farm Records for Student Visitation to Farmers - Being Developed

Recommendation 5 of the report from the first Annual Project Evaluation requests that greater attention be paid to the collection of data activity. We now have uniform Village Leader information at all sites. There is some irregularity among Wings in regard to Household Data collected but we feel this is not serious. The most trustworthy and definitive information will come from the multitude of enterprise or program-specific surveys that we are now making.

Data collection procedures will be institutionalized by building data collection strongly into our overall process for effective assistance to small farmers and into our process for integrating MATIs and villages.

(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.

Comments and Progress: Wing staff analyzed their original data from interview forms and discussions with farmers and specialists, got advice from advisory committees, and then selected training and outreach programs for the upcoming year. Table 3 shows the Farmer Training short courses which were conducted during this report period, mostly of 1-2 days in length, but often to more than one group or section of farmers. (See full details in the Annual Reports of each Wing in Annex A).

Table 3: Short Courses or Events Offered at FT&P Project Wing October 1, 1980 - September 30, 1981.

TOPIC	MATI			
	Mlingano*	Mtwara	Nyegezi	Uyola
Orientation	1	1	1	
Grain Storage	1	1		
Coconut Production	1	1		
Banana and Coconut Production	1			
Record Keeping			1	
Use of Rope Pump			1	
Pigeon Pea/Sorghum Production		1		
Termite Control in Pigeon Peas		1		
Cashew Production		1		
Sorghum Harvesting/Processing		1		
Pigeon Pea Harvest/Processing		1		
Goat and Rabbit Production		1		
Human Nutrition	1	1		
Animal Health		1		
Home Gardening	1			
Maize and Sorghum Production	1			
Legume Production	1			
Village Problem, Identification				1
Village Planning	1	1		1
Land Use Planning			1	

* Most Mlingano topics shown here were taught to a single group of 30 farmers during a 7-week course.

Short course participants were selected by villagers or village leaders. They have consisted of both men and women in most cases. A dialogical or two-way communication approach was used; however, I believe it did not function to the degree that is desired. All persons employed to teach farmers received help in planning by Wing staff and were requested to use a discussion approach. As much as possible, Wing staff participated in these events. "Course tutors " (the Wing staff members appointed to be in charge of courses) should attend all training sessions to record all worthy comments, to insure that the dialogical approach is employed, to insure that the right resource and task force people are on hand, to insure that adequate follow-up planning takes place and to insure that a course evaluation is made.

In March 1981, Mr. Bruce Lansdale, Director of the American Farm School at Thessaloniki, Greece, was brought to Tanzania at project expense to advise regarding the best approaches to take in training and following-up farmers. He spent 15 days visiting Wings and participating in a Coordinative Workshop for Wing staffs. His advice and inspiration served well to further orient staff at a time when it was needed. A high quality report is available.

(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.

Comments and Progress: At three of four Wing sites, there are few technological packages which are feasible at village level given the marginal rainfall conditions and input-cost to output-return ratios prevalent. Extension workers in many areas of Tanzania have had very little to extend.

Early observation indicates that most really helpful technologies are

production following the recommended package of practices. Research staff are beginning to work closely with Wing, MATI and other staff in village projects.

Technological packages can better be tested at Uyole (Mbeya) than elsewhere because there are more crops with higher yields, and more certainty of rainfall. The maize demonstration plots of this report year showed good yields from the use of the locally recommended package. A major project intended to increase the use of ox power was launched. Several projects are ready to start. See the UAC Plan of Work for October 1981- September 1982 in Appendix B for next year's plans.

We have made a beginning in what will be a most difficult objective to fulfill in the two years left. We will, no doubt, get preliminary feedback from our villages at four very different sites. Our experience may, however, help Farming Systems planners to do a better job and waste less time in project start up.

As far as testing the efficacy of extension and training approaches, a variety are being used or tested.

Mlingano will utilize semi-trained, semi-paid, village-selected extension workers as key contact people in the villages. Uyole is using students in a structured situation somewhat like train-and-visit extension. Mtwara and Nyegezi are employing more of a traditional approach to extension work but with varied nuances. We will have a good deal of feedback on methods and approaches next year.

At every site, farmers are responding wondrously well to Wing-coordinated programs. They come gladly to training sessions and participate well. They were initially somewhat reluctant to participate on collective farm demonstrations at Mtwara, but later have been more willing. Recently every farmer at Mlingano who said he would purchase and plant coconut seedlings did so in spite of difficult economic times. Where adequate

already being widely used, if inputs are available. No one needs to tell farmers in Mbeya to use nitrogen fertilizer on maize. Scarcity of inputs probably limits production more than does inadequate farmer knowledge.

In this report period, we have not assisted with verification trials, only with some quickly selected demonstrations. Perhaps the coconut seedlings planted near Mlingano would qualify as a verification trial.

Farmers near Mlingano have expressed some disdain toward the recommended Lulu and Serena varieties of sorghum because of their incidence of high bird damage and their undesirable qualities as human food. Farmers at Mlingano are interested in improving and expanding their coconut production due to a big jump in market price for coconuts.

Small scale irrigation pumps are of great interest at Nyegezi. Farmer acceptance of the new (recommended) varieties of cassava at Nyegezi will depend upon their yields after the 18-month growing period is completed. The varieties are apparently not well tested and should probably go into numerous villages on verification trials.

Nyegezi cattle keepers have decided to upgrade their stock by buying or borrowing bulls having some exotic or improved-breed blood. The expatriate Wing Leader there is dubious of such at this time, but the farmers are insisting on doing it. The Wing will try to include plans for improved management to accompany the new blood lines, but the options for the latter are extremely limited in this overgrazed area.

Recent rises in cashew prices make the recommended cashew improvement package more acceptable to farmers in the Mtwara area. However, most existing trees are past their productive life period. Still, this provides the Wing with another opportunity to assist farmers. Villagers there are accepting pigeon peas and cow peas . The Wing demonstrations showed good

technologies, inputs, and prices are available, it is obvious that extension work can be highly successful in this country. However, a proper approach must be employed in dealing with farmers. At the heart of our "process", is strict adherence to well-known principles that tend to be trampled on by some policies and approaches widely used. (See these in Appendix D). As train-and-visit extension did, we will offer a structure and a process with numerous accompanying tools for evaluating, planning, teaching, etc. This should be a major outcome of the project.

(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.

Comments and Progress: It is very early in our project to evaluate adoption rates; however, early feedback is very positive. Villagers at Mlingano did buy and plant the coconut trees they said they would. Farmers at Mtwara have planned to expand their acreages of new crops this year; at Nyegezi a firewood plot is being planted and fields are being prepared for irrigation. At Uyole, farmers are eagerly employing oxen for plowing.

All farmer training sessions are being evaluated post-course with farmers in order to improve them. Teaching materials will be upgraded each time they are used (taught). Staff at the Faculty of Agriculture, Forestry and Veterinary Science will assist us in improving our teaching packages. We are collecting the technological information for the teaching packages as rapidly as possible.

The emotional response from farmers to short courses and demonstra-

tions 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 the 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.

Comments and Progress: Wings will begin training present extension staff about September 1982, although it is frightening to think of adding yet another load to Wing staffs that are already being asked to change the world. This is an important task, and we will do our best. For village, ward, and district workers, we will design a teaching package on how to conduct extension work effectively. We will attempt to find and prepare district extension officers as topic tutors to assist us. We hope to hold workshops for RADOs and DADOs separately, in order to share our experiences and results with them. We will cooperate in all these matters with staff of the Faculty of Agriculture, Forestry and Veterinary Medicine.

We have reason to expect tutors at non-wing MATIs to be eager to receive and use our findings in their teaching. Further, Wings are expected to expand to other MATIs and LTIs if our mid-project evaluators advise it and MinAg can fund it. The Ministry of Livestock Development has

already planned to start a FT Wing at one Livestock Training Institute (LTI). Feedback already indicates that when MATI tutors get involved in village problem solving, their teaching becomes more relevant. We prefer that Wing staff teach students, at least occasionally, to feed back experiences and observations, especially methodological ones. Most Wing staff have done so and recommend it.

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

Comments and Procedures: Our intention is to follow up all short courses with village assistance. Such assistance is planned with farmers at the conclusion of each short course. MATI staff, and to a lesser extent, students have been involved considerably at Mtwara. The Uyole Wing staff have started to involve selected MATI staff and students routinely as village outreach projects get underway. This involvement is expected to be intensive during the next report period. Wing staff at Nyegezi have used several MATI tutors in teaching farmers and in project work. Students assisted in making village maps. MATI staff at Mlingano have not been involved much to date, but village outreach is just getting underway seriously. Better ways to involve the Farm Management course students need to be worked out.

The first Annual Evaluation Report for the project recommended that greater emphasis be placed on getting MATI students and village extension personnel involved in project activities. Student involvement has improved and will be very strong at Uyole and Mtwara. Student involvement will always be limited at MATIs Mlingano and Nyegezi due to their lack of extension-preparation courses. If we do the best that is possible under the circumstances, the project will not be seriously affected. These MATIs can stress

designing an ag extension process and a model for training farmers. Tutors and Wing staff who are involved in project work in villages are in a position to provide vicarious as well as real experiences to students. They should feed back valuable observations and insights to the students they teach.

The village extension workers available to us in our few participating villages are negligible in number so we have maintained close liaison with the district extension staff.

(g) Identify solutions to production constraints that can be incorporated into national regional and district development plans.

Comments and Progress: The multi-disciplinary (2-6 person) groups dealing with each of various constraints/programs are in routine contact with farmers and specialists while they go about planning and implementing programs in villages.They will have some very useful insights by project conclusion regarding solutions to the constraints they are dealing with. This is a very sound though time-consuming approach, which the Wings are attempting to implement.

One must be aware that many of the serious production constraints are not amenable to solution. These include: insufficient and/or unreliable moisture fall in much of the country in conjunction with population pressures which have pushed farming people into very marginal areas; deteriorated range conditions along with culture-induced overstocking; shortages of inputs associated with national poverty and cumbersome service systems.

5. Specific Project Outputs Expected and Progress Toward Them

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

Comments: Accomplished

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

Comments: Fully reported in Section V,E,4 (b) and (f).

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

Comments: Those staff and students who participated in administering the Household Survey in particular received training at each site with emphasis on interview techniques. This will be a continuous process as new student groups come along.

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

Comments: Fully reported on in Section V,E, 4, (a).

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

Comments: The establishment of such linkages among professional agriculturalists plus linkages between farmers and professionals is central to our process. Linkages between researchers and Wing staff were initially weak at all sites but have shown marked improvement. Researchers at the local research stations often have responsibility for a particular crop on a national scale, and those may not be key constraints or be important to the farmers we assist. We are overcoming this in part by broadening our linkages across the country, and we will reach into other countries if needed.

We have used the following meaning of establishing linkages:

-Established a National Advisory Body for the project. The committee met four times during the report period.

-Established formal overall advisory committees at two Wings and have utilized multi-agency meetings at the other two. The two committees have functioned effectively throughout this period, meeting about quarterly.

-Established a special inter-agency group at Mtwara to improve linkages.

-At two sites established multi-agency task forces for analysis, planning and implementation of each major Wing program. At all sites researchers, extension workers and trainers are working together to analyze and solve village problems.

-Informal visits are frequently made, copies of letters and memos distributed.

-A project Newsletter has been started.

-Personal visitations.

The first Annual Evaluation Report states that more effort is needed to strengthen linkages among ag research, extension and training. This is particularly true at national level. Our approach to influencing national policies that would affect linkages throughout the country is to first demonstrate the importance of linkages to the success of village-level extension work. Once we have shown how to link and how important it is to success, we can work at Headquarters to effect changes. Of course Headquarters representatives of these three functions will be involved in designing and demonstrating the process for effective assistance to small farmers from the beginning. We hope to conduct workshops toward the end of the project for RADOs and DADOs, and key research and training staff, in cooperation with division directors. Should administrative control of the extension function shift again to Ministry of Agriculture from the Prime Minister's Officer, this job will become easier.

The report of the first Annual Project Evaluation was reviewed with the National Coordinative Committee at their October 1, 1981, meeting. Regarding improvement of linkages, the committee asked for documentation of poor cooperation and suggested that Headquarters staff members liaise across divisional lines during field visits.

(f) Planning Papers for extension, regional and district development officials.

Comments: This output could more appropriately have called for Position Papers rather than Planning Papers. This change has been proposed to USAID in a December 1, 1981, memo to Director Handly from Maxwell and Pickett.

Several Position Papers, dealing mostly with the direction of the FT&P Project, were submitted at the November 24-25 Project Coordinative Meeting, held in Mlingano. We will continue to write such papers dealing with problem areas in agricultural extension, agricultural research, agricultural policy and training. Papers will be presented at the upcoming meeting of the National Council on Agricultural Education (Tanzania). Wing representatives will request permission to attend and speak at national RADO meetings, at n :ional research meetings, and at any other useful forums to discuss our findings and experiences.

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

Comments: Section V,E,4, (b) of this report displays the short courses taught to farmers during this report period. A few of these had rough teaching packages devel ped for them, but most had only tutor notes. We will continue to check out the accuracy and appropriateness of content, refine the writing, increase the audio visuals and add missing sections each time the course recycles. A joint meeting is planned in late January

'82 for Wing representatives and Headquarters staff to sit with Faculty of Agriculture, Forestry and Veterinary Science staff to decide on a standard content and format and on the means for the production of teaching packages.

Wing staff are encouraged to take notes on how each short course was run, how each teacher taught, and the farmer reaction.

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

Comments: This activity will begin about September 1982, after we have collected enough information and experience to provide quality training.

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

Comments: Section V,E,4(c) and (f) of this report have covered this issue. Several programs such as "Increased Use of Ox Power " and "Introduction of Rope Pumps" are under way.

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

Comments: The village demonstrations listed earlier in this report have shown the benefits of various input packages. In the next report period, more effort will be made to extend these packages to individual and communal plots. The demonstrations will also continue.

6. Problems and Recommendations

Much to Accomplish in Little Time. This multi-faceted and highly ambitious project was allocated four years from contract signing until project completion. In that time span, the contractor is obligated to: recruit and orient staff, provide language training, complete Wing physical facilities,

collect and analyze data, develop linkages, design training and outreach programs and materials, train farmers, test and refine methodologies and technological packages, obtain significant increases in crops and animal production in villages, train present Tanzanian extension staff in light of our experiences, integrate MATI and villages, modify MATI curricula, and impact on national policies and procedures regarding training, extension and research. Most of the first year (Sept. 1979-Sept. 1980) was expended in recruiting, orienting and fielding technical staff from the U.S.A. The second year, the period of this report, was half absorbed in preliminaries such as language training, facility completion, self and group orientation, development of rapport and establishment of linkages. In some cases there was a considerable waiting period for local staff and recurrent funds. In view of the above, progress toward program objectives has been very good during this report period.

We have a staggering amount of work to do in the next two years. A one or two-year extension of the contract period is highly recommended. Further, each Wing should not be expected to show a strong performance in regard to every purpose, objective and output. Some freedom to concentrate on those ends which play to their natural strengths is needed.

Shortage of Operational Funds. In FY 1980-81, the Wings collectively requested about Tsh. 900,000 as operational funds. They were allocated Tshs. 200,000 or only Tsh. 50,000 per Wing. The Project Paper commits TanGov for Tsh. 539,500 for operating costs during the second year of the project.

Recommendation: That TanGov increase contributions to a minimum of Tshs. 300,000 for the current year, July 1, 1981 - June 30, 1982, or the project be terminated. Wings are now preparing supplemental budget requests.

These require favorable action. Alternatively, USAID should subsidize certain recurrent funds, for example, costs of staff travel to meetings.

Inefficiencies Associated with the National Economic Situation. In times of financial stress such as Tanzania faces now, institutions such as MATIs are unable to properly meet the obligations they already have, of feeding their regular students, providing transport, upkeep and supplies. They tend to cut out all but the most vital services and programs. Not only are they unable to properly support new, innovative programs such as farmer training, they look to the associated external resources as a means to accomplish their original objectives. More often than during good economic times, the MATI bus will not be able to take students to villages nor collect farmers to the Wing. More often, the Principal and others may feel they have no other choice than to ask the Wing for paper, transport for a sick person, or teaching help in deficient academic departments. When we do assist, energies and resources that are intended for application against project objectives are usurped. We will be given no credit by project evaluators for assisting the MATIs normal activities, yet we are inhumane if we refuse to help in certain emergencies. If reaction to emergencies becomes the normal mode of business, it will become almost impossible to be successful in training farmers.

Recommendation: This situation should be evaluated carefully during the upcoming mid-term project evaluation and changes made thereafter in project expectations or in project support. For example, USAID might decide to fund or supplement project recurrent costs or to provide additional vehicles to take pressure off the Wing vehicles.

In view of TanCov's financial problems, we have already made provision for the project to take on the procurement of an order of Landrover

and motorcycle parts, placed a second Landrover vehicle at Mlingano, supplied the Wings with most office supplies, and slightly upgraded some R.D. specialist's houses.

We are considering purchasing a bus for one or more Wings.

Given the present scarcities in the country, project and Headquarters staff spend an inordinate amount of time and project resources chasing for teaching materials and supplies, compensating for inoperative telephones, etc. Further, staff members spend more work time looking for personal necessities.

Vehicle Decline: Some of the motorcycles are being worn out at an alarming rate.

Recommendation: That the Principals and Wing leaders review their situation and initiate stiffer control over those who are abusing the vehicles. Secondly, Wing leaders should offer additional training on maintenance and care. Thirdly, USAID should purchase five new Landrovers and twenty new motorcycles to replace present vehicles during the final year (to arrive in Tanzania by December 1982). This will make continuation of Farmer Training possible and will take some pressure off the Wings by MATIs for the use of present vehicles (assuming old vehicles are turned over).

Agricultural Development Constraints: In many areas, new technological packages are not available that fall within the range of possibility for Tanzanian village-level farmers. This is related to the marginality of agricultural production of three of the four Wing sites and many other factors.

Inadequate and Shifting Staff: The staff situation is shown under

Section V,A. At Mlingano staffing was adequate during the year. At Mtwara it was short but not critical. At Uyole, R.D. specialist Gene Peuse was on site for five months before a co-worker was assigned, although he had support from the extension tutor. Uyole remained staff-deficient throughout the report year, causing the F.T. program to fall seriously behind. At Nyegezi, a good start was made with adequate staff; however, Charles Smith's two main co-workers transferred in early 1981, leaving a serious staff shortage for about 5 months, at a time when Mr. Smith also fell ill.

Recommendation: We must assign people for Wing work who are seriously interested and able. This should cut down on the transfers. And Tanzanian staff strengths must be brought up to the commitment made by TanGov to place 1.5 senior and 2 junior staff per Wing per year.

Staff Coordination Inadequate: It has been slow and difficult to bring the collective Wing staff to a common view of the project and its purpose. Staff members have varied backgrounds and joined at varied times. There are historical differences in expectations and ways of doing things beteen American and Tanzanian staff (although staff relations have been quite good). We have not fully jelled as a team.

We must continue with at least three Wing coordinative meetings per year, share written materials, provide formal orientation for returning participants and insist that all Wing staff contribute appropriately.

Slow Arrival of Commodities: The length of time required to procure equipment and supplies via USAID has been unbelievable. Slow delivery has become increasingly damaging to the project. The major commodity order was first handed to USAID/Tanzania in April 1980. Over half of the order arrived 14 months thereafter, but the rest has not arrived as of December

1981. It now seems that auto and motorcycle parts will require a year from initial order placement with USAID until arrival.

Recommendation: Ordering of equipment and supplies should be done through the contractor. There seems to be no time advantage of USAID procurement.

APPENDIX A

Farmer Training & Production Project, MATI Mlingano

Annual Progress Report, 10/80 - 9/81

By David Scheinman, Rural Development Specialist

I. Introduction

I arrived in Tanzania on September 12, 1980 and spent my first month at the Expatriates Education Institute in Morogoro learning Kiswahili. I moved to Mlingano in late October and spent the first month orienting myself to the area. A year later I am delighted with the progress we've made. We've become involved in the agricultural development of 3 villages, have held short courses at the Wing, and have followed up those courses by coordinating outreach activities with the participants. We also held a 7 week course for previously untrained village Bwana Shamba who will be employed by the villages and work under the direction of the DADO. We now have a sense of direction. By concentrating on training, linkage, and integration we've involved villages plus the FADO, DADO, Research, and TIREP (Tanga Integrated Rural Development Program) in planning and executing our programs. The Farmer Training Program is a catylyst, bringing together various agricultural institutions in a program of farmer education.

An excellent example of how we operate was demonstrated during the joint Farmer Training/National Coconut Development Program Coconut course held here in August. Through our surveys we identified a need to provide training in coconut production. We contacted the NCDP and they agreed to sponsor a 3 day course for area farmers. Following the course we held a meeting with the participants in their villages and soon thereafter planted 500 seedlings in 3 villages. We have reorganized the teaching notes into a course package which can be used by any agriculturalist to teach farmers throughout the country.

The goals of the Farmer Training Wing/MATI Mlingano are to: 1) Identify needs; 2) fully explore these needs with a subject specific survey; 3) contact and involve experts in the particular field and form a Task force; 4) arrange

an initial training session; 5) end the session by developing a plan of action to transcribe the course into a package which can be utilized to teach others; 7) feedback observations and insights to all relevant agencies and individuals; and 8) evaluate.

II. History and Background: Institute, Students, and Local Situation

MATI Mlingano confers diplomas in Farm Management and Agro-Mechanics to inservice students after 2 years of successful instruction. When the project was conceived, a Certificate course in Extension was expected to be started; it was materialized and, as a result, our orientation changed. According to our mandate we were supposed to adopt local villages reachable by students, probably by the project using villages as classrooms. In the Mlingano area, only one village is accessible to bicycles. Due to the existence of sisal plantations, villages are spread far apart and our other villages are 8, 16, and 12 kilometers from the MATI on poor roads.

From the beginning we realized that each village was unique and that area-specific plans would have to be developed. Thus, our initial philosophy was to adopt the villages, survey the leaders, survey individual families, and roughly determine the needs and capabilities of each village prior to making any crop or problem-specific surveys.

III. Activities

A. Introduction

Area agriculturalists were helpful in initial village selection. However, our primary source of help in becoming introduced to village leaders was the Adult Education Officer of Mkanyageni. Through him, we assembled village leaders, explained the project, and conducted a group interview which gave us a picture of each village. By January we were ready to begin some intro-

ductory courses but couldn't start them because 1) we had not yet been provided with a recurrent budget; 2) the hostel was incomplete; and 3) no one was certain how to purchase the supplies necessary to run a school. This was an orientation period for us as we learned about budgeting procedures, the difficulty of buying electrical supplies, and the problems of the villages.

B. Activities Completed

Completed village leader surveys in Kicheba, Mkanyageni, Lusanga, Mpapayu, and Kigongomawe.

Completed family surveys in Kicheba, Lusange, Mkanyageni.

Submitted Research questionnaire to Mlingano research staff.

Trained 17 Farm Management students in data collection.

Took students on 2 week data collection practical in 3 villages. Filled out 240 Family questionnaires.

Established Advisory Committee with representatives of MATI, RADO, DADO, and TIRDEP.

Built (and are currently testing) 2 grain storage units suitable for village use.

Devised a village nutrition survey and administered it to 73 women in 3 villages. Were assisted by Farm Management students trained in data collection.

Held meetings in villages to determine most immediate programming and training needs based upon survey results.

Held 3 day course in Coconut Production for 32 students. Following the course, participants planted 500 coconut seedlings in their villages with Wing assistance.

Began a 7 week course for village Bwana Shamba with no prior training. Financed by TIRDEP and coordinated by Farmer Training Staff.

Developed a curriculum for above which includes 10 sections taught by different teachers. Teachers are from RADO, DADO, MATI, NCDP, AND MIFUCO.

Administered questionnaire to village Bwana Shamba before developing the curriculum to find out about their backgrounds, villages, interests, problems, and reading and writing abilities.

Planted 50 banana trees behind hostel as part of practical exercise for village Bwana Shamba

Planted a demonstration garden next to the office which included tomatoes, amaranthus, swiss chard, beans and onions.

Planted maize and sorghum demonstrations at 6 sites.

Held three 1 day orientation seminars for 3 villages.

Completed student survey of Farm Management students.

Got Comworks to build a short road to the Wing.

Converted Coconut course notes into a teaching package which can be used by other institutes. Will do the same with other short courses.

IV. Outputs Taken from the Logical Framework

A. Farmer Training Wing at Mlingano

The Wing at Mlingano is being run by a Tanzanian staff of 3 plus myself. Construction is virtually complete but the hostel sitting room needs furniture. We have been using our offices since May, have planted a demonstration garden, and will continue to expand production.

B. Technical Assistance Provided to Villages

Training was begun in the villages. In Kicheba, Mkanyageni, and Lusanga we planted 2 maize and 2 sorghum plots. We planted maize at 2 week intervals to show the importance of timely planting and proper cultural practices. Each

plot was 45 x 90 ft. and was planted with voluntary village labor. Due to a misunderstanding, the maize in Mkanyageni and Lusanga was harvested without our knowledge and as a result we couldn't obtain yield figures. In Kicheba we were present during harvesting and calculated the yield.

We planted one plot each of Lulu and Serena (sorghum varieties) to show farmers how to grow these drought-tolerant crops. Prior to harvesting, the crop was attacked by birds and yields were reduced by approximately 50%. Unless something is done about the bird problem farmers will have little interest in these two varieties.

All the demonstrations were organized through the village government. They donated communal land, provided labor, and helped with the organization. We provided seed, fertilizer and expertise. We conducted these demonstrations because time of planting, spacing, and weeding are the most critical variables in planting maize here. Experts from the research station said that it is essential to coordinate planting with the arrival of the rains; otherwise germination will be impaired and the farmers will have to replant. Due to erratic pH and soil levels, application of chemical fertilizer is of dubious value.

Through surveys and meetings we determined (villages and staff) that coconut production, grain storage, human nutrition, and land use planning were subjects farmers wanted in their training programs. We responded to these requests in the following manner:

Coconuts: Schechambo, Scheinman, and staff of the National Coconut Development Project formed the Coconut Task Force. We developed a short survey and presented it to coconut growers in 3 villages. From the results we concluded that farmers wanted to expand their acreage. We held the coconut course and later made coconut extension plans in each village.

Five hundred trees were planted in the villages. The Wing will continue providing extension advice with the NCDP. Since our initial planting was so successful we have requests to plant more trees next season.

Grain Storage Program: We have built a maize crib and a traditional kihenge for shelled maize. The crib contains 10 bags of maize treated with Kynakil and it demonstrates how to control maize weevils. Most farmers had no idea that cheap chemicals were available to kill insects in stored maize. The kihenge will be filled with shelled maize in the future. We have scheduled short courses on grain unit construction and crop protection for early 1982.

Joint Farmer Training - TIRDEP Course for Village Bwana Shamba: we have always made an effort to include local institutions and projects in our program. When the Tanga Integrated Rural Development Program staff decided to expand their program by training additional Bwana Shamba they approached Farmer Training for assistance. We agreed, provided that the training would follow our methodology and agree with our mandate.

Since there are not enough Bwana Shamba, the District Ag Development Officer (DADO) decided to train Class 7 leavers who would then be employed not by the government, but by their respective villages as Bwana Shamba. They would receive two months of intensive training, get additional training every two weeks via the local Train & Visit (T&V) System, and be nominated for the course by their villages. We decided to host the course provided that 1) TIRDEP assumes all financial obligations; 2) Farmer Training writes the curriculum and is in charge of administration; 3) teachers agree to submit course outlines which can be converted into teaching packages; 4) participants from our adopted villages are included. All of the points were agreed upon and on September 21 we began a seven week course which includes Banana Production, Home Gardening, Maize/

Sorghum cultivation, Grain Storage, Horticulture, Coconuts, and Legumes. This is an excellent opportunity for us to develop teaching materials since we are working with crop specialists from the District and Region. Once the materials are developed we'll use them again in courses for our adopted villages to facilitate training and communication. This is necessary since the chairmen and Katibu are overburdened with work and aren't always available when needed.

Development of Land Use Maps: Preliminary plans are underway to develop maps of each village with the assistance of Mr. Henry, Land Use Planning/Surveying tutor at MATI. We will involve his students, utilizing this opportunity for practicals.

Health and Nutrition: Mrs. Samki, a Wing staff member, and I developed a nutrition/home economics survey which we are using in the villages. During September of 1981 she, Matilibu of the Wing, and some Farm Management students interviewed women in the villages. Once the results are compiled, we will design a short course for women. After the course follow up activities will be planned by course participants and staff.

C. Involve Staff and Train Students in Data Collection

Between May 25 and June 5, we trained 17 Farm Management students in data collection techniques using a one day workshop followed by spending two weeks in villages interviewing over 200 respondents. The exercise was very successful; students learned how to interview people and we obtained the data necessary for initial program planning.

D. Simple Information Gathering Instruments

Village, Household, Student, Tutor, Research, Nutrition, and Coconut surveys have been administered. We also administered a questionnaire to ascertain training needs and reading levels of prospective village Bwana Shamba trainees. We will continue creating data collection instruments for specific

crops and programs.

E. Planning Papers

To be developed later.

F. Farmer Training Techniques Materials

We have sets of class notes from each session which will be upgraded into quality Teaching Packages in time and will make them available to other institutions. We write reports on each training session and circulate them.

G. Modified/Improved MATI Curricular and Extension In-Service Training Materials

We are distributing the curriculum for the Bwana Shamba course and will make all others available. The curriculum, plus the notes from each course, can be taught by other MATIs.

H. Improved Agriculture/Cultural Practices Tested in Project Villages

Demonstrated use of TSP, proper spacing, and importance of timely planting of maize and sorghum to villagers. Virtually all farmers know these things. The reasons for low production are the low prices paid by National Milling and the lack of village storage facilities.

Demonstrated how to properly plant and maintain coconut seedlings.

I. Improved Production Input Packages Tested in Project Villages

Coconut & maize packages. . Others planned for next report period.

Conclusion

We have created a program of farmer education which includes many superior design features and involves many Regional and District agriculturalists. We are very happy with our progress and anticipate a successful year next report period.

Farmer Training & Production Project, MATI Mtwara

Annual Progress Report, 10/80-9/81

by David Acker, Rural Development Specialist

INTRODUCTION

The Farmer Training Wing at MATI Mtwara became operational with the arrival of the Project Leader David Acker on August 5, 1980. MATI Mtwara's enthusiastic response to the project had predated his arrival by three months which allowed for immediate "start-up". This same enthusiasm has been characteristic of MATI Mtwara during the first full project year. In less than 14 months the Wing has moved from a true fledgling state to a position of importance in the network of development efforts in the Region.

PHILOSOPHICAL ORIENTATION

The staff of the Farmer Training Wing is united in their belief that Tanzania, like many other countries economically based on the small farmer, has not adequately addressed the training and extension needs of this important sector. The Wing staff believes that in order to train farmers for better lives and better production they must first be thoroughly understood. In order to understand small farmers, it is necessary to apply both modern scientific principles of social science investigation and to invest a large piece of your heart in the lives of those you are trying to understand and help. For this reason the Wing has spent nearly a full year in studying the practices, production constraints and resources of the small farmer within the Tanzanian Village context. The added time and expenditure required by this portion of the project is clearly justified when results of short courses and village extension efforts which have stemmed from this information gathering are measured.

It is the philosophy of the Wing to treat farmers with the respect due

to the group that feeds the nation. Because agricultural development is only one aspect of a larger process, human development, regard for the farmer as a whole being is just as important as involvement in his economic welfare.

It should be noted that Mtwara Region is considered to have the lowest development potential of any area in the country. Any increase in production or perceived well-being by farmers as a direct result of this project will be marginal at best.

ACTIVITIES AND RESULTS

Reported here are outputs as found in the Logical Framework Project Design Summary of the Project Paper.

OUTPUTS

1. Farmer Training Wing at each participating MATI.

One Farmer Training Wing was established at MATI Mtwara and has been operational for nearly 14 months as of September 30, 1981. The construction of the office and classroom complex is complete. Project Leader, 1.5 senior and .5 junior staff are assigned.

2. Technical assistance provided by MATIs to villages including training at Farmer Training Wing and in villages.

The Project worked exclusively in two (2) villages: Naliendele, (pop. 1545) and Mdui, (pop. 818). Both villages are within a 9 kilometer radius of MATI. Technical assistance was provided in the following three categories:

a. Village Projects	Number
Pigeon Peas	2
Sorghum	1
Cow Peas	1
Cattle Facilities	1
Goats	1
Animal Health	1
Human Nutrition	1

b. Village Demonstration	Number
Pigeon Peas	2
Sorghum	1
Cow Peas	1
Goat Raising	1

c. Short Courses	Number of Farmers
Orientation	96
Pigeon Pea/Sorghum Prod.	24
Termite Control in Pigeon Peas	15
Storage Construction	24
Cashewnut Production	24
Sorghum: Harvesting/Processing	20
Goat and Rabbit Production	24
Human Nutrition Education	24
Village Planning	96
Pigeon Peas;Harvest/Processing	24
Animal Health	20

3. Involve staff and train students in data collection and analysis method.

Involved nine (9) staff members and 48 future village extension personnel (second year Certificate Students) in data collection and analysis.

4. Simple information gathering instruments for use in research, training and extension.

The Village Leader Surveying has been completed in the two 1980/81 project villages, in two 1981/82 project villages, and in two control villages.

The Household Survey has been completed in the 1980/81 project villages. Total: 60 interviews.

Two Student Opinion Surveys have been administered. Total: 300 Respondents.

One Tutor Opinion Survey has been administered. Total: 22 Respondents.

One Village Level Extension Worker Attitude and Practice Survey has been developed, translated and field tested. Total: 32 Repondents.

One Research Attitude and Practice Survey has been developed and is being field tested.

5. Planning Papers.

Research and development on four planning issues is in progress. Titles:

"Petrol Powered Progress," "Future of Farmer Training in Tanzania," "Student Involvement in Farmer Training and Farming Systems Research," and "Information Bottlenecks."

6. Farmer Training Techniques.

A teaching package has been prepared for each successful short course.

7. Modified/Improved MATI curricular and Extension in-service training materials.

Consultation with Extension Department tutors and experimentation with new curriculum ideas has been ongoing.

8. Improved agricultural cultural practices tested in Project Villages.

Improved practices relating to three crops and three species of domesticated animals are being tested in Project Villages.

9. Improved production input packages tested in Project Villages.

At least one production input package is being tested in each village.

EVALUATION OF PROJECT TO DATE

The Principal and Staff of MATI Mtwara have supported and participated in the activities of the Farmer Training Wing since, and even before, its inception. This active cooperation combined with the Project Leader's intention to institutionalize the Project at the earliest possible date has led to both rapid and meaningful progress; however, it should be noted that the above progress was made in spite of the following limitations:

Building construction was not completed until July 1, 1981, approximately 2.5 years after its inception, due to lack of building supplies and poor planning on the part of the contractor.

The Ministry of Agriculture has yet to provide funds either on time or in the amount promised in the Project Agreement.

Compared to other sites MATI Mtwara appears to have fared better in its allocation of Wing staff. However, it is important to note that the Ministry of Agriculture has not and is not now providing the full component of Wing staff as promised in the Project Agreement.

It appears that neither West Virginia University nor USAID are experienced in ordering and delivering essential Project commodities to the Project sites. The long list includes office equipment, audio-visual equipment and supplies, etc. This is a particularly lamentable performance by two American institutions claiming to be experienced in international work.

RECOMMENDATIONS

1. It is recommended that the Project at MATI Mtwara be continued and expanded according to plans set forth in the 1981/82 Plan of Work.
2. It is recommended that the Ministry of Agriculture immediately provide a complete component of Wing staff and funding as per the Project Agreement.
3. It is planned that the program at the Mtwara site will be fully institutionalized by June 30, 1982 and therefore it is recommended that the Wing thereafter be run by a returning West Virginia University B.Sc. graduate.

APPRECIATIONS

The success of the last 12 months is directly attributable to a large number of people including villagers, district officers, MATI Principal and tutors, Wing staff, Ministry of Agriculture Headquarters staff, the Project Coordinators and the USAID Project Manager.

FARMER TRAINING & PRODUCTION PROJECT

UYOLE AGRICULTURAL CENTRE

ANNUAL PROGRESS REPORT: 10/80 - 9/81

by Dr. H. Gene Peuse, Rural Development Specialist

I. Summary of Year's Activities

During the past year the project at UAC has concentrated on program planning and initiating contact with farmers and community persons involved in rural development. Progress was hampered by the delayed appointment of a counterpart until April, six months after the arrival of the project leader in September 1980. Nonetheless, meetings with UAC researchers in November 1980 and with Regional and District Agricultural Officers in November/December helped chart project opportunities. In February/March 1981, client contact was established through a series of meetings, first with District and Ward party representatives, then with village leaders and later with randomly selected men and women. Survey results and project proposals were presented to UAC training and research staff, Regional and District Agricultural Officers, and village leaders in a series of meetings in July of 1981.

After nine months of fulfilling the necessary conditions of contact with community resource persons and villagers, project implementation was begun with the delivery of ox carts to the villages in August 1981. Although coordinating meetings and informal contacts will continue into the next year to secure material, financial and organizational support, the project can now direct attention to applying technical services on behalf of its rural clients.

II. Overview of the Project Site

The Uyole Agricultural Centre began in April 1972 as a joint venture between Tanzania and the Nordic countries of Denmark, Finland, Norway, Sweden, and later Iceland. In March 1976 UAC was established as a parastatal (public corporation) with its programs governed by a Board of Directors and a Director appointed by the President of Tanzania.

The major constituent parts of the Centre are the training institute, research institute, and farm production division. The Centre employs approximately 600 people along with a Nordic staff of approximately fifteen. Although the training institute has facilities to accommodate 500 Certificate and Diploma level students, the number of pupils sponsored by the Ministry of Agriculture and various parastatals has not exceeded 400 per year. The research institute conducts studies at the Centre in crops, livestock, economics, engineering, and food technology and maintains nine substations in nine different districts in Mbeya, Iringa, Ruvuma and Rukwa regions. The farm production division was established as a separate unit in 1977 with the goal of making the parastatal self-reliant and of demonstrating and testing modern agriculture on 800 hectares of crop and grazing land.

The research institute conducts applied research in crop and animal development. The extension department of the research institute organizes regional seminars with the Ministry, hosts field days for extension agents, publishes research findings and prepares extension leaflets written in Swahili. The training institute sends its certificate/diploma students to nearby villages for practical extension exercises and upon request organizes in-service refresher courses for extension workers. However, an outreach program that regularly extends educational services directly to the farm household is not a feature of UAC operations. One goal of the FT&P project is to add such a dimension.

III. Project Evaluation Procedures

In the Tanzania Farmers Training & Production Project Progress Report: October 1979 - September 1980, Draft Report No. 63, January 1981, p. 6, seven project objectives are itemized. In the pages that follow, they are presented in abbreviated form with a review of related activities at UAC.

1. Develop methodologies for gathering information on small farmer production practices and constraints.

2. Utilize the knowledge to develop farmer training programs.

A problem identification survey using a small group interview method has been conducted in the villages and has served as the basis for determining the project's primary focus (i.e. oxenization and vegetable production). An instrument for gathering detailed socio-economic data has been prepared for interviewing individual households. Conducting such a comprehensive survey, however, would entail considerable staff time, which at the moment is being devoted to establishing linkages to institutions outside of UAC and to providing services to farmers in order to build credibility as a service program (e.g. delivering ox carts).

Nonetheless, a detailed household survey will be completed in due course, probably using UAC students. Presently it seems more reasonable to employ an enterprise survey approach that will parallel farmer extension activities. For example, in collecting fertilizer orders, farmers are being requested to submit information on types of fertilizer needed, estimated land area for each crop, and rates of fertilizer application anticipated. In solving the spare parts problem, villagers are being asked to make an inventory of farm implements, oxen equipment and required spare parts. Enterprise data will be gathered prior to project intervention and will provide baseline information that can yield statistical generalizations upon remeasurement at the end of the project.

A more difficult task will be to document the affects of project intervention on the institutional arrangements among extension, research and training agencies. The standard formula is to establish coordination committees and to use advisory committee reports as evidence of cooperation. This presumes, of course, that policy consensus at committee meetings is converted into practice or has a lasting impact on the independent direction of the various institutions separately responsible for research, training and extension. Furthermore, it

presumes that coordination from above (the design of technological packages from above) will circumvent implementation problems at the lower levels.

A necessary compliment will be to strengthen coordinating capabilities at the village level. As a first step in documentation, the project will issue Farmers Visit Records to randomly selected ten-cell leaders who will be asked to record visits and activities of various agents who directly deliver services or goods to the ten-cell. Also, a Village Visit Record (perhaps using the existing visitation log) will be used to document services provided at the village level (e.g., Do the UAC students serve a useful purpose during their one and one-half month practicum stay in the village?). Hopefully, this strategem will help village leaders realize the importance of asserting their coordinating authority and, more importantly, give project staff a better understanding of the constant flow of outside support agents.

3. Test farmer acceptance of new technological packages.

4. Conduct evaluations on the effectiveness of farmer training programs.

The enterprise survey instrument will serve as a quantitative measurement of changes in level of farming practice in the villages. Also, farmers who receive training will receive before and after competency checks.

5. Upgrade capabilities of agriculture extension personnel through in-service training courses.

As noted earlier, the extension department of the research institute conducts four annual extension training sessions. Project staff participated in one of the seminars which brought together Regional and District agricultural officers from four regions to discuss planning procedures in extension work. An evaluation of the conference has already been released by the extension department.

6. Utilize MATI staff and students to provide technical training assistance to villagers.

Tentative plans have been drawn which will have students work in the villages with groups of five farmers. However, transport and supervision are major obstacles as nearly 150 students will require placement and supervision.

7. Identify solutions to production constraints that can be incorporated into national, regional and district plans.

The Farming Systems Research Project aims to field adaptive research teams throughout the country. It is being proposed that a team be placed at UAC to complement farmer training and extension activities and to ensure that research investigations can be linked to other site activities.

IV. Concluding Remarks

Most of the past year has been devoted to project design. That is, the purposeful determination of working objectives, target groups, organizational linkage, and defining of functional interrelationships within and external to UAC has been of principal concern. It is still not clear, however, what steps will lead to a situation wherein the project will make the transition from external appendage at UAC to part of UAC's general practice.

FARMER TRAINING & PRODUCTION PROJECT, MATI Nyegezi

ANNUAL PROGRESS REPORT, 10/80-9/81

BY Charles Smith, Rural Development Specialist

SITUATION OF FARMER TRAINING WING AT BEGINNING OF REPORTING PERIOD - 10/80

At the end of the last reporting period, which is the beginning of this one, the R.D. Specialist had been in Nyegezi for four months. We had made a successful beginning on our activities in the MATI and in the three villages selected. We had had a one day seminar which was a spectacular success, we had had a seminar for the Chairman, Council Members, and all Balozi of two of our villages where we had presented a land use map and had the Land Use Planning Staff explain how to use these maps in the village council planning sessions. In addition we had already conducted a three day seminar for the village leaders in all three villages in basic agronomic principles. We had already nearly completed our biggest task to date -- the survey of these three villages. With the assistance of the Land Use Planning Class of '80 we had interviewed hundreds of villagers and had nearly completed the household surveys & health and nutrition surveys. None of the data had been tabulated or analyzed at that time. Our staff was enthusiastic and was starting to operate as a well-organized and smoothly functioning team. Altogether we had made a very encouraging start on the activities and attitudes we intended to spread throughout the villages of Luchelele, Mkolani, and Buhongwa. At the MATI itself however, we were having mixed experiences. We were getting, and continue to get, enthusiastic support from the administration and members of other departments at the MATI. The main problems that plagued us then, and continue to plague us, are the acquisition of equipment, supplies, and building materials to complete the construction phase of our office block and the classroom and dormitory facilities for the village participants. This, then, was the general situation which we were faced with at the beginning of this reporting period.

STAFF SITUATION

At the beginning of the report period the Wing staff consisted of Mr. Matanga on a part time basis, Mr. Smith, the R.D. Specialist, and Mrs. Makwaia who was on maternity leave. Mr. Gwai, who had been the head of the Extension Department, had recently resigned. We were seriously understaffed at that point. The principal assigned Mr. Magande, the Farm Manager, to help us out when he was free. Shortly thereafter our efforts were supplemented by Mr. Nyamenda, a Bwana Shamba assigned by Mwanza Manispaa to work with us. This situation continued for some time, but changed when Mrs. Makwaia was transferred and Mr. Mutakyamilwa arrived. At present we have sufficient staff except for a nutritionist to replace Mrs. Makwaia. We had planned for and scheduled nutrition activities in the villages to begin in January. If our staff is supplemented with a nutritionist before that time, it seems that our programs can proceed as planned.

ACTIVITIES CONDUCTED DURING THE REPORT YEAR

Many of the projects started in the previous reporting period have now been completed. The last of the Health and Nutrition surveys were given. We can report too that all of the surveys made in the villages have now been tabulated and summarized. After waiting nearly a year for the hardboard we had ordered to complete the office spaces and dormitories, it finally arrived and our construction activities have been finished at a cost of approximately Tshs. 41000/= . The facilities are nearly ready for occupancy and use. We are still trying to acquire twelve more beds, which will complete the equipment for the dormitory facilities. The first seminar which will have participants in residence at the MATI is scheduled for Nov. 2 & 3, 1981.

CROP DEMONSTRATIONS

In each of the three villages, the village production committee, (which is also the village subcommittee of our advisory committee), planned a crop de-

monstration. While there was some commonality among these demonstrations, there were some differences as well. For instance, all villages opted for a demonstration plot of different varieties of cassava. Cassava is an important food crop in the Mwanza area, and villagers are looking for a higher yielding variety which is not affected as seriously by the cassava mite and mosaic as are the common varieties. All villages also opted for a fertilizer demonstration on Serena sorghum. In addition, the villages of Buhongwa also voted for a fertilizer demonstration on rice, but this plot was abandoned because it was five feet under water when the crop should have been planted.

Reporting on these crop demonstrations so that they will be comprehensible to the reader is somewhat complicated. We had some results which were totally unexpected. Also the unpredictable rainfall in the Mwanza area entered into the situation to the advantage of the crop demonstration. All of the crops planted are highly drought-resistant crops, and furthermore were planted at exactly the opportune time to take advantage of the scant rainfall. Germination on all plots was excellent. After germination and before thinning the stands, it happened that President Nyerere was in the Mwanza area, and based upon the rainfall conditions at that time, he predicted a serious famine in the Mwanza area and urged the people to plant short term drought resistant crops such as Serena sorghum and sweet potatoes. It was interesting to note that when the stands of various crops were being thinned crowds of school children were on hand to take the uprooted seedlings for transplanting to the school plots and private plots. As the seeding rate had been heavy, and the germination was excellent, there were tremendous numbers of seedlings available. Many hectares must have been planted with these seedlings.

One of the unexpected results was the interest in the bulrush millet as a food crop. Our fertilized plots were particularly impressive. We held

several meetings with the villagers at the plots during the growing period, and there was always a great interest. How greatly the yield of bulrush millet plots was reduced by the heads that were surreptitiously taken away for planting is of course impossible to say. Certainly we can say that there is more bulrush millet being planted in Buhongwa and Mkolani this year. This result was unexpected.

The result of the rainfall pattern -always unpredictable in the Mwanza area- is interesting as well. After President Nyerere had issued his warnings, the rains began and continued at a higher rate and for a longer period than is normal. The rice plot at Buhongwa had to be abandoned as a result. Also resulting from this was the excellent growth and yields of the plots.

Unfortunately at the time of harvest, the R.D. Specialist was out of the country for surgery. The yields for Mkolani and Luchelele were mixed together at harvest time making it impossible to tell the effect of fertilization on these crops aside from the general observations made during our sessions with the villagers and other visits during the growth period. It was observed that in all cases the sorghum and millet were taller, headed earlier, and had much heavier heads on the fertilized plots. The earlier heading particularly impressed the villagers and it is easy to see that indeed it might be a vital factor in a very dry year. In Buhongwa, however, we kept the yields separate at harvest time. After threshing and weighing, the results of fertilization were impressive indeed:

BUHONGWA CROP DEMONSTRATION RESULTS

Serena Sorghum -unfertilized: 133.5 kg.
fertilized: 216.5 kg.

Bulrush Millet -unfertilized: 41 kg.
fertilized: 191 kg.

The cassava plots have not been harvested since they require an 18-month growing period under the cultural practices and the climatic conditions present in the Mwanza area. The plots at Luchelele and Buhongwa look very good at the time of writing this report. The plot at Mkolani, being at some distance from the village, has been almost totally destroyed by wild pigs and porcupines.

LAND USE MAP AND SEMINAR FOR MKOLANI

As reported previously we had conducted a one day seminar on using a land use map and planning procedures for the village chairman, council members and all Balozi in Luchelele and Buhongwa. During this period the Land Use Planning Department at the MATI completed the Land Use Maps for Mkolani. We presented copies of the maps and held a one day seminar for the Chairman, Council Members and all Balozi of Mkolani in the use of this instrument in village planning. (Approximately 25 people attended this course.) All villages now have had this course.

RECORD KEEPING SEMINAR FOR BALOZI OF THE THREE VILLAGES

It became evident during our crop demonstration sessions with the villagers that if we were to make any measurable impact upon their crop production practices we would simply have to teach them the essentials of record keeping on their crops. We were able to get someone from the crops department and the Farm Manager to present a two day seminar for all the Balozi (ten-cell leaders) of all three villages on simple cash account, labour, and yield records. They were to pass on this knowledge to the ten families that they were responsible for. These seminars, like the previous ones, were well received and well attended. It was during this series of seminars that the hemorrhoids which the R.D. Specialist had been suffering from rapidly became worse. The condition eventually became so painful that it was necessary for a medical evacuation to have surgery performed. The operation was successful and work resumed in earnest upon his return.

Several projects were launched almost simultaneously. This amount of activity has been made possible by the arrival of new staff members. Mr. Mutakyamilwa arrived from Ilonga to fill the position of Head of Extension Department vacated by Mr. Gwau. Mr. Sange was assigned by the Principal to work with the Farmer Taining Wing on a part time basis. The arrival of these men was exactly when we needed them most. Their enthusiastic efforts have been invaluable for initiating and conducting the projects which follow.

SMALL SCALE IRRIGATION PROJECT WITH SIMPLE TECHNOLOGY

The village councils have adopted this project as their own project in each village. The Farmer Training Wing has agreed to act with each irrigation committee in the capacity of a facilitator. The initiator of the activities in each case must be the village irrigation committee. There will be more said about this technique later in the report. The activities of these committees and our involvement in them is as follows. After the village irrigation committees had identified several potential sites in each village for the irrigation project, we brought out to each village the head of the irrigation department at the MATI. He examined each site, and a suitable place in each village was chosen for a one hectare plot to be irrigated with simple hand-powered or animal-powered equipment. The village was to clear, level, and prepare the site, dig out the water source and generally to prepare the plot for use. The Farmer Training Wing studied the options and obtained an example of a simple, hand operated rope pump which could be constructed in any village for approximately Tsh. 200/=. This pump was set up at the MATI and the three village committees were brought in for a demonstration. In all the years spent as an educator and all the demonstrations that the writer has seen, this simple demonstration of a simple device in a simple setting was the most effective demonstration he has ever witnessed. The committees had expected a more sophisticated pump, apparently. When they saw the simplicity, and the volume of water it would deliver, they were incredulous.

Virtually everyone was making a sketch and asking questions about it. As a result of this enthusiasm we went ahead and built three more rope pumps- one for each village committee. These will be given to the villages when their work on the sites is completed. The irrigated plots are to be one hectare each. A further refinement is planned for a later date. We are attempting to develop a simple animal powered treadmill which can provide the power required to operate the pump by using a bullock or cow which are plentiful in the area. We are hoping that this animal power unit will be available by May or June 1982.

YOUNG FARMER PROJECT, AND FIREWOOD PLANTATION

With this project we are attempting to solve or alleviate three of the problems that we have found in the villages. The first is a problem that seems to be common throughout Africa- the migration of youths from the villages to the urban areas. The two other problems, however, may be unique to villages in the Mwanza area. The first of these is that due to the shortage of fire-wood (as a result of denuding the area of trees) it is necessary for the villagers to burn much of the cowdung as fuelwhich would otherwise help to keep the cropland productive. The second problem that we wanted to overcome was the lack of a reservoir of improved chickens and rabbits which we expect to need when our nutritional and backyard projects become operative.

The way that these young farmers' clubs were formed was as follows. The village councils approved the projects, and in the cases where there was more than one primary school in the village, designated which school was to have the young farmers' program. We next went to see the headteacher for each of these schools, and basic guidelines were laid out. The young farmers' clubs were to be restricted to not more than 60 pupils from each school. The first project that would be undertaken in each case was the planting of one hectare of fire-wood seedlings, to be for the use of their respective villages. (The village

Council had in each case designated ten hectares of village land for fire-wood project -- one hectare to be planted each year for ten years). Later, poultry and rabbit projects are to be started with each club, the original breeding stock to be supplied by the Farmer Training Wing. These proposals were accepted in every case by the headteacher. The three clubs have been organized and have selected their club leaders.

Meanwhile, we have taken the Natural Resources expert in Mwanza to each of the sites for planting trees. He has approved the sites and named the species of trees to be planted. We have taken Land Use Planning students from the MATI to the sites where they staked out the three one-hectare plots.

The tree seedlings for planting are being grown in the Government Nursery in Mwanza. They are to be transplanted in early December when the rains are suitable. Two of the plots were found to have a species of grass growing on them which would seriously compete with the seedlings during their establishment and initial growth. It was decided to disc these two plots with MATI equipment before planting. The pupils would then hand pick the rhizomes of grass, and interplant a crop with the tree seedlings for the first year to subdue this grass. Plans are underway to start the rabbitry and poultry projects in each club.

LIVESTOCK IMPROVEMENT PROJECT

Each village has formed a livestock committee. This is composed of village council members and leading cattle keepers in the village. Perhaps before explaining what actions were taken to implement this project, the reader should have a short background of the cattle keeping practices of the Sukuma people in the Mwanza area. It is evident to a newcomer in the area that there are too many cattle, considering the soil and rainfall conditions. In our surveys of the villages we have found more than twice the number of cattle than would be recommended for the grazing land available. The results are evident. Desertification is proceeding at a rapid rate in the area. This is only partly due to the

overstocking by cattle, of course.

Cattle are kept by the Sukuma people more as a matter of tradition and culture than as an economic enterprise. Prestige and family obligations are very much tied into the cattle keeping practices.

Nevertheless, the village livestock committee in each village opted to raise milk production, rather than to concentrate on beef production or draft animals. We arranged for, and took each livestock committee to visit the farms and herds of the best two dairy farmers that we were able to find in the Mwanza area. Their enthusiasm was inspiring -- which was a good thing for us, because we have by now started to realize the magnitude of the job ahead of us. Milk production is appallingly low. The traditions and cattle rearing practices have evidently been evolved to keep the small, semi-resistant, zebu type cattle alive, and any milk produced appears to be a by-product. The basic principles of modern, scientific dairy husbandry, feeding, breeding, or managment were totally lacking, or present at a very low level. We decided that our first seminar for these livestock committees must concentrate on these basics. Further seminars will be necessary, and are scheduled for our next year's period.

FISHERIES IMPROVEMENT PROJECT FOR LUCHELELE

This project was originally conceived to help the fishermen of Sweya- a sub-section of Luchelele. At the request of the village council it was agreed to extend this to fishermen from all the sub-sections of Luchelele, as long as the numbers did not exceed twelve fishermen which we had estimated to be our capacity for this pilot project. For the implementation of this project we are relying upon the staff and facilities of the Nyegezi Fisheries Institute -- one of the training institutions located in the Nyegezi area.

The participants for this two-day course were selected in July, since we

had expected to be able to hold the course in August. Another course for the Fisheries Institute personnel materialized for August, however, so the fisheries improvement seminar had to be postponed until December when the staff and facilities will be available again.

CROP DEMONSTRATIONS

We are planning Crop Demonstrations in the three villages again this year. Since the production committee in each village has had one year's experience (as have we) in planning and conducting crop demonstration, we expect to have less involvement this year.

Each village will have one hectare for their demonstration plot -- in addition to the cassava which was planted last year and is still growing. The plots are already designated and two of them have already been disked. The village production committees make the decision as to what practices will be demonstrated for certain, but the last indications were that the use and effect of cattle manure would be demonstrated on Serena sorghum and bulrush millet -- the same crops as were grown last year. These plots will be planted as soon as rains are favorable.

These then constitute the activities that we have undertaken during this year. Perhaps they have been too numerous in view of our limitations of staff and funding, but somehow we have managed to carry them through.

PHILOSOPHY AND CONCLUSION

The reader will have noticed that in almost every one of the projects and activities reported, a village committee of some sort is either in charge, or participating in the decision making. This is by conscious effort and design on our part, and grows out of a conviction, apparently shared by our entire staff at present. It has to do with the old adage "If you give a man a fish, he will eat today; if you teach him to fish, he will continue to eat".

We have seen many foreign assistance programs that have made great accomplishments. However we have also seen that if the people were not taken in as active participants, these programs promptly folded when the foreign assistance was withdrawn and the expatriates left.

It is often said, "If you want something done properly, do it yourself." We could undoubtedly have made more spectacular progress by planning and carrying out the projects ourselves. By encouraging the village leadership to make decisions and carry out village development projects we hope that we will eventually make a more lasting impact. We expect that this program will end some day, but we hope that the attitudes we are trying to establish among the village leadership will continue.

Another thing that the reader will note is that all the projects or activities carried out in the villages are basically within their limitations to carry out themselves with resources they have, or that are readily available to them.

We have all encountered, and deplored, the tendency of villagers to feel that government should step in and solve all their problems for them. While clearly recognizing that there are some problems that, at present, are not capable of being solved by local people with local resources, we feel that there are many problems that are. The very act of overcoming these solvable problems creates attitudes and resources for solving other problems.

To this point we have enjoyed, and continue to enjoy, excellent support and cooperation from the administration and staff of MATI Nyegezi and from the leadership in the villages. We have also been most fortunate in the support of the Regional and District officers of the Ministries of Agriculture, Livestock and Natural Resources, among others. We feel lucky as well for the team spirit and cooperation that has developed among the staff of the Farmer Training Wing at MATI Nyegezi. We feel that we have made some contributions with our training

activities and confidently expect to continue.

RECOMMENDATIONS

There are a few recommendations that can be made.

1. That a larger budget for the current operating expenses for the Farmer Training Wing be approved by the Tanzanian Government, and made available to the Wing in a more timely manner. We frequently find ourselves hampered by lack of operating funds.

2. That the nutritionist to replace Mrs. Makwaia be promptly provided.

3. That the recommendation made last year that a shortwave transmitter and receiver be provided to improve communications between the R.D. Specialist and the Chief of Party in Dar es Salaam be investigated further.

4. That in the case of MATI Nyegezi, special permission be granted to allow us to make purchases and authorize motorbike repairs at other than the specified places.

APPENDIX B

FARMER TRAINING AND PRODUCTION PROJECT

PLAN OF WORK, OCTOBER 1, 1981 TO SEPTEMBER 30, 1982

Lloyd C. Pickett - Team Leader

MINISTRY OF AGRICULTURE - DAR ES SALAAM

A. Roles as Team Leader for the WVU/NCATSU Consortium

As the Universities' representative in Tanzania, maintain the required personnel and financial records, pay local expenses, supervise staff and programs, oversee the procurement and distribution of commodities, prepare reports for USAID and Ministry of Agriculture, maintain appropriate public relations, support field staff in their activities, and provide leadership aimed at reaching the goals set for the project.

B. Program-Related Activities (In conjunction with a Tanzanian co-worker)

Output 1: A Farmer Training Wing at 4 MATIs.

Assist in procurement of remaining building materials as requested.

Output 2: Technical assistance provided by MATIs to villages.

a. Call and organize at least 2 meetings of the National Coordinative Committee, apart from the combined meetings of Wing staff and coordinative committeemen.

b. Via field visits and meetings, brainstorm with Wing staff and others to identify the major constraints to agricultural production and well-being of villagers. Assist in identifying the best points of intervention and in developing training and outreach programs which will benefit villagers most.

c. Locate and alert field staff of relevant studies, experts and facts.

d. Further plan for the evaluation of project impact on villages, farmers, students and tutors.

(1) Further develop the impact measures which will compare pre-project and post-project village conditions and will compare assisted vs. non-assisted villages.

(2) Weight responses to questions which are intended to be incorporated into accumulative scales within the "Village Leaders' Survey" and "Household Survey" instruments.

(3) Ensure that some control villages near each Wing are surveyed.

Output 3: Trained staff and students in data collection and analysis methodology.

a. Urge Wing staff to continue to provide training and experience in data collection and analysis to new students and MATI staff.

b. Urge Wing staff to provide continuous feedback to MATI staff and students regarding their project experiences.

Output 4: Simple information gathering instruments.

Assist in the collection, tabulation and dissemination of survey data.

a. Combine data from the four Wings for: (1) the Village Leaders' Survey, (2) the Household Survey, (3) the Student Survey, and (4) the Tutor Survey. Analyze the results, write and distribute papers and make presentations on the results.

b. Press and assist Wings to develop simple instruments to collect in-depth information within each program/constraint area, then apply it in setting program priorities, in designing programs and as a source of feedback information to relevant agencies and individuals.

c. Ensure that the Household instrument is back-translated to English so its Swahili version can be corrected.

d. Encourage Wings to survey the adequacy of present farmer services.

Output 5: Stronger linkages between research, training and extension to ensure the flow of ideas to the small farmer.

a. Call three or more coordinative workshops for Wing staff and representatives from research and extension.

b. Call two additional meetings of the National Advisory Committee.

c. Visit key researchers and extensionists at headquarters and in the Wing regions during field visits to identify areas of additional cooperation.

d. Encourage Wings to participate more with research institute staff in verifying technological packages in villages and in testing farmer acceptance.

e. Provide feedback from farmers to researchers and extension workers by presenting formal papers at such meetings as the Crops Research Coordinative Committee, RADO and DADO meetings, and F.T.&P. Project workshops.

f. Study and document the effect of cooperative effort (linkage).

g. Circulate the results of data compilation and analysis to regions and headquarters.

h. Write and distribute a quarterly FT&P Newsletter to keep all key participants in MATIs, research institutes and extension field offices informed and motivated.

i. Promote the use of local advisory committees and multi-agency task forces to deal with each extension program.

j. Maintain linkages at headquarters with other relevant project staffs (USAID, FAO, Peace Corps, etc.) and pass news and insights collected from them to field staff.

Output 6: Planning Papers for extension, regional and district development officials.

Position papers will be presented at the National Council on Agricultural Education meeting, at the crop research coordinative committee meetings and, hopefully, at the spring meetings of RADOs and the National Directors/Coordinators (Conference). A presentation will also be made at the annual meeting of the agricultural publicity officers.

Output 7: Teaching materials and techniques developed for small-farmer training programs.

a. Participate with Wing staff in developing curricula, training materials and instruments to evaluate the training of farmers.

(1) Ensure that farmer training includes help for village leaders and farmers to analyze their needs and opportunities, includes content on how to plan and content directed at improving agricultural production. The training should be problem-centered. Farmers and experts should sit together to define problems/opportunities and to develop strategies acceptable to farmers.

(2) Ensure that at the conclusion of short courses, individual or group commitments are obtained from participating farmers to use the training on their own shamba.

(3) The final training input should be via individual followup with farmers in the villages.

(4) Each training session should be evaluated in several ways but should be measured in part by the changes in farming practices, brought about as a result of training and followup.

b. Organize a meeting to plan the format and content and the means of production for teaching packages. Decide what packages to develop and which Wing staff will take responsibility for each package. About 12 teaching packages are likely to be developed. These should be put together, then tested and reworked this year, and again next year.

c. Assist the Division of Manpower and Administration (MinAg) in curriculum development matters as requested.

d. Continue to design a process for effective assistance to small farmers.

e. Develop a more formal monitoring system to evaluate various approaches and recommendations that the Wings try out.

f. Obtain a Tanzania-experienced consultant(s) to advise on the project in early 1982.

g. Promote the further use of "aides" or "contact farmers" by the Wings on a trial basis.

h. Publicize the project, experiences and findings.

i. Keep in continuous personal contact with key policy makers to keep them updated regarding progress and findings.

Output 8: Improved in-service training courses for extension agents at the MATIs.

Preparations will be made for such training late in the report period, but the training should wait until our experience is considerable and our process for effective extension work is fully well formed and tried. In-service training will get underway in a serious manner in 1983; a trial run should be made in late 1982. It should eventually be offered for all levels of workers.

Output 9: Yield-increasing farming practices successfully extended to farmers and villagers.

Output 10: Improved production input packages tested in the MATI and Farmer Training Wing-sponsored villages.

a. Consult with numerous agriculturalists, then assemble lists of commonly accepted recommended agricultural practices that apply to the programs now underway at the Wings. Also assemble lists of questions that researchers would like to have answered via farmer feedback. Make these available to Wing staff and others and urge the Wings to collect the information. Assemble the information and present it to researchers and others.

b. Alert Wing staff of facts, experts and reports that can guide their planning. Distribute the reports to Wing staff.

c. Via supervisory visitations, promote sound analysis, planning and implementation.

d. Upgrade the quality of field notes being kept by Wing staff.

C. Support Activities -- Farmer Training and Production Project

1. Work with counterpart, Richard Shayo, in stimulating an adequate flow of recurrent funds to the Farmer Training Wings.

2. Order additional equipment and supplies needed by the Wings.

3. Distribute Farmer Training supplies and equipment now on order when they arrive.

4. Procure local equipment/supplies/materials for Wings when they cannot be obtained otherwise.

5. Order buses for some or all Wings, if funds are available.

6. Participate in the annual NCAE conference and training conference about February 1982. Serve as an editor of the National Council on Agricultural Education Conference Report, if asked again.

7. Participate in divisional and sectional staff meetings as called.

8. Receive and orient the six participants in training who will return with BSc degrees in December 1981. Assist them to get started. Conduct a three-day orientation session and schedule visits to other Wings.

9. Participate in the mid-term evaluation of January 1981.

10. Arrange for the National Advisory Committee to meet 4 times per year. Add two additional members.

11. Arrange for 3 coordinative meetings per year of representatives from each Wing. Arrange for funding of same.

12. Host the Associate Dean for International Agriculture, WVU, in Nov. 1981.

13. Continue to review the pertinent literature and to order reference materials.

14. Arrange a study tour for Wing staff to other African or Asian countries.

15. Prepare quarterly and end-of-year progress reports and special reports.

16. Distribute copies of the teaching notes and student manuals developed by project staff now being printed at West Virginia University. About 23 topics are involved. Recommend ways to fully utilize these materials.

17. Get mutual agreement between contractors, USAID, and TanGov regarding suggested changes in the wording of project objectives, purpose and outputs.

18. Expand Farmer Training to another MATI if the mid-term evaluation report recommends it.

19. Receive and assist the six returning participants in December. Hold a two- or three-day orientation training session for them.

Appendix B

FARMER TRAINING AND PRODUCTION PROJECT

PLAN OF WORK, OCTOBER 1, 1981 TO SEPTEMBER 30, 1982

David Scheinman and Staff

MATI Mlingano

The following plans are organized according to expected outputs for the project.

Output 1: A Farmer Training Wing at each MATI.

Completed.

Output 2: Technical assistance provided to MATIs.

a. A program will be launched to reduce the losses of grain to pests and insects. Demonstration storage units will be built and insecticides used in each assisted village following training at MATI. Trained farmers will be re-contacted as necessary to promote adoption.

b. MATI staff and students will work with villagers in 3 villages to develop a land-use map and plan for each village. The task group for this program will then meet with villagers to discuss the land-use plan and have them decide how and to what degree they will implement the MATI plan.

c. Train 64 farmers from six villages in farm record keeping and follow up.

d. Assist villagers in a coconut improvement and expansion program. Five hundred improved trees will be planted in 3 villages. Training will expand to seven total villages.

e. An improved nutrition program will be launched to include assistance in legume production, home gardening and rabbit keeping.

Output 3: Involve staff and train students in data collection analysis method; and

Output 4: Simple information gathering instruments for use in research, extension and training.

a. Wing staff will write up the results of the nutrition survey already conducted and distribute it.

b. Additional information will be collected from farmers regarding grain storage and its problems.

c. A survey will be made in villages by students to determine the type of records that villages and individual farmers need to keep. Pre-training will be provided.

d. Collect additional information on coconut production in villages as needed.

e. As MATI Mlingano does not train certificate students to become Bwana Shambas (village extension workers) but instead offers diplomas in agro-mechanics and farm management, we have had to alter the amount and type of student and tutor participation in Wing activities as perceived in the Project Paper. Extension methods comprises a minor topic in both syllabuses. We've also discovered that due to the presence of sisal estates, villages are spaced far apart and are difficult to reach during the rainy season. Thus, the idea of sending students to villages on bicycles is not feasible.

Output 5: Stronger linkages between Research, Training and Extension to ensure the flow of ideas to small farmers.

The Farmers' Training and Production Wing will maintain strong linkages with the regional and district development officers and the Tanga Integrated Development Project. Their participation and cooperation in the project have been excellent. We will be coordinating specific programs with the Regional Ministry of Agriculture Crop Protection and Horticulture Units and with the National Coconut Development Program. Wing staff function mainly as catalysts. It is our responsibility to create an environment in which farmers, district and regional development technicians, researchers, the MATI and others can create and jointly conduct a program of farmer education and village outreach.

Task forces have been established to deal with grain storage, nutrition, coconuts and rabbit raising. Each task force has at least one outside (non-Wing staff) expert who is a professional in that particular discipline. The task forces will create programs based upon needs identified in surveys and discussions. The programs will be carried out by task force members and certain of the Bwana Shamba ya Kijiji who were trained at the MATI by FT Wing and TIRDEP in a recent 7-week course.

Output 6:

Agricultural information, mostly obtained from farmer feedback, will be fed to Headquarters to support a Position Paper to be presented to research officers and extension workers at national meetings. Papers will be presented at the FT&P Project coordinative group meetings and possibly at other conferences.

Output 7: Farmer Training techniques and materials.

We have trained forty villagers to serve as village extension workers. We will use 12 of them in contiguous villages. These Bwana Shamba or aides will be our linkage agents in the village and will liaise between the task forces and farmers. They will live in their respective villages, be employed by them, and will be responsible to the Training and Visit Extension Project under TIRDEP as well as Farmer Training Wings. We will keep good notes to document the successes and failures of the approach.

The Farmer Training and Production Wing has taken the foregoing approach since (1) villages are up to 20 km. from the MATI, and too often the Chairman or Katibu are absent and can't provide leadership on a daily basis; and (2) most chairmen do not have the skill or time to devote to farmer training and extension. All have been very cooperative, but they are difficult to locate, have many other responsibilities, and can't be expected to do as much work with Farmer Training as we'd like. By working with the MaNwana Shamba y.. kijiji we will streamline our program, expand it to 10 villages, and be able to carry out a well-defined program based on 6 carefully planned projects. We hope to schedule village-visit days. We hope to have a plan of work for each village, and we hope to have people from many different offices participating in the programs.

Output 8: Teaching packages.

We will develop packages for coconut production, grain storage, maize crib construction and banana production. These will be shared with MATI tutors and Wings. The packages will probably need a final revision in 1982-83.

Output 9: Yield increasing farming practices successfully extended to farmers and villagers; and

Output 10: Improved production input packages tested in villages.

a. We will plant experimental plots of short variety coconut trees in three villages, each with 40 trees.

b. Construction of maize storage cribs will be demonstrated in villages.

c. We will demonstrate improved methods of gardening and rabbit keeping.

FARMER TRAINING AND PRODUCTION PROJECT

PLAN OF WORK, OCTOBER 1, 1981 TO SEPTEMBER 30, 1982

David Acker and Wing Staff

MATI Mtwara

A. Organization

The following Plan of Work is presented in separate "Output" categories in accordance with the format found in the Logical Framework of the Project Design Summary.

B. Plans (Organized according to "Expected Outputs")

Output 1: Farmer Training Wing at each participating MATI.

Accomplished as of September 30, 1981.

Output 2: Technical assistance provided by MATIs.

The start of the 1981-82 project year will be marked by the addition of two more project villages: Nambelakatela and Mbawala. These two villages along with existing project villages, Mdui and Naliendele, will be represented at a planning workshop which will last 8 days and involve over 100 village and district leaders. The workshop will assist village leaders in formulating annual production plans for their villages. As facilitators in this planning process, the Wing staff and district officers will help village leaders to define their training and project assistance needs. Following this intensive planning effort at the village level, the Wing and its Coordination and Advisory Committees will meet to incorporate training and project assistance needs felt by villagers into a comprehensive program for the coming cropping season.

Editor's Comment: The Planning meetings mentioned above were conducted prior to completion of this report. Each village decided to plant a cash crop to fund a needed project (Water supply and dispensaries). These were: groundnuts of 20, 50, 20 and 60 acres; cassava of 20 acres at one village and an unknown quantity at a second. The Wing will participate in technical advisement.

Farmer training is planned on ground nut production and cassava production.

Output 3: Involve staff and train students in data collection and analysis method.

Wing staff will continue its role as trainers of students and tutors in data collection and analysis. This academic year the Wing will organize approximately 50 days of village extension practicals per student.

Output 4: Simple information gathering instruments for use in Research Training and Extension.

The Household Survey Instrument will be administered to farm families in two new project villages. The Researcher Attitude and Practice instrument will be administered to 10 researchers/scientists at the Naliendele Agricultural Research Institute.

Output 5: Stronger linkages between research, training and extension to ensure the flow of ideas to farmers.

Linkages will be maintained via the overall coordinative committee via a committee of agricultural professionals who meet for this purpose, via mutual involvement projects. Participating are RIDEP, the Regional and District Agricultural Officers and staffs, FAO, Naliendele Research Stations and others.

Output 6: Planning Papers.

Four Planning Papers dealing with the conclusions and recommendations obtained from the analysis of the various survey instruments will be prepared.

Output 7: Farmer Training Techniques Materials.

Teaching packages for short courses presented last year will be utilized again, reworked and distributed to other MATIs and Farmer Training Centers. In addition, a new teaching package will be developed for each new short course sponsored by the Wing.

Output 8: Modified/Improved MATI curricular and extension in-service training materials.

Testing of improved curricular materials for students of extension with a series of 6 teaching packages being prepared.

Output 9: and Output 10: Improved agricultural practices tested in project villages and Improved production input packages tested in project villages.

Improved agricultural cultural practices will continue to be tested in all project villages. The following work will be done on groundnuts at 4 villages:

-Demonstrations on spacing, fertilizer use and time of weeding
-Trials on long vs. short-season, upright vs. spreading, selected vs. Capex seed.

Cassava demonstrations will be conducted at 2 villages on:

-Spacing
-Time of weeding

Short season serghum varieties will be demonstrated at one village.

These will be cooperative efforts between MATI, Naliendele Research Station and Regional Integrated Development Project.

C. Other Plans

In addition, the Wing will be engaged in crucial steps toward further institutionalization of the project. The allocation of WVU graduates to the MATI will greatly enhance the Wing's progress toward assumption of all duties by Tanzanian counterpart staff. The WVU graduates will be part of the transition period of 6 months during which time the lead role of the Wing will be delegated.

FARMER TRAINING AND PRODUCTION PROJECT

PLAN OF WORK, OCTOBER 1, 1981 to SEPTEMBER 30, 1982

Charles Smith and Wing Staff

MATI Nyegezi

A. Introduction

The following projects and activities will be conducted in the villages of Buhongwa, Luchelele and Mkolani. We have selected these areas of work based upon our observations in the villages, the results of data collected in our various surveys in the villages, and upon requests made of us by village leaders and committees. We have had to limit the scope of many of our activities.

Our strategy is a simple one. We intend to gradually increase the scope and integration of our village development activities as our resources of manpower, finances and credibility in the villages improve, and the foundations of skills and confidence are built up in the villages. The activities planned for 1981-82 are common to all the villages with the exception of the fishing improvement project which is for only one section of Luchelele village. We are still in the preliminary stages of village development and the development of our department to cope with village needs at this stage. The activities selected for this year will become a foundation for continuing programs in these fields, and our future efforts will attempt to address the more individualized training needs which we anticipate to be created by the development processes.

B. Plans (Organized according to Expected Outputs)

Output 1: A farmer Training Wing at each MATI.

We plan to install new electrical wiring and tube lights in the farmers' dormitories.

Output 2: Technical assistance provided by MATIs to villages

a. Crop demonstrations will be established.

(See output 10)

b. Small firewood and forestry plantation for each village. In each village the village council has provided 10 hectares of land for this project. It is planned to plant one hectare of firewood trees each year for 10 years.

The Young Farmers' Club in each village will plant the seedlings and maintain them until they are established. The Department of Natural Resources in Mwanza is providing the planting material. The Land Use Planning Students at MATI Nyegezi have already measured out and staked the three one-hectare plots to be planted this year, two of the plots which contain a tough competitive grass will be disced by MATI equipment, and the pupils will hand pick the rhizomes and interplant crops until the trees are established.

c. Initiate Young Farmers Clubs in each village. The village council in each village has approved this project and designated the primary school to participate in the project. The Head-teacher in every case has been very cooperative in starting these clubs. In the beginning, membership will be limited to 60 students per club. The clubs will undertake the firewood tree planting project mentioned above, as well as poultry, rabbitry and garden projects later.

d. Small scale, simplified irrigation project. Each village council will select and prepare one hectare of land for a pilot project, small-scale intermediate technology irrigation plot. The F.T. Wing will provide one hand-operated rope pump per village. When the villagers complete work on the plots, the pumps will be delivered. A further refinement is also planned. We are trying to develop a simplified animal-powered treadmill with MATI assistance to provide the power to operate these pumps.

e. Livestock Improvement Project. Each village has selected a livestock committee composed of council members and large livestock keepers in the community. Each village committee has individually chosen increased milk production as their goal. Seminars are scheduled for these committee members throughout the year, the first to start November 2, 1981.

f. Compost and Livestock Manure Utilization Project. This project is a follow-up of topics discussed in a 4-day seminar of November 1980. It is also tied in with this year's crop demonstration, the firewood plantation project, and the environmental sanitation project and the backyard garden projects mentioned later. At present, in the villages, large amounts of cattle manure must be used as cooking fuel, making it unavailable for maintaining the soil fertility. Composting is not done. A one-day seminar for each village committee is planned. The lessons will be reinforced by the other projects continued throughout the year.

g. Fisheries Improvement Project for Luchelele. Luchelele village council has selected 12 fishermen to participate in the seminar to be held in December. Instruction and facilities for the seminar will be provided by the Nyegezi Fisheries Institute.

h. Backyard Garden Project, small-scale poultry, and rabbit keeping projects along with backyard orchard project. These will be tied in with, and become a part of our food and nutrition lecture series. Also tied in will be the composting project and the environmental sanitation projects. We will be working with the village balozi who will schedule the women from their 10 family cells to participate. These will all be done in the villages. Seeds will be available from MATI, poultry and rabbit breeding stock from the young farmers' clubs in the villages.

i. Environmental Sanitation Project. This is to be a continuing project. The first year will concentrate on rubbish pits, compost heaps, pit latrines and drying racks. These will be a tie in with the composting project and with the backyard projects. Besides improving the sanitation of the villages, we intend to stimulate pride in their villages and neighborhood.

j. Competition and rewards for young farmers' club members and adults will be stimulated with an Annual Project Fair for the three villages, to be held at the MATI. These will be competition for exhibits of poultry, rabbits, garden vegetables and field crops. The exhibits will be placed in junior classes for youngsters and senior classes for adults. Farmer Training Wing is to organize the fair, and arrange for judges and prizes. The first fair will probably not be held this year.

k. Organize young farmers' clubs for out-of-school youths. We will work with the village council and youth organizations in each village to get suitable production projects organized for the youths who have finished school. These will be eligible to compete in the annual fair.

l. A one-day seminar at MATI Nyegezi on the use of draft animals. MATI Nyegezi has oxen and donkeys already utilized for work around the MATI. They expect to acquire horses, harnesses and implements in the near future. The villagers use no draft animals at present, although there are many cattle and a few donkeys in the villages. We will hold a one-day seminar for interested village leaders to show how animals can be used in this way. There is also a tie-in with our intended animal power unit for the small scale irrigation project.

m. Short courses for selected Bwana Shamba. The RADO Office will send Bwana Shamba for a two-day course. The F.T. Wing will describe the projects we have operated and explain the extension techniques used, which ones worked and which ones didn't.

Output 3: Involve staff and train students in data collection and analysis method; and

Output 4: Simple information gathering instruments for use in research, training and extension.

Collect Village Leaders' Survey data on a non-assisted village so a comparison can be made between it and assisted villages at project end.

Collect data on Livestock Management and backyard gardens using the Land Use Planning course students of 1981. Training in data collection will be provided and the results shared with them.

Output 5: Stronger linkages between Research, Training and Extension to ensure the flow of ideas to small farmers.

a. The overall Advisory Committee for the FT&P Project will meet several times during the year to plan strategies and implementation.

b. One-day meeting with researchers at Ukiriguru to exthange ideas and share experiences. The object is to see how the F.T. Wing and research can work together and complement each other's activities.

c. Staff at the regional and district offies will participate in the forestry project.

Output 6: Planning Papers.

Data will be contributed to Headquarters for use in national meetings.

Output 7: Farmer Training techniques and materials.

Getting villagers to assume responsibility for projects will be stressed. Notes will be kept on each technique used.

Output 8: Teaching packages.

Simple teaching packages will be developed for the short courses taught.

Output 9: and Output 10: Yield increasing farming practices successfully extended to farmers and villagers; and improved production input packages tested in villages.

Conduct crop demonstrations of one hectare in each of the three FTWP Project villages. The village production committee will select the site of the demonstration, the crops and practices to be demonstrated and provide the necessary hand labor for planting, weeding and harvesting as village contributions to the project. The Farmer Training Wing (MATI) will provide the inputs of tractor work, seeds, fertilizer, planting materials, etc., needed. There will be an evaluation session held at harvest time at each plot for the villagers concerned.

FARMER TRAINING AND PRODUCTION PROJECT

PLAN OF WORK, OCTOBER 1, 1981 TO SEPTEMBER 30, 1982

Gene Peuse and Wing Staff

MATI Uyole

Plans (Organized according to expected outputs)

Output 1: Farmer Training Wing at each participating MATI.

Accomplished.

Output 2: Technical assistance provided by MATIs to villages.

a. Introduction

The FT&P Project has enabling resources (e.g. vehicles, petrol allowance, office equipment and supplies) to support staff needs, but must depend on farmers' finances, local institutions and donor agencies to fund development programs such as oxenization and land laboratories. Second, the FT&P Project is essentially an advisory service to farmers and, in turn, must rely on technical advice from researchers and organizational advice from the Prime Minister's Office.

Interviews with 237 men and 196 women in the five FT&P villages have directed attention to the major constraints in farming. They appear to be (1) labor, especially in land preparation and weeding operations, (2) technical knowledge of vegetable and potato production, particularly among women (3) inadequate supply of inputs such as fertilizer, pesticides, seeds and oxen equipment. The on-farm labor problem is exacerbated by time spent by women in collecting firewood (often necessitating one day's trek into the Usangu Plains) and in grinding maize.

b. Ox Power

The Wing staff will promote and support the use of oxen power.

-Each village has agreed to set aside 5 ha. for a demonstration pasture
-The Dutch Embassy will provide TSh. 45,000/= for pasture inputs, purchase of oxen medications, and purchase of ingredients for testing of local feedstuffs.
-The District Agricultural Office will provide one ox cart and one cultivator for demonstration at the village level.
-Small Industries Development Organization will import iron and manufacture needed plow spare parts and the U.A.C. experimental row-weeder.
-The Tanzania Rural Development Bank will have to be consulted about acquisition of loans for farmers for the purchase of oxen equipment.

The Wing staff will coordinate efforts to:

-Establish 5 ha. demonstration pastures in each village
-Assist farmers in the repair and acquisition of farm equipment
- Test the use of U.A.C. row-weeder in the villages.
-Provide training in animal traction and animal care.

c. ' Demonstrations

The Wing staff will demonstrate approved practices in vegetable, potato, and maize production to women. Two ha of communal plots per village will be established for use by the women as land laboratories, where new varieties of beans and maize will be tested for productivity and palatibility. The use of urea will be demonstrated, especially on maize.

-The Regional office will supply fertilizers and pesticides and some seeds through an FAO program.
-The Dutch Embassy will cover miscelleneous costs (e.g., small hand tools, sprayers, planting poles and twine for tomatoes)
-U.A.C. researchers will release a new variety of bean for production and palatibility testing by women
-Another variety of bean originally developed at U.A.C. and multiplied by a private farmer will be purchased and distributed for trial.
-As with pasture development and animal health care and management, U.A.C. researchers will provide technical advice on crop production as needed.
-The Prime Minister's Office will assist in organizing UWT in the villages so that the land lab may become a long-term project and self-supporting through coordinated leadership.
-The District office will loan seed potatoes.

d. Labor Reduction

To reduce the labor requirement, primarily on women, tree nurseries will be planted in two villages and Wing staff will assist village leaders to acquire loans to purchase grinding mills.

Output 3: Involve staff and train students in data collection and analysis method.

The staff's plan is to heavily employ an "enterprise" or "problem" survey approach that will parallel farmer extension activities. Staff and students will participate in the collection of data during weekly visits in the villages. Training for data collection and analysis will be provided. A survey will be taken to document the services villages are being provided and their worthiness.

Output 4: Simple information gathering instruments.

Several enterprise survey instruments will be developed as will an instrument to document village services.

Output 5: Stronger linkages between research, training and extension to ensure the flow of ideas to farmers.

Numerous linkages are described in the discussion of Technical Assistance (Output 2).

Output 6: Planning Papers for extension, regional and district development officers.

One or two Position Papers will be developed.

Output 7: Teaching materials and techniques developed for small-farmer training programs.

Short courses will be provided for farmers, preferably in a joint effort with the Tanzanian Rural Development Project. The nature and number is not yet clear. Teaching packages will be developed for major topics.

Output 8: Improved in-service extension courses.

Wing staff will cooperate in a minor role with the extension section staff, Uyole Agriculture Center, to conduct an annual workshop for extension workers.

Output 9: Yield-increasing farming practices successfully extended to farmers and villagers.

Discussed under Output 2.

Output 10: Improved production input packages tested in the MATI and Farmer Training Wing-sponsored villages.

-Five hectare pasture demonstrations will be conducted.
-Production and palatability of a new bean will be tested.

Appendix C

MANPOWER DATA - POSTINGS

MINISTRY OF AGRICULTURE

Intended Utilization of Certificate Finalists - 1981

Agro Vets and Land Use Planners	Number	Total
Regions	459	459
Ministry of Agriculture		42
Crop Research	32	
MATIs (Training)	10	
Ministry of Livestock		8
Livestock Research	8	
Agricultural Parastatals		20
SUDECO (Sugar)	3	
Coffee Authority of Tanzania	12	
Uyole Agricultural Center	6	
Other		15
Pyrethrum Board	5	
JKT (National Service)	10	
TOTAL		545

Intended Utilization of Diploma Finalists - 1981

Regions		134
Crops	134	
Ministry of Agriculture		51
MATIs (Training)	32	
Crops Research	2	
Seed Multiplication Farms	2	
Irrigation	7	
Other	8	
Ministry of Livestock		5
Livestock Research	5	
Agricultural Parastatals		40
CAPEX	1	
Tanzanian Tea Authority (TTA)	2	
Tanzanian Sisal Authority	1	
Tanzanian Cotton Authority	1	
SUDECO (Sugar)	5	
Uyole Agricultural Center	17	
Tobacco Authority of Tanzania (TAT)	7	
Coffee Authority of Tanzania	3	
Kibaha Education Center	2	
C.A.T.A.	1	

Appendix C

	Number	Total
Other		15
Defense	4	
ELIMU (Ministry of Education)	5	
JKT (National Service)	1	
Zanzibar	4	
Prisons	1	
TOTAL		245

Intended Utilization of BSc Agriculture Finalists From the Faculty of Agriculture, Forestry and Veterinary Medicine, Morogoro, 1981

Regions		12
Crops	12	
Ministry of Agriculture		43
Technical Services Farmers Advisory, Hdqt.	2	
MATIs (Training)	16	
Manpower Development	1	
Crops Research	6	
Rodent Control Program	3	
Planning Division	2	
Irrigation	13	
TOTAL		55

Student Enrollment in MATIs, December 1980

	1st Year	2nd Year	Total	
I. CERTIFICATE LEVEL PRE-SERVICE				
Multi-Purpose Agro-Vet				
Ukiriguru	78	81	159	
Mpwapwa	79	53	132	
Tengeru	115	115	230	
Maruku	44	45	89	
Tumbi	55	61	116	
Ilonga	55	33	88	
Mtwara	48	47	95	
Land-Use Planning				
Nyegezi	42	27	69	
				978
II. DIPLOMA LEVEL (IN-SERVICE)				
Tengeru (Horticulture)	27	23	50	
Mlingano (Farm Management)	20	13	33	
(Agro-Mechanics)	25	25	50	
Ukiriguru (Crop Production)	48	48	96	
Uyole (Crop Production)	79	77	156	
(Animal Production)	53	68	121	
(Agricultural Home Economics)	24	13	37	
Ilonga (Nutrition)	16	12	28	
Nyegezi (Irrigation)	44	38	82	
(Agro-Mechanics)	33	27	60	
				713

Appendix D

Revised 18 Nov. 1981

TO: All Farmer Training and Production Project Staff and National Coordinating Committee Members

FROM: L. Pickett

RE: Some Guiding Principles and a General Approach to Farmer Training and Outreach

Introduction

The fundamental objective of the Farmer Training and Production Project was agreed to at the April 7-8 F.T. & P. Project workshop as being: "To design, demonstrate and document a successful process for planning, implementing and evaluating a program of farmer education and assistance."

How should we go about designing our process is the question.

Our Farmer Training and Production Project has relatively few staff assigned and has a very short life with USAID assistance. Thus, there is very limited, if any, opportunity for experimentation with broad approaches, even of a trial and error type. It seems to me that we must launch our project from a rather common philosophical and methodological base that is already tested and proven. Wings should then test or compare variations in the details of the process. For example, I submit that we cannot experiment with "settlement farmer training" vs. "Wing-site short courses." We don't have the time nor resources. And, once we choose Wing site short courses, we shouldn't experiment with dialogical vs. non-dialogical teaching methods because we already have confidence in this long-proven method. We may, however, test various times, places, and ways to dialog with farmers. The broad outlines of the project are changed only if an obvious need arises. In simple ways we will be constantly shifting. The process will only become evident in its full bloom as we get 2-3 years into it.

The process we are to follow is already laid out broadly in the Project Paper. I offer the following components of the process, which are actually approaches and principles, as elaborations and additions to the Project Paper for our joint consideration. Let us agree or disagree on these components in order to have a bit more direction in our work.

Components/Approaches of the Process

1. Gain a thorough understanding of the farmer, his situation, constraints, practices, aspirations, decision-making process and rationale for decisions. Learning from farmers will be a continuous process. This understanding will be gained using many or all of the following: meetings and visits; village leader surveys; individual farmer surveys; followup surveys; farm records kept by students; wing staff or Mibwana Shamba; and via classroom dialog with farmers. To this, development workers must add information obtained from: a review of literature, from agriculturalists, from consultation with and involvement of ag specialists, and where useful, from sampling or surveying soils, crop yields, insect pests and diseases, etc. All assumptions will be challenged and verified

as possible. Baseline data will be collected to measure progress against. This approach is similar to Farming Systems Research.

2. Involve a multi-disciplinary team of people including village leaders, farmers, researchers, extension workers, party officials, tutors, students and others who have a vital interest in the village of areas at issue in analyzing constraints and opportunities and in planning, implementing and evaluating training and extension programs for small farmers and subject matter specialists, are recommended to investigate each major constraint and to plan and implement extension programs to remove the constraints.

3. Select and concentrate effort on a few of the highest potential constraints/opportunities* which are amenable to Wing support, and tackle each via a comprehensive or full package. Extension programs should incorporate numerous reinforcing and complementary activities aimed at reaching measurable program objectives. Additional information will normally need to be collected from time to time during program selection. The farmers must help select and plan that which they are asked to help carry out. The planning process should help them to better understand their needs and opportunitites and should increase planning skills and confidence. One might best start with a quick, highly visable project to develop early credibility. An extension program plan should be written for each program.

4. Assist in the formulation of village plans where it seems feasible.

5. Work with village leaders, local agencies and organizations rather than around them, thus benefitting from their legitimation and assistance in implementing wing-generated programs. Winning the confidence and support of key people should be a first step in village work.

6. Wing leaders will function principally as coordinators and as catalysts within the pool of human resources that the wing will pull together (link) to analyze and solve farmers' problems. The intent will be to involve researchers, extension workers, parastatals, farmers and others, and to bring forth the best thinking and the best action from them. In so doing, the value of joint effort in problem solving will be demonstrated. Participation will be rewared, at least with project success and a thank you.

7. Follow a very special approach in communication with farmers. Professional staff will use what DeVries and others refer to as a dialogical approach-- a situation in which trained agriculturalists and farmers share ideas freely on a basis of mutual respect. The approach will be followed during all stages of project work: analysis, planning, implementation and evaluation. The agriculturalist should thus be able to avoid making wrong assumptions and drawing wrong conclusions. Our dialogical approach will aim at developing the whole person (the farmer); at increasing his confidence in solving his own problems; at increasing his confidence in science and technology and in the institutions servicing him; at improving his planning and leadership skills, and his cooperativeness; at increasing his understanding of his problems and opportunities.

* Three to six major programs are recommended each year.

8. Typically, task force workers will make several contacts with farmers in order to move them from skepticism (of the value of a new practice) to acceptance of an idea, and thus hopefully, to adoption of a new practice. Demonstrations on farmers' fields followed by "practice" will be emphasized as a method most likely to convince farmers to change farming practices.

9. Employ the "train and visit" system of extension wherever it can be used. Thus, each student and wing staff involved in villages will have clearly defined roles and goals and will know how to accomplish his task.

10. Follow what is somtimes called the "community development process" in cases where community projects are needed.

11. Integrate farmer training with village outreach (extension) activities to the degree that they are sometimes indistinguishable. Farmer training will be dialogical, practical, problem-centered, and human growth oriented. It will end in commitments to action and be followed by farm visits and/or other contacts.

12. Emphasize education in all farmer contacts, helping the farmer to be self-sufficient through development of his skills and confidence.

13. Increase linkages among all groups who can affect ag production and well-being of villagers. To insure that communications flow freely and often between farmers and researchers, to the degree possible, researchers will sit with farmers on advisory committees, will participate with farmers on task forces, will be invited to attend village meetings, will participate in training events with farmers and will be called by Wing staff for task forces to consult on technical matters in the presence of farmers. In much the same way, linkages will be developed between farmers and all potential problem solvers, such as extension workers, government policy makers and service institutions. Routine linkages will also be developed between staff of technical agencies, for example, between ag researchers, extension workers, training staff, party officials, PMO officers, etc., primarily by involving them in problem solving at the local level.

14. Whenever possible, participate with researchers in conducting village verification trials and demonstrations, and always feeding back results and farmers' opinions to the researchers. Modify recommendations where needed and verify the modifications.

15. Join with extension staff who already have responsibility in the areas covered by the F.T. Wings in a team extension effort, remembering that daily activitiy properly carried out offers practical training in improved extension methods.

16. Be somewhat experiemental in our extension and training approaches, carefully monitoring and evaluating each approach, correcting where necessary and dropping the less effective approaches.

17. Always stress self help. Example: Help the farmers to get a TRDB loan, but avoid getting a loan for them. Build an "I can" attitude.

18. Train and use contact farmers or aides who will then train or convince other farmers to change practices. This will increase the rate in which all villagers can be reached. Each group of master farmers will usually be trained

to deal with only one constraint or one extension program.

Apart from the process to be used in assisting villagers, the F.T.& P. Project will upgrade the quality of training for MATI students and staff by their direct involvement in village problem solving. In a later stage, the project will also train village extension workers.

Appendix E

Present National Coordinative Committee Membership-

Farmer Training and Production Project

Member	Organization
Dr. A.M. Chagula	Veterinary Services Division, MIFUGO
Dr. J. Keregero	Faculty of Agriculture, Forestry and Veterinary Medicine, Morogoro
V. Malima	Crops Research Division, Ministry of Agriculture
S. Muro	Technical Services and Farmers Advisory Division, Ministry of Agriculture
V.K. Rugeiabwa	Training Section, MIFUGO
A.H. Senyagwa	Training and Administration Division, Ministry of Agriculture