

PROJECT EVALUATION REPORT
 PD-AAL-553
 ISN 13663

Farmer Training and Production Project

4. EVALUATION NUMBER (This number is maintained by the reporting unit e.g. Country or AID/W Administrative Code, Fiscal Year, Serial No. beginning with No. 1 each FY) 82-4

REGULAR EVALUATION SPECIAL EVALUATION

5. KEY PROJECT IMPLEMENTATION DATES			6. ESTIMATED PROJECT FUNDING	7. PERIOD COVERED BY EVALUATION	
A. Firm PRC-AG or Equivalent FY 77	B. Final Obligation Expected FY 79	C. Final Input Delivery FY 82	A. Total \$ 3,369,000	From (month/yr.) 2/79	To (month/yr.) 3/82
			B. U.S. \$ 2,528,000	Date of Evaluation Review 3/82	

8. ACTION DECISIONS APPROVED BY MISSION OR AID/W OFFICE DIRECTOR

A. List decisions and/or unresolved issues; cite those items needing further study. (NOTE: Mission decisions which anticipate AID/W or regional office action should specify type of document, e.g., airgram, SPAR, PIO, which will present detailed request.)	B. NAME OF OFFICER RESPONSIBLE FOR ACTION	C. DATE ACTION TO BE COMPLETED
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Evaluation Recommendation 1: The Farmer Training Production Project should be extended to September 1984 to permit the realization of the outputs envisioned in the logical framework as modified in Recommendation No. 2, below. This recommendation is contingent upon satisfaction of Recommendations No. 2, 3, 4, 5, and 6.

USAID Officer TanGov August 1982

Mission Response 1: Mission agreed to extend PACD to September, 1984.

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

USAID Officer TanGov/COP July 1982

Mission Response 2: Changes will be made in logical framework and implementation plan, however the changes will not necessarily be those recommended by the evaluation team.

Evaluation Recommendation 3: Phase-out Contract support of project activities at MATI Nyegezi.

USAID Officer COP/TanGov September 1982

9. INVENTORY OF DOCUMENTS TO BE REVISED PER ABOVE DECISIONS

<input type="checkbox"/> Project Paper	<input checked="" type="checkbox"/> Implementation Plan e.g., CPI Network	<input checked="" type="checkbox"/> Other (Specify) PACD
<input type="checkbox"/> Financial Plan	<input type="checkbox"/> PIO/T	<input type="checkbox"/> Other (Specify)
<input checked="" type="checkbox"/> Logical Framework	<input type="checkbox"/> PIO/C	
<input checked="" type="checkbox"/> Project Agreement	<input type="checkbox"/> PIO/P	

10. ALTERNATIVE DECISIONS ON FUTURE OF PROJECT

A. <input type="checkbox"/> Continue Project Without Change
B. <input checked="" type="checkbox"/> Change Project Design and/or Change Implementation Plan
C. <input type="checkbox"/> Discontinue Project

11. PROJECT OFFICER AND HOST COUNTRY OR OTHER RANKING PARTICIPANTS AS APPROPRIATE (Names and Titles)

Mr. Ronald Harvey, Project Officer
 Mr. S. Muro, Head, Farmer Education Section
 Mr. E. Ngaiza, Principal MATI, Tumbi

12. USAID OFFICE APPROVAL
 Signature: Arthur M. Handl
 Typed Name: Arthur M. Handl, Director
 Date: August 5, 1982

	Name of Officer Responsible for Action	Date Action To Be Completed
<p><u>Mission Response 3:</u> Recommendation accepted and implemented.</p>		
<p><u>Evaluation Recommendation 4:</u> The Government of Tanzania must make a firm commitment to provide the required financial and personnel support to the Project; including the assignment to the Project of all six participants trained in the U.S. under the Project.</p>	USAID Officer TanGov	September 1982
<p><u>Mission Response 4:</u> Recommendation accepted and implemented by TanGov.</p>		
<p><u>Evaluation Recommendation 5:</u> The Ministry of Agriculture should provide a formal plan and accord which will officially define the present and future roles of the Research and Extension Departments in the furtherance of the Project objectives.</p>	USAID Officer TanGov/COP	September 1982
<p><u>Mission Response 5:</u> Ministry of Agriculture has created a committee to develop a plan for better corporation between research and extension to be submitted to the Minister for approval.</p>		
<p><u>Evaluation Recommendation 6:</u> Upon the termination of activities at Nyegezi, reassess the transport and other commodity needs at each of the other three Wings, re-portion the resources at Nyegezi and those still in storage according to need, and immediately order the spare parts required to keep the necessary vehicles and motor-cycles in service for the duration of the Project. (See Recommendation No. 7). All vehicles and motor-cycles should remain under the control of the Contract Technician at each site and be used only for project purposes.</p>	USAID Officer TanGov/COP	September 1982
<p><u>Mission Response 6:</u> A. Equipment list assessed. B. Allocation of Nyegezi resources in process C. Appropriate transport and spares ordered. D. Control over vehicles and motorcycles returned to contract technicians.</p>		

(Continuation Sheet)

Farmer Training and Production Project

621-0119.

USAID/Tanzania

X Regular Evaluation

	Name of Officer Responsible for Action	Date Action to Be Completed
<p><u>Evaluation Recommendation 7:</u> Readjust the remaining U.S. commodity inputs to eliminate those items which, because of non-arrival, are deemed least useful; and augment the amount for office supplies and spare parts for Landrovers and motorcycles. Eliminate commodities originally planned for possible expansion of the Project unless option scenario 4 is implemented.</p> <p><u>Mission Response 7:</u> Plan for future commodity procurement finalized. Mission did not completely endorse any 1 of the 4 proposed scenarios.</p>	USAID Officer TanGov/COP	August 1982
<p><u>Evaluation Recommendation 8:</u> Contract Team Leader and Technicians should begin immediately to refine reports on accumulated experiences, basic survey instruments, topical lesson plans, in-service training presentations, demonstration guidelines, and related information so that publications can commence in manual form. Contributions by Tanzanian staff should be encouraged. The contractor should earmark sufficient funds for publication of the documents. The printing run should accommodate distribution to Tanzanian development agencies as well as AID interests.</p> <p><u>Mission Response 8:</u> Contractor reassigned to Dar es Salaam specifically for this task.</p>	COP	On-going
<p><u>Evaluation Recommendation 9:</u> The six participants trained in the U.S. under the Project should be assigned two to each Wing. After spending a complete growing season, a system of rotation should be initiated to permit each participant a familiarization visit of one month at each of the other two Wings. Their permanent assignment to Project activities should be made at the conclusion of this period.</p> <p><u>Mission Response 9:</u> Recommendation not accepted by either Mission or TanGov, however, all participants have been assigned to either existing MATI's or Farmer Training MATI's where expansion has been proposed.</p>	USAID Officer/ TanGov	September 1982

	Name of Officer Responsible for Action	Date Action To Be Completed
<p><u>Evaluation Recommendation 10</u>: The Project should send one high level representative of the Agriculture Research Department and one of the Extension and Technical Services Department on a six-week study trip abroad to observe exemplary models of research-training-extension liaison in action.</p>	<p>USAID Officer TanGov/COP</p>	<p>On-going</p>
<p><u>Mission Response 10</u>: This is considered a low priority by the Mission and TanGov and decision to ultimately fund contingent upon availability of funds.</p>		
<p><u>Evaluation Recommendation 11</u>: The WVU Contract technicians should be made available periodically to assist in the startup operations of the additional MATIs.</p>	<p>USAID Officer COP</p>	<p>On-going</p>
<p><u>Mission Response 11</u>: Mission and TanGov have accepted this recommendation and have reassigned a contract technician to Dar es Salaam for this purpose. Presently and until the PACD technicians are assigned as follows:</p> <p>Lloyed Pickett (COP) - Dar es Salaam David Acker, Rural Dev. Spec. - Dar es Salaam Charles Smith, Rural Dev. Spec. - Uyole David Scheineman - Mlingano</p>		

XD-AAL-553-A
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USAID/TANZANIA:
MID-TERM EVALUATION FARMER TRAINING AND PRODUCTION PROJECT

(621-0119.1)

Contract No. PDC-1406-I-01-1137-00
Work Order No. 1

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May 25, 1982

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ABBREVIATIONS

AID	U.S. Agency for International Development, Washington Headquarters
BIBI SHAMBA	Extension Service field staff member, female
BWANA SHAMBA	Extension Service field staff member, male
CCM	Chama Cha Mapinduzi, The Tanzania Political Party
DADO	District Agricultural Development Officer
DEVRES	The consulting firm in Washington, D.C. implementing this evaluation
FTPP	Farmer Training and Production Project, the subject of this evaluation.
FTW	Farmer Training Wing
KILIMO	Ministry of Agriculture
MATI	Ministry of Agriculture Training Institute
PACD	Project Anticipated Completion Date
PIO/P-C-T	An AID document, Project Implementation Order, for Participants, Commodities, or Technical Services
PP	Project Paper
RADO	Regional Agricultural Development Officer
TANGOV	Government of Tanzania
TAV	Train and Visit system of training para-technical extension agents
TIRDEP	Tanga Integrated Rural Development Project, a West German assistance program
USAID	The office of AID in Tanzania
VILLAGE BWANA SHAMBA	Para-technical agriculturists selected and compensated by the village and provided skills training according to village farmer constraints, <u>not</u> Extension Service Personnel
WING	Farmer Training Wing, the Project adjunct to a MATI
WVU	West Virginia University

I. EXECUTIVE SUMMARY

A. Introduction

After four weeks of intensive study of the Farmer Training and Production Project (621-0119.1), the evaluators concluded that the project warrants continuation to September, 1984. This would permit the contractor four years of field implementation effort as envisioned in the project design. This conclusion is based mainly on the good progress which had been made toward achieving project objectives during the first two years of the four year design life of the project. The approaches and methodology used have generated enthusiasm of and participation from small farmers in technology transfer. The principal Secretary, Ministry of Agriculture (Kilimo) categorically stated that "with or without USAID assistance Kilimo intends to continue and expand the programs, but hopes that the USAID project would continue for two years to help get the program more firmly in place." Although the PACD is September, 1982, only two years of a proposed four year life of project implementation will have been accomplished. USAID and AID/W, rather than the contractor, were largely responsible for the long delays in the implementation actions.

The Farmer Training and Production Project was developed in 1976 by the USAID to determine and demonstrate improved approaches to increasing small farmer productivity by integrating and refining the research, training and

extension arms of the Tanzania Ministry of Agriculture (Kilimo).

In essence, Kilimo pledged about 16 staff members, the collaboration of its already existing infrastructure, new or existing classrooms, office and dormitory facilities, and some supporting funds to the 4-year Project. AID agreed to provide and support 5 American technicians, commodity inputs, U.S. training for 6 Tanzanians, and some of the local costs.

The Project has proposed to establish a Farmer Training Wing at each of four already existing Ministry of Agriculture Training Institutes (MATIs). Agricultural students and staff would be involved in improved practice demonstrations at village sites after the constraints and desires of the villagers are determined through surveys. Research, extension, and Training staff would be involved at all stages. At the same time, various approaches to introducing extension activities to villages would be tested and compared. In yet another facet three types and levels of training are offered: small farmer short course training in the village and/or the wing; pre-service training for future extension agents (general agriculture course students at the MATIs); and in-service training courses developed for present extension field staff to apprise them of the findings in methodology and cultural packages which evolve from the Project.

Serious delays were encountered in initiating the Project. Unanticipated problems arose between submitting the PP to Washington and signing the contract. The involvement of Tanzania in military action in the late 1970s also put the Project considerably behind schedule from the start. By the time the U.S. technicians had arrived, the implementation plan was more than three years late. There were additional delays in the arrival of commodities, and escalating costs and economic constraints caused or threatened reassessment of financial support of the Project by both governments. At the half-way point in the Project's planned life and with an uncertain future, the action agents have been placed in a quandary regarding continuation and expansion of activities. Indeed, an issue assigned to the evaluation team was to determine whether this report should be a mid-term evaluation or a final evaluation!

Therefore, at the outset, the Evaluation Team was faced with an enigma: whether to advocate the "extension" of a project whose life was being curtailed at the midpoint of its existence. The expiration of the Project's Anticipated Completion Date has been caused by delays in AID programming procedures which are not the fault of the Contractor. In truth, it is not a question of an extension of the Project, but rather permission to complete the Project according to the original design.

B. Issues

During the site visits, the Evaluation Team compiled the following list of major factors which need to be addressed:

- o There was a difference among the MATIs in the interpretation of Project Purpose and Objectives.
- o The threatened cut-off of the Project before its full term discouraged future planning and seriously impaired the morale of Americans and Tanzanians at the MATIs.
- o Late assignment and shortfall of Tanzanian staff at the Wings has been a serious constraint to full-scale operations.
- o Assignment of returned U.S. participants did not evolve as originally intended. Although 6 participants were to have completed U.S. training by December 31, 1981, only 4 had returned by April 30, 1982. Of these 4, only 3 were posted to Project sites, leaving Mtwara without the planned counterpart for the American technician.
- o Even a full 4-year Project term would be insufficient to field test the synthesized extension approaches planned as a Project output. Various methodologies and approaches will have been tried and evaluated during the first three years. Modifications and standardization will be made at this point, but conclusive field testing will need to be followed through over an additional one or two years by the Tanzanian staff.
- o The spotty and incomplete provision of AID-purchased commodities impeded progress in varying degrees.
- o Inasmuch as MATI Nyegezi has discontinued its training of future agricultural agents, its propriety for continued Project attention is questionable.
- o Efforts to link Research and Extension services into the FTW Project has been informal, spotty and largely dependent upon personal relationships among staff members.
- o Transportation, in all of its aspects, has presented serious problems at all MATIs and a great deal of time is spent on untangling and solving these problems.

- o Although site activities have been underway for less than two years, there have been opportunities to develop and test some of the data collecting "instruments," village approaches, farmer training, pre-service and in-service training techniques. Concerted attention needs to be given to refining and disseminating the findings in a form which is useful to all TanGov rural development entities.
- o Two built-in constraints to increasing small farmer agricultural production are the result of TanGov policies: a) price ceilings on certain crops, particularly cash crops and maize; and b) production quotas mandated "from above" to the regions, districts and ultimately to the farmers (cotton, for example).
- o There remains a serious shortage of extension agents in the country and they are faced with the dual role of advisor and enforcement official to the farmers.

C. Response Solicited By Circular Cable 081077

Question I. What constraints does this project attempt to overcome, and whom does it constrain? Does the project attack a labor, policy or other constraints?

This project addresses the following constraints:

- o Limited flow of technology to farmer;
- o Shortage of trained extension agents;
- o Inadequate training of extension agents, both pre-service and in-service;
- o Very weak linkage among Research, Training, Extension and Village farmers;
- o Lack of participation of farmers in solving their problems.

Question II. What technology does the project promote to relieve the constraints?

The project centers on the establishment of Farmer Training Wings which provide for:

- o Inclusion of research, extension, training, district office and village organization in Planning Committee membership;
- o Improvement of pre-service training of extension agents by emphasizing participation in village demonstrations;
- o Conduct of in-service short courses for extension agents;
- o Use of village surveys and village committees to identify and attack farmers problems through use of low-cost or no-cost improvements in cultural practices.

Question III. What technology does the project attempt to replace?

- o A directive and enforcing role of extension agents in increasing farm production;
- o Uncoordinated research, training and extension services;
- o Largely theoretical agricultural training;
- o Traditional farming practices such as broadcasting of seeds (rather than row-planting), use of unselected seeds, less than optimal planting dates inadequate seedbed preparation, and minimal weed control.

Question IV. Why do project planners believe that intended beneficiaries will adopt the proposed technology? (Reference Question II)

- o Coordinated planning and implementation promises to facilitate and make more meaningful the roles already set for research, extension, training, and farmers;
- o Agricultural students express personal satisfaction after applying their theoretical knowledge;
- o Extension agents are updated in their specialty;
- o Farmers' felt-needs are the basis for village projects.

Question V. What characteristics do intended beneficiaries exhibit that have relevance to their adopting the proposed technology?

- o Research staff are generally well-qualified and interested in making useful contributions to agriculture;
- o Teaching staff have demonstrated genuine interest in students' application of classroom studies;
- o Students find class theories more meaningful after they have field-tested them;
- o Farmers, in most areas, are interested in improving their own family welfare; the project is addressing their constraints;
- o Extension Agents feel that the project village work is easing the agents' workload and is improving their relationship with the villagers for future efforts.

Question VI. What adoption rate has this project achieved in transferring the proposed technology? (Reference Question II)

- o 100% in the four MATIs;
- o 100% at the four MATIs;
- o less than 50%;
- o 100% at the four MATIs (approximately 9 villages);
- o Initial farmer acceptance will not be measurable until the next cropping season, at the earliest.

Question VII. Will the project set in motion forces that will induce further exploration of the constraints, and improvements to the technological package proposed to overcome them?

- o Strengthening linkage among research - extension - training - villagers - yes, as long as project is externally supported; - residually, to a much lesser extent;

- o Improvement in pre-service training - yes;
- o Conducting in-service training for extension workers - undoubtedly to some extent;
- o Village surveys as basis for determining needs and evaluating progress - yes.

Question VIII. Do private suppliers have an incentive to examine the constraint(s) addressed by the project and come up with solutions?

Since 1967 TanGov policy has seriously discouraged if not precluded private enterprise activities. There is no evidence as yet of agri-business interest in supplying material or other inputs, although opportunities are emerging. It is fair to assume that they will become involved if and when agriculture becomes more sophisticated and demand will provide a profit motivation.

Question IX. What delivery system does the project employ to transfer the new technology to intended beneficiaries?

The project coordinates its various elements through the establishment of Farmer Training Wings at four pre-existing Ministry of Agriculture Training Institutes. The MATIs were already engaged in training future technicians in agricultural extension, land use planning, irrigation, farm mechanization, farm management and crop production. Each MATI is allied with an attached or nearby research station. Villages in the environs serve as the "proving grounds."

Question X. What training techniques does the project use to develop the delivery system?

Involvement of all participating entities in determining problems, developing attack plans and implementing solution efforts.

D. Recommendations

Recommendation No. 1:

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

Recommendation No. 2:

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

Recommendation No. 3:

Phase out Project activities at MATI Nyegezi.

Recommendation No. 4:

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

Recommendation No. 5:

The Ministry of Agriculture should provide a formal plan and accord which will officially define the present and future roles of the Research and Extension departments in the furtherance of the Project objectives.

Recommendation No. 6:

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

Recommendation No. 7:

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

Recommendation No. 8:

Contract team leader and technicians should begin immediately to refine reports on accumulated experiences, basic survey instruments, topical lesson plans, in-service training presentation, demonstration guidelines, and related information so that publications can commence in manual form. Contribution by Tanzanian staff should be encouraged. The

contractor should earmark sufficient funds for publication of the documents. The printing run should accommodate distribution to Tanzanian development agencies as well as AID interests.

Recommendation No. 9:

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

Recommendation No. 10:

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

Recommendation No. 11:

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

E. Summary

In summary, while this evaluation pin-points many issues which suggest changes in the Project, it gives less attention to the positive aspects. It does appear to be

making good progress toward its objectives, despite the unseemly delays in its launching. Where the project has complied with its inputs and time schedules, limited comments have been made. Positive achievements are numerous and these have surfaced in spite of unexpected impediments which at times must have seemed overwhelming. Promising methodologies and approaches to linking Research-Training-Extension-Farmers are now underway and each of the entities is encouraged by the progress to date. The ultimate beneficiary of the Project is the Tanzanian small-scale farming family. Although the field work is less than two years in implementation, the sixteen farmers interviewed by the evaluators were very optimistic of their future, since they had participated in determining their needs, the farming demonstrations to be conducted, and the evaluation of the results. Most demonstrations to date have entailed little, if any, inputs requiring expenditure of funds, but concentrate on good management practices such as proper seedbed preparation, use of improved seed, timely planting, row-planting, adequate cultivation, and optimal plant population.

This report provides four possible options regarding the future of the Project. In the opinion of the evaluators, any shortening of the 4-year planned life will cut drastically into the planned outputs, yielding very low returns on the investment which will have been made by AID. The cost/benefit ratio will be much more favorable if the Project is given its planned life expectancy.

It is proof of the dedication, determination and extra efforts of the staff, both Tanzanian and American, that most of the obstacles have been overcome. A continuation of this spirit and the undiluted support of the sponsoring governments can be expected to yield a lion's share of the planned results.

II. EVALUATION METHODOLOGY

At the arrival of the two U.S. evaluators, Oleen Hess and Robert Wesselmann, on April 9, 1982, two Ministry of Agriculture (Kilimo) staff members had been appointed to participate throughout the evaluation. They were Mr. S.A.N. Muro, Assistant Director of Extension and Technical Services; and Mr. E.M. Ngaiza, Principal of MATI Tumbi. Their assistance in conducting interviews, explaining government and local organizations, and acquiring desired information from government offices, accelerated the work and permitted a more thorough analysis of the project's activities.

After the Dar es Salaam discussions with USAID, Kilimo officials, and the Contract Team Leader, the 4-man Evaluation Team visited each of the project sites: Mbeya (Uyole wing), Mwanza (Nyegezi wing), Tanga (Mlingano wing), and Mtwara (Mtwara wing), for approximately two days each. The USAID Project Manager and Contract Leader accompanied the team but were not present during the interviews. At each MATI, the team talked with the Contract Rural Development Specialist, his counterpart, the MATI principal, tutors from the Wing as well as from the MATI, students, returned U.S. participants and the Director of the affiliated research station. At least two villages involved in Training Wing activities were also visited at each wing where the team saw demonstration plots and talked with village committee members, individual farmers, and in most

cases, the concerned extension agent or paratechnicians. Samples of the questionnaires used are in Appendix H.

Upon completion of the field trips, the team determined the main issues to be addressed and what additional substantiating documents would be needed.

Subsequent meetings were held with Ministry, USAID and Contract officials, including the West Virginia University Campus Coordinator who arrived in Dar es Salaam at this juncture. The draft report and recommendations were discussed with these officials to insure practicability before the evaluation was finalized.

III. RESPONSES TO SCOPE OF WORK

A. Project Goals, Objectives, Outputs, Indicators

1. Potential accomplishment of logframe goals, objectives, outputs, indicators

While the goal remains valid, the objectively verifiable indicators No. 1 and No. 2 are not reasonable in a four-year project of this type. Outputs are reasonable and can be accomplished, although the quantitative indicator No. 3 is distorted, -24 trained staff members may be the upper limit rather than 86. The planned Inputs should be adequate. Each of these factors is discussed in further detail in this report.

Goal: To Improve the Social and Economic Well-being of Small Farmers in Tanzanian Villages.

At the time of the visits of the evaluation team, the 4 contract field technicians had been in country between 17 months and 24 months. In terms of agricultural production, this translates into one or two cropping seasons--a period too short to expect any measurable increase in production and income. Interviews and observations with Training Wing staff, village bwana shambas, and individual villagers did indicate an increase in agricultural understanding and willingness to try suggested and/or demonstrated improvements in their farm practices to some extent, although there was considerable variation among the four areas in which the project activities were taking place. This is to be expected because the farming enterprise and

major constraints and attitude of villagers differ from region to region. The awareness of villagers of their role in problem-solving and planning varied as well, and was difficult to appraise without having a gauging of attitudes prior to initiation of the project.

In all cases, baseline information had been obtained through village surveys at each wing. Comparative data collection planned for later in the project, should permit more concrete evidence of practice, production and profit changes, although all three results may not correlate. True attitudinal changes may be difficult to measure, other than impressionistically, in the short lifespan of the project. This is unfortunate because the development of a willing attitude is prerequisite to the achievement of any behavioral change. Further complicating the process in this project is the fact that the farmer is not completely free to make his own enterprise decisions, as individuals or villages are subject to meeting certain production quotas which may be in the national interest, but may not be the farmers' preference of crops.

The assumption in the Project Design that "the primary focus of TanGov policy and resources would continue to be on rural village development and self-sufficiency in food production" has been somewhat invalidated by the unanticipated military conflict with Uganda. Resultant strains on the country's resources will probably be felt for several years to come.

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

The approaches used at the four wings have varied considerably. Justification exists for this non-uniformity but it is extremely doubtful that a single system will result by the date of completion. The household and nutrition surveys revealed different problems in each region.

At Mbeya, for example, the currently available technology could not be practiced because recommended inputs were not available. The Contract technician, therefore, applied his first year efforts to making the inputs available. His efforts have enabled many farmers to undertake new technology, although there is no evidence that a system of providing inputs will persist.

At Mwanza, there are no general agriculture students at the Training Institute, hence, no reservoir of future extension agents to work with. The training in general agriculture was discontinued shortly before the Farmer Training and Production Project commenced. The focus is on village land-use planning students--a specialty which is only somewhat related to general agricultural extension.

Activities directed at the constraints of firewood shortage (and burning of animal manure as fuel), small animal production (protein shortage), and rural youth clubs, are all long-range in impact. Results will be difficult to realize during the life of the project and a definitive plan to incorporate these activities into the Regional Extension program was not apparent.

At Mlingano, no course in general agriculture is offered, but the contract technician is closely linking his activities with a much larger West German assistance project (TIRDEP). One of TIRDEP's activities is the selection and training of villagers as paratechnicians in agriculture and home economics extension following the train-and-visit system. The symbiotic relationship between the two projects is very much in evidence, but whether a viable system will result remains to be seen.

In summary, the evaluators feel that the Project is making pilot trials of more than one system but will not, in the allotted time, be able to adequately test any synthesized single system.

Noticeably lacking among the indicators is oft-implied Project linkage with research and extension facilities. This linkage continues to be weak and informal, probably because the involvement of research and extension was not built into the project from the start, and there currently is no evidence of a definite commitment from them.

Beyond these points, verifiable indicators in the logframe are valid and realistic.

Outputs

The list of outputs is reasonable although there is a question as to the specifics of item #5, "Planning Papers." There are several interpretations of the term but no consensus. Regardless of the precise meaning intended, it is obvious that many experiences and much usable information will result from this project. This should be documented and widely disseminated at local, national and even international levels. Also specific findings should be tailored for Training Institutes, the Extension Service, Agriculture Research, Ministry of Agriculture officials, Manpower staff, government planners, and donor agencies. It is urged that both the Americans and the Tanzanians who are participating in the project contribute to the documentation. Much of the information can be of immediate use to Tanzania. And much can also be useful in planning future sociological studies.

Means of verification of the expected outputs appear adequate. Quantitative estimates are overly optimistic and may show variations from MATI to MATI.

Assumption: 1) That MATIs can develop data collection and analysis capability is reasonable and already partially realized; and 2) that acceptable technological packages can be developed, is reasonable for the short-range, but research will need to intensify its efforts to maintain a supply of improved technology "in the pipeline."

Inputs

Inputs provided by the U.S. should achieve the objectives during the 4-year term. The number and quality of the Contract technicians and their Swahili capability is adequate. There has been some inconvenience and delay in implementing certain aspects because of the late arrival of commodities, -- in fact, some have not arrived as of the date of this evaluation (April 1982). The participant selection and training have been very good; with one participant indicated to counterpart each of the four U.S. technicians and two additional who can be used for future expansion of TanGov extension training activities. The short-term training component to another African country has not been realized because the contractor has not identified a visit which would be sufficiently fruitful. There are indications that this component may be scrapped.

2. Validity of Log Frame

Goal: Remains valid

Indicators - valid

Means of verification - valid

Assumption - Original wording:

Primary focus of TanGov policy and resources will continue to be on rural village development and self-sufficiency in food production.

Assumption - To be modified as follows:

"A priority focus of TanGov Ministry of Agriculture policy and resources will be on rural village development and self-sufficiency in food production."

Project Purpose

There is a discrepancy in the Purpose as stated in the log frame and the Purpose appearing in Contractor's reports. In the Contractor's Second Annual Report, a revamping of the statement has been proposed which, in essence, changes the purpose from the determination of a system to provide linkage among teaching-extension villagers; and substitutes the testing of various approaches to link research-training-extension-villagers in pilot trials.

The evaluators concur in this emphasis of the pilot trials and the incorporation of research involvement in the log frame (even at this late date).

Purpose - Original wording:

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

The purpose should be restated as follows:

"To design, test and evaluate practicable approaches for developing mutual understanding and communications between and among village, extension, training and research organizations which will lead to the solution of constraints in improving small farmer agricultural production and the welfare of rural families, and more effective MATI system training programs. These experiences will be documented and made available to TanGov agencies and USAID for possible future guidance in rural development activities, and as the basis for continuous upgrading and enrichment of the MATI's curriculum."

The original purpose proposes to increase food production (and small farmer income, in the WVU Contract) neither of which can be expected to show any substantial change by 1984. There will have been at most two cropping seasons for farmers to try new practices on their private plots. The first year has been devoted to organization, obtaining basic data, determining village priorities, and planning appropriate demonstrations. The second year has seen demonstrations on communal land. If the weather was hospitable and if the demonstrations were successful, a few farmers can be expected to try some of the new practices on a small scale in the third season. If their trials have been rewarding, they will very likely expand the area devoted to the new practices during the third season, and a few of the more adventurous farmers will attempt their own first trials. Only at the end of four growing seasons, if all were good, can the first slight increases be noticed, -- but the Project will have "closed its books" before these results come in.

The remainder of the restated purpose emphasizes the pilot approach to improving communications among villagers training - extension - research, resolving farmers constraints and improving the MATI system instructional program.

Verifiable Indicators (Additions and modifications) for achieving project purpose:

1. valid
2. MATI, Extension, Research and associated institutions receiving a useful flow of information from villages for use in modifying and improving farmer training and extension methodologies and introducing new technological packages and farm practices useful and acceptable to small farmers and villagers.
 - 3a. valid
 - 3b. valid
 - 3c. Modified courses and additional new lesson plans in extension, crops and other appropriate subjects developed resulting in syllabus modifications, handbooks and reference materials produced by the Project and in use at the Project and other MATIs.
 - 4a. valid
 - 4b. valid
5. Research specialists conducting relevant small farms adaptive research at the village sites and assisting the MATIs and Extension in planning and evaluating village demonstrations, resource management and production prac-

tices, and synthesizing methodologies as the basis for the training programs and extension work.

Assumptions

1. valid
2. Improved technological practices acceptable to small farmers are currently available: additional, acceptable technological practices can be developed.

Table 1: Project Outputs

	MBEYA	NYEGEZI	MLINGANO	MIWARA
(As of 4/30/82)				
Famer Training Wing at each participating MATI 1) Follow up evaluation	New classrooms Pre-existing domms 2 days of training to date 5 total villages attending	Pre-existing classroom Pre-existing dormitory 16 days of training 3 villages participating	New classroom New dormitory 11 days farmers 3 villages involved	New office/classroom block 32 days of training 4 villages participating
2) Technical Assistance provided by MATIs a) at villages b) at training wing	a) 5 tutors in villages b) 1 tutor in 1 short course	a) 5 tutors in 3 villages b) 6 tutors in 7 courses	a) 3 tutors in 3 villages b) 4 tutors in 7 week course	a) 9 tutors in 4 villages b) 7 tutors in 24 courses
3) Trained staff and students in a) data collection b) data analysis	a) 1 staff, 187 students b) 1 staff	a) 2 staff, 50 students b) 2 staff	a) 2 staff, 17 students b) 2 staff	a) 15 staff, 98 students b) 2 staff, 46 students
4) Simple information gathering instruments for use in research, training and extension	Household Survey Nutrition Survey Village Survey Student Survey Oxen Power Survey	Village Survey Household Survey Nutrition Survey MATI staff Survey Student Survey	Surveys made: Village leaders Household Nutrition Grain storage Para & Technician staff Students Researchers	Surveys made: Village leaders Household Village Extension Tutor Student Researcher
5) Planning Papers	A few	Few	Few	7 presented at national workshop A few others

Table 1: Project Outputs (cont.)

	MBEYA	NYEGEZI	MLINGANO	MIWARA
(As of 4/30/82)				
6) Farmer Training techniques Materials	No	Preliminary	Preliminary	2 short course syllabi & 6 slide sets
7) Modified Training materials for use at:				
a) MWPI	a) Yes	a) Slight	a) No	a) Yes
b) Extension inservice	b) No	b) No	b) No	b) No
8) Improved Agricultural Practices	Demonstrations	Demonstrations	Demonstrations	Demonstrations
9) Improved Input Packages	Yes	Yes	Not yet	Yes
10) Stronger Linkages among Research-Training-Extension to ensure flow of new ideas to farmers ¹	Yes	Weak	Yes	Yes

¹Appears in Contractor's Reports, but not in log frame.

3. Restructuring of project objectives and inputs

The objectives as now stated in the AID Contract with West Virginia University remain valid and much headway is already evident, with the exception of objective No. 5, which relates to in-service training of extension agents. This has been initiated but needs to be intensified.

As in other aspects of the Project guidelines, there is too little documented recognition of the role of Extension and Research in the overall project. It is suggested that an additional objective be included to correct this inadequacy:

"8. Devise and test feasible systems for involving research and extension personnel in the farmer training and extension in-service training elements of the Project."

Input revision is covered in detail in section E-2 of this report. Briefly, one Contractor technician position can be eliminated, and the remaining commodity input list should be revised to eliminate some items and augment more sorely needed commodities.

B. Project Implementation and Management

1. Implementation plan and contractors timetable

The project did not remain on course and is one to four years behind schedule when measuring the dates of actual implementation actions against the respective schedule of action dates in the Project Paper work plan.

The project implementation plan with the proposed date of action plus the actual date the action was taken, the length of the delay, and the organization primarily responsible for the delay is shown in the following table.

Table 2: Implementation Plan

The Project Paper Implementation Plan with the Proposed Date of Action, the Actual Date the Action was taken, the length of the Delay, and the organization primarily responsible for the delay:

ACTION	RESPONSIBLE ORGANIZATION	PP WORK PLAN PROPOSED DATE	ACTUAL DATE	PERIOD DELAYED	ORGANIZATION PRIMARILY RESPONSIBLE
1. PRP Submitted	USAID/TanGov	10/75	10/75		USAID
2. PRP Approved	USAID/W	11/75	12/75	1 month	USAID AID/W
3. PP Submitted	USAID	3/76	4/77	11 months	USAID
PP Approved	AID/W	4/76	8/77	16 months	AID/W
4. ProAg and PIO/T Prepared	USAID/TanGov	6/76	1/79	2½ years	USAID
5. Contract Negotiation	AID/W, Contractor	6-8/76	8/79	3 years	AID/W ³
6. Commodities Ordered	Contractor--				USAID ³
a. Household		7/76	10/77	15 months	USAID
b. Motorbikes		7/76	1/78	17 months	USAID
c. Vehicles		7/76	2/78	18 months	USAID
d. Office Equipment		7/76	9/80	4 Yrs. 2 Mos.	USAID
7. Housing Arrangements	Contractor, TanGov	12/76	7/8 80	3½ years	TanGov ⁻²
8. WU Field Staff Arrive	Contractor	1/77	4-5-9/80	3-2/3 years	Contractor (AIDW ¹)
9. Initial Commodities Arrive	Contractor	3/77	2/79	2 years	USAID ³
10. Data Collection Begins	Contractor/TanGov	5/77	1/81	3-2/3 years	Contractor/TanGov
11. Participant Training in Kenya or Elsewhere in Africa	Contractor/TanGov	6/77	No action		Contractor/TanGov
12. Commodities Arrive					
a. Household		9/77			
b. Motorbikes		9/77	2/79	17 months	USAID
c. Vehicles		9/77	2/79	17 months	
d. Office Equipment					
first half		9/77	4-7/81	3-3/4 years	USAID
second half		9/77	not arrived		
			as of 5/82	4 years	USAID
13. Farmer Training Begins	Contractor/TanGov	9/77	9/80	3 years	Contractor/TanGov
14. First Interim Evaluation	Contractor/TanGov, USAID	12/77	7/81	3½ years	Contractor/TanGov, USAID

Table 2: Implementation Plan (cont.)

ACTION	RESPONSIBLE ORGANIZATION	PP WORK PLAN PROPOSED DATE	ACTUAL DATE	PERIOD DELAYED	ORGANIZATION PRIMARILY RESPONSIBLE
15. Participant Training in U.S.	Contractor	7/78	1/80	17 months	⁵
16. Second Interim Evaluation	Contractor	1/79	4/82	3¼ years	Contractor
17. Third Interim Evaluation	Contractor/AID/TanGov	1/80	?		Contractor, AID, TanGov
18. Project Phaseout	Contractor/USAID/TanGov	10-12/80	?		Contractor, TanGov, USAID
19. Final Evaluation (Post Project)	Contractor/TanGov/AID	1/81	?		Contractor, TanGov, USAID

¹Contractor could not bring staff on-board until contract was negotiated and signed (no. 5 above). There was a delay of 7-12 months between signing contract and staff arriving on-board; however, staff could not have arrived until housing was completed (no. 7 above), even if they had been recruited sooner.

²It is assumed that the training wings, classrooms, offices and dormitories were included as part of the housing (no. 7 above) since it is not specified in the implementation plans. The training wing buildings were completed 10/81.

³USAID ordered the vehicles and motorbikes which arrived 2/79. The first half of the office/training equipment arrived between 4-7/81. The balance of the office/training equipment had not arrived as of 4/81.

⁴A subsequent decision transferred responsibility for commodity procurement from the contractor to USAID.

⁵Training of participants could not begin until the contract was negotiated.

As noted from the above table, the project has not remained on course when the action/performance are measured against the implementation plan. Actions vary from one to four years behind schedule. USAID, TanGov and AID/W had responsibility for the actions causing the major delays early in the proposed implementation plan. No subsequent actions could be taken until the project was approved. The contractor could not negotiate and sign a contract until AID/W issued an invitation to do so.

The implementation plan called for project approval in April 1976. It was actually approved in August 1977, a fifteen month delay. There was another serious time lag of 24 months between the project paper approval, August 8, 1977, and the signing of the contract with West Virginia University, August 1979. (The implementation plan called for contract negotiations between June and August 1976. The contract was signed August 28, 1979, - a delay of three years.) The contract team leader was at post for the final nine months of the Manpower Development Project and was at post when the contract was signed. The contract field team members arrived at post, one in April, one in August, and two in September 1980, seven to twelve months after the contract was signed, (four years after project approval). However, the housing for the contract staff was not completed and ready for occupancy until July and August of 1980, precluding earlier arrival of the team had they been recruited and ready for posting. The

original contract phase-out date was December 1981. This date was subsequently extended to September 1982. If this phase-out date is adhered to, the contractor will be limited to two years of implementation effort to accomplish four years of implementation plan actions.

The contractor was initially responsible for procuring the commodities in the implementation plan but responsibility was transferred to USAID. USAID ordered the project vehicles and motorcycles and they were at post prior to arrival of the contract staff. One-half of the office and training equipment, materials and supplies was received at post between April and July of 1981. The other half had not been received as of April 1982.

a. Implementation at the Farmer Training Wings

Farmer training has proceeded at varying degrees at the four Farmer Training Wings. All four of the Wings have designed data collection instruments (samples of two are found in Annex B) and have trained Wing and MATI staff and students to collect and tabulate the data, and assist in analysis/interpretation. After identifying the major constraints, further discussions with the farmers assured their concurrence that the proper problems were being addressed; accordingly, appropriate demonstrations were placed with farmer participation in the villages surrounding the respective MATIs/Wings. Concurrently, training programs were developed and conducted in the villages and/or the Wings. The number and type of training programs varied from Wing to Wing.

The village demonstrations of all Wings were well done and responded to farmers' needs. The farmers surrounding the Wings were participating in placing and managing the plots, and watching the results of the demonstration with strong indications there would be a spread effect during the next planting season.

The Mtwara Wing is by far the best organized and has the highest quality and most complete program. This has been accomplished with the least Tanzania staff assigned to the Wing. It has the most active training program and excellent cooperation from the MATI, Research, regional, district and village officials, leaders and farmers. It has made considerably more progress than the other Wings in documenting results, preparing farmer training short course curricula, and implementing a wider range of activities. The general agriculture students have been involved throughout the program in all activities.

The Uyole Wing is sited in the area with the greatest agriculture production potential and the most progressive farmers. Observations and farmer interviews indicate high interest in the program. Cooperation/linkage with Research is satisfactory and interviews with the research station director indicated future improvement. The linkage/cooperation between the Wing, MATI Extension/General Agriculture Department and the Area Extension Agent is very good.

Most of the farmer training to date has been conducted in the villages, and is based on constraints identified in the surveys. No courses have as yet been conducted at this Wing, however, the relevance and results of the training are more important than the location. The Wing needs to expend increased effort in documenting results, and developing farmer training short course curricula.

The Uyole Wing identified non-accessibility to production inputs (animal-powered equipment, hand tools, seeds, fertilizer, etc.) as a major constraint and expended much of its efforts obtaining, transporting to the Wing, distributing and selling them to the farmers. Although helpful to the farmers, this diverted effort away from achieving the Project objectives, and accomplished nothing towards establishing a permanent delivery system/source of supply. The emphasis at Uyole must shift from the current production input collection and delivery system to meeting the Project purpose and objectives.

Neither Nyegezi nor Mlingano MATIs have general agriculture students, thereby precluding pre-service training and reorientation of the attitudes and approaches of future extension agents towards working with farmers. The Nyegezi Wing has the least potential of the four Wings for achieving the Project objectives and outputs. This is due to some factors beyond the influence of USAID or the contractor. At the time the project was designed the general agriculture course (pre-service extension/agriculture field personnel)

was being conducted at the MATI. During the interim, the course was deleted from the MATI precluding achieving of one of the Project's objectives: training and reorienting the attitudes and approach to farmer training of the pre-service extension personnel.

The Nyegezi MATI is located about 9 miles from the research station, one factor contributing to the lack of research linkage. Regardless of the reason, the linkage was minimal, the least of any of the Wings. The primary emphasis at the research station was on cotton with very little being done on other crops.

The general consensus from interviews with farmers, MATI staff and other government officials, was that the farmers in the Nyegezi area were very resistant to change and exhibited limited interest in the Wing's activities. Since cooperation from Research and Extension, and farmer interest, are low in Nyegezi, and there are no general agriculture students, there is little apparent justification for continuing Project efforts at this center.

The Mlingano Wing is sited in an area well suited to tree crops (coconut, citrus, banana) and has placed emphasis on this type of production. It also gives attention to maize and other food crops. Although the MATI has no general agriculture students, the MATI staff and students, particularly the Farm Management Department, have been very cooperative. Research and Extension have also been very cooperative.

A West German Rural Development Project in the area had initiated a promising methodology using village bwana shambas (para-technical agriculturists). Each of the villages encompassed in the program agreed to the plan. Each Village identified a young man or woman farmer as its bwana shamba or bibi shamba, to be paid or otherwise compensated for their efforts by the village. The Wing affiliated with this project for its program with village farmers. The village bwana shambas attended seven one-week courses learning appropriate skills and practices, which they carry to the village with assistance, supervision and in-service training from the Wing. The village bwana shambas work with the farmers to place demonstrations and provide guidance and services. The regular extension service staff also provides help to the village bwana shambas and the farmers. The German project pays the cost to the Wing for the training of the village bwana shambas. In addition, the RADO is finalizing arrangements with the Wing to provide in-service training on a continuing basis for the 250 regular extension personnel in the region. Despite the fact there are no general agriculture students at the Mlingano MATI, the program developed to date is worthy of continued project support.

b. Research and Extension involvement

Research cooperation with the Wings has been spotty, but is improving. The dearth of small farming systems research being conducted in Tanzania results in a very

limited supply of relevant practices for the Wings or Extension to extend to the farmers.

There was a serious oversight in the design of the Project. Research totally, and the Extension Service to a lesser degree, were left out of discussions on project design and/or commitment to cooperate with and support the Project. Project continuation should be contingent upon discussions with the Ministry of Agriculture and commitment from Research and Extension, regarding their roles in the Project. Unless researchers initiate research relevant to small farm production and operations there is very little potential for realizing increased production and incomes and improving the rural welfare over the long term. Implementation of the Small Farms Systems Research Project (proposed) should resolve the new technology constraint.

Unless Extension is committed to cooperating with and supporting the activities with the farmers, spread effect beyond a few villages is unlikely. Unless the Extension Service accepts the Project's methodology and approach to farmers, the pre-service students as extension agents will face frustration when assigned to the field and attempting to implement a methodology with which their superiors are not familiar.

The Ministry of Agriculture has confirmed that corrective actions will be taken.

2. Project objectives

No objectives are specifically identified in the Project Paper. They are identified in the contract between AID and the University. The performances relative to these objectives in the contract are evaluated below.

Objective 1. Develop methodologies for gathering information on small farmer production practices, constraints and decision making processes. Accomplished to 4/82 - 70%; Potential by 4/84 - 100%.

The data collection instruments have been developed, MATI students and staff trained to use them and to assist with analysis and interpretation. Survey groups included were: Household, Village, Extension workers, MATI tutors, MATI students, Researchers and Village leaders. The surveys collected data on agriculture, land distribution/use, current farming practices and patterns; economic factors; socio-political system; Nutrition; migration; employment; farm-specific problems such as marketing, transport, pests, diseases and weather; credit needs, use and availability; agriculture support services; rural enterprises and businesses; and health services. The goal was to gain a thorough understanding of the farmers, their circumstances, farming practices, aspirations, decision-making process, rationale for decisions and to utilize this data to devise appropriate training programs. The MATI faculties, local officials, development agencies and farmers were then involved in developing the survey training programs. The

survey instruments require further refinement and standardization to maximize their effectiveness for useful data collection and utilization by other MATIs and/or the Extension service. This can be achieved by PACD assuming four years of contractor field operation.

Objective 2.a. Utilize the knowledge gained to develop small farmer training programs at the participating MATIs/Farmer Training Wings. Accomplished to 4/82 - 20%; Potential by 9/84 - 100%.

All four Wings have utilized the knowledge gained to develop and conduct farmer training programs either in the village or at the Wing or both. The amount of training varies considerably from Wing to Wing. The types of training vary according to type of farming in the area, but are generally on crop production, processing and storage, animal production, tree crop production, nutrition, record keeping and village/farm planning. Farmer short courses offered to date are shown in Annex C. The table for recording data on farmer training meetings developed at Mtwara and recommended for use at all Wings is shown in Annex D. Preliminary efforts have been made and discussion papers prepared. These papers must be organized into farmer short course curricula and teaching guides usable by all Wings, other MATIs, Extension, etc. They should subsequently be developed for bound manuals. (See Annex E for samples.) Increased effort will be required to fully develop the farmer training activity but it can be completed by PACD assuming four years of contract field operations.

Objective 2.b. The program to be designed to facilitate greater understanding and communication between the farmers and extension workers. Accomplished to 4/82 - 20%; Potential by 9/84 - 75%.

The program/approach has been largely designed and is ready for implementation through in-service training programs and involvement in the Wing's village program. To fully realize this objective will be a longer range activity than a four year project.

The contract staff has been at post 18 plus months, therefore, it is early to expect dramatic change. For the past several years Tanzania has had a policy of production targets. The responsibility for implementing the policy has fallen largely on the Extension Service. Pressure on the farmers to meet their quotas has resulted in the Extension Service directing the farmers to produce for the quota, rather than advising them on production/management practices with the crops they may have preferred to produce. The result has been one-way direction, rather than two-way communication. The shortage of transportation and trained personnel further affects the Extension Services morale and performance.

The Principal Secretary, Kilimo, stated that the program would be continued and expanded to at least one new MATI per year. This will contribute to achieving 100% of the objective. In addition legislation was passed during the period the evaluation was in progress transferring a..

agriculture/rural extension personnel and activities back to Kilimo from the Prime Minister's Office and the various Boards, parastatols, etc. This action will make it possible for Kilimo to reorient the Extension Service from enforcement responsibilities to providing education/guidance service to farmers/rural population and realize the objective of greater understanding and communication with farmers. The continued pre-service and in-service extension training under the Project and post Project will reinforce the reorientation direction of the service. Although it is doubtful that the objective can be fully achieved during the four year life of the Project, it is expected that the concept will be sustained and reached within two years after the Project is completed.

The Extension field staff in the area of three Wings were cooperating with farmer training activity to the extent the above circumstances permitted. Limited contact with extension agents indicated they had had no guidance/instructions from their supervisors to implement the project concept in farmer contacts. Interviews with RADOs and DADOs at two Wings indicated they had a good understanding of the Project's farmer training/guidance concept. They were away from the office at the other two Wings, but information indicated one of these was cooperative. The RADOs and DADOs at two Wings expressed interest and plans for the Wings to conduct in-service training for the field agents.

At the two MATIs that have general agriculture/extension pre-service students the students were involved, were gaining an understanding of the methodology, and expressed interest and appreciation for the importance of using the methodology. It is expected that as these graduates are assigned to the Extension Service they will have an influence on future operations. However, as stated in the recommendations, widespread impact on the Service will require a commitment and reorientation at the national level, an action which the Principal Secretary, Ministry of Agriculture and the Deputy Director of Extension and Technology stated they intend to accomplish. They also stated that the Ministry planned to expand the program to additional MATIs, at least one-per-year. This will further reinforce the linkage and cooperation. The soon-to-be-initiated extension agent in-service training should have an impact on Extension in the Regions where Wings are located. The combination of these actions can result in achieving the objective. This will be made easier since all extension personnel currently posted to parastatals, boards, etc., are being transferred from the Prime Minister's Office back to the Ministry to form one extension service, rather than the multiple services now existing.

After the farmers' constraints were identified at all Wings through the data collection instruments, practices to alleviate the constraints were discussed with the village committees and decisions made regarding which demonstrations were most appropriate. However, this was carried out with a

minimum of extension participation. The farmers expressed appreciation because the Wings worked closely with them to: identify their needs; determine the priority for actions; provide training; and supervise the implementation. Vastly increased efforts will be required to achieve this objective by PACD, assuming 4 years of contractor field implementation.

Objective 3. Test small farmers' acceptance of new technological packages and the efficacy of various extension and training approaches in transferring agricultural knowledge to small farmers and villagers. Accomplished to 4/82 - 50%; Potential by 9/84 - 100%.

Current observations in the villages and farms indicate the farmers are interested in the new practices that have been applied in the demonstration plots. However, the first crop has not been harvested utilizing the new practices. It is, therefore, too early to fairly evaluate this objective, but preliminary indications are favorable.

All demonstration plots to date have been planted on village communal plots. Village leaders who are farmers, and farmers interviewed, expressed interest in the demonstrations and were waiting until after harvest to make a decision whether to apply the practices on their own plots. The demonstration plots invariably looked superior in appearance and production potential to private fields. Expectations are that there will be a spread effect after the demonstrations are harvested, starting slowly but

expanding after some of the more progressive farmers apply them. The goal of about 15,000 farmers (total of all Wings) should be reached, assuming 4 years of contractor field operations.

It is questionable as to how many and how much of the improved practices applied by the farmers were due to the Wings efforts at Uyole, and how much to previous efforts by Research. Regardless, farmer interest/participation demonstrated that the Wing was effectively reinforcing previously introduced practices, plus some new ones, with a strong potential for future spread effect.

Uyole, Mlingano and Mtwara Wings were much more effective than Ngegezi in sustained farmer contact, and following up with farmers after a training course, and were utilizing the findings to better effect. However, Uyole had conducted nearly all training in the villages in conjunction with demonstrations.

All Wings used the data collection instruments to gain knowledge of the local situation and to identify constraints. This was the one common approach and shows great promise.

The Nyegezi MATI has no general agriculture students for follow-up and apparently had made the least impact on farmers. MATI students and staff felt the data collection helped improve their instructional program, but felt limited impact resulted otherwise. Nyegezi is unique in using the village land-use planning department and students to help

determine the subject and location of village demonstrations, and as the village/farm contact rather than Extension.

The Mlingano MATI has no general agricultural students, but the Wing has very effectively coordinated the program with the MATI, gotten cooperation from the MATI staff and students, and is making a positive impact on the MATI and farmers. Coordination with and support from Research is improving. As stated above Mlingano is effectively implementing a village para-technician program with support from the Extension Service. The RADO expressed enthusiasm for the overall approach, the grass-roots farmer contact and training, and was planning future in-service training at the Wing for the regions' extension field staff.

The Mtwara Wing has a very well organized, complete program with field/Wing implementation actions and documentation of actions/results, yet it has suffered most from lack of Tanzanian staff. One Extension Agent has been transferred to the Wing and is the only Tanzanian Wing staff member. The Wing has excellent rapport with the MATI staff and students, Research and Extension. It has generated high farmer interest in the least progressive farming area among the four Wings. It also has the most complete comprehension of the Project concept. Each of three villages had demonstrations planted and cared for by the farmers, including groundnuts, sorghum, sesame and cassava. In addition, goat improvement and rabbit production programs are underway.

The farmers interviewed stated that, if the yields from the demonstrations are as good as they look to be, they will use the technology on their private farms next year.

All Wings work through the village leadership and have established village committees. Each Wing has established a guidance committee composed of relevant Regional, District, and MATI officials, who also assist with breaking bottle-necks as they arise.

Objective 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 are to be used to refine and improve course content and teaching techniques for the MATIs as well as their farmer training Wings. Accomplished to 4/82 - 50%; Potential by 9/84 - 100%.

Following the first survey the data collection instruments have not been revised and administered for the second time as part of the followup evaluation. The Wing staffs have made observations and held discussions at the villages/farms and gained some insights, but a quantitative/qualitative follow-up evaluation remains to be done. The rationale for not having done so is that it is too early to obtain definitive results. One Wing in particular has been slow in designing and offering farmer training courses at the Wings.

The results from the initial surveys and the resulting actions/practices have been included in the course content of the MATIs for teaching the pre-service students,

increasing their awareness of and appreciation for closer linkages with farmers.

All MATI staff stated they used the results from the surveys and findings from village visits in their instructional programs and had improved the course offerings. The students confirmed this. The students, particularly at Uyole and Mtwara, stated they gained a great deal from participation, particularly from the opportunity to apply in practice what they were taught in the classroom.

Objective 5. Upgrade the capabilities of the agriculture Extension Service through in-service training programs. The favorable results of the information gathering and farmer training experiences are to be incorporated into the program of other MATIs. Accomplished to 4/82 - 0%; Potential by 9/84 - 75%.

This will include the extension service personnel within the service area of the MATI, but not national in scope.

The extension field staff in-service training had just started and is to be fully operational in 8/82. The information and training experiences have not as yet been incorporated into non-project MATIs. Both of these activities were intended to be implemented later in project implementation. The RADO near the Mlingano Wing is anxious that the in-service training for the 250 extension agents in the Tanga Region begin immediately. The DADO near the Mtwara Wing expressed the same intention.

In practical terms it is too early to expect any spread effect of this type. However, the Tanzanian members of the Evaluation Team (the principal of a non-project MATI and the Deputy Director of the Extension and Technology Department of the Ministry of Agriculture) both stated that the Farmer Training Project was exactly what was needed in Tanzania and would urge the Tanzania Government to expand it. Meaningful accomplishment of this goal will require that the recommendation on Extension linkage/cooperation be implemented.

Objective 6. Assist the MATI staff and students to provide technical assistance to those villages whose farmer members attend courses at the Farmer Training Wings. Accomplished to 4/82 - 50%; Potential by 9/84 - 100%.

This is being done in direct proportion to the number of Farmer Training courses held at the Wings and in the villages. It is being accomplished much more effectively in the MATIs offering the course in general agriculture. In most cases, government officials with training and experience appropriate to the Farmer Training courses offered have been utilized as instructors or resource persons. This should be fully implemented by PACD, assuming four years of contractor field efforts.

Objective 7. Identify solutions to production constraints that can be incorporated into national, regional and district development plans. Accomplished to 4/82 - 75%; Potential by 9/84 - 100%.

Constraints were identified through the initial data gathering surveys, farm visits, observation and discussions with regional, district and divisional agriculture and rural development officials and staff. Solutions for constraints were developed and farmer training was conducted.

This was followed by field demonstrations involving MATI students and staff, the farmers, and appropriate professional/technical personnel to the extent they would cooperate. Observations of farmer participation and demonstrations, plus harvest yields, will measure the degree of validity of the solutions. Evidence to date looks favorable.

Some of the constraints are external to and beyond the control of or any particular influence from the Project.

a) Pricing and marketing and production target policies with control prices that impinge upon farmer/producer incentive. This involves most cash crops such as cotton and cashew nuts. Cash crops production quotas are established without farmer participation followed by directions given from above and implemented generally by the Extension Service. Cash crops generally can only be sold to the respective marketing boards' buying centers at prices which generally do not give adequate compensation for the farmers' time, investment and risk.

Production quotas are generally planted with less enthusiasm by the farmers, resulting in corresponding low production of the cash crop and reduced time for food crops. A general practice is for the village to plant the quota

crop near the road or village giving it minimal attention. Private plots of preferred crops are then planted some distance from the village, in the bush, an additional factor reducing their productivity. Using the Extension Service to implement target quotas decreases the time available for agents' educational/training activities. They end up trying to conduct two conflicting functions. The farmers view them as enforcers relative to target quotas one day, and find it extremely difficult to view them as the farmers' friends providing guidance the next day. Policy changes should be made to provide incentives to the farmers and to justify in their own minds that the time, effort, investment and risk are worthwhile. While the solution to these constraints is beyond the control or influence of the project, proper modification of the policies would have a very favorable impact on national, regional and district plans and the subsequent production.

While such pricing, marketing and production quota policies do have their effect on the producer, the small farmers have proven ingenious in dealing with them. Their solution to production quotas is shown above. Control prices on food crops, mostly cereal grains, are generally ignored. Rather than sell all of the produce at the official buying station at the control price, much of it is sold at the public market at market force supply and demand prices. Generally, the small farmers (food crop production) have fared better than the general labor force. The prices

realized for food crops in the open, public market have generally kept up with and often ahead of inflation. These policies, however, do depress incentives and adversely affect production. The full potential production/producer performance will not be realized under policies which impinge upon producer incentives.

b) The unavailability of production inputs from seeds through fertilizers, chemicals, hand and animal equipment, tools, and tractor services. One Wing has spent considerable time locating, transporting to the area, distributing and selling animal-drawn equipment to the farmers. This solved immediate constraints, but did nothing to establish a delivery system and it detracted from meeting Project objectives. Generally the Wings made contact with regional and district officials to assist with the problem. Seed needs were made known to the Tanzania Seed Company (former USAID-assisted Seed Multiplication Project). Until a reliable production inputs delivery system is established, making inputs readily accessible to producers, the maximum potential production yields will not be realized. Solution to this constraint is external to the Project, but unless resolved national, regional and district plan results will be affected.

Conversely, the technology being presented through the Project has been and will be largely low cost production packages. The only purchased input generally required is improved planting materials. Timely and adequate seedbed

preparation and cultivation and harvesting practices, plant spacing and population and management of family and farm resources requiring no or a very minimum of financial investment make up the technological package. More and more the evidence indicates that the point of diminishing returns is being exceeded with the application of fertilizer to unimproved or just barely improving farming systems, particularly with food crops. As the farming/management systems do improve the inputs delivery system becomes increasingly important to service the increasing sophistication. Prior to the stage of development, we generally place undue importance on purchased inputs.

c) The traditional system of broadcasting maize and other food crops and haphazard planting of tree crops, decreasing labor efficiency and general yield.

Training was provided on planting in rows, spacing between and within the rows, and plant population. This was combined with proper seedbed preparation, timely planting and cultivation. The demonstrations were visibly superior to the traditionally planted fields, but not enough plots had been harvested as yet for yield comparison. It is fully expected that yields will be dramatically higher.

In one case, a farmer had produced potatoes in the past, harvesting only enough for family use. Using the low cost production input program, the same plot yielded surplus to the family's needs, permitting cash sales. Similar results were obtained from bush beans but yield measurements

were not made to accurately record the amount of increase. Another demonstration plot of bullrush millet proved so superior that the farmers collected their share, to assure they had some of the seed, the day before the scheduled harvesting!

d) Grain storage losses run as high as 30%. The saving of the storage losses would add more food to the national stocks than is realized from efforts to increase production. Two Wings, in conjunction with their advisory committees and village leaders, had developed two types of storage structures, one for loose or shelled grain and one for maize-on-the-cob storage. The various types of structures were studied and the villagers asked to identify the favorable and unfavorable aspects of each. The favorable aspects were then combined into one structure for each type of storage. These improved structures have been tested at the Wings with positive results and are ready for testing and adaptation in other areas.

e) Pre-service extension training. The MATI students, prior to the Project, were being trained in the classrooms, almost totally through lecture, with very little supervised, relevant field application of the classroom instruction utilizing good extension methods. The students participated in data collection and tabulation. This taught them the value of two-way communication with the farmers and working with them to resolve the farmers' identified problems. Before going to the villages the students were

well-briefed on the role they were to play with the farmers, and the manner in which to play it. This experience opened a whole new vista for the students giving them experience in a more effective approach to extension work for their future assignments as Extension Agents.

f) The lack of new technology to extend. Much remains to be done on this, but a promising beginning has been made at one center. Research has been an active participant in the Wing's program. The constraints have shown where research is needed to alleviate problems. Plans and resource requirements are being formulated at the research station for presentation in subsequent budgets for conducting research relevant to the farmers' needs. This includes, but should not be limited to, improvements in low-cost input packages, mixed/multi-cropping, minimum cultivation, and small farming systems.

USAID is currently designing a "Small Farming Systems Research" Project Paper which, if implemented, will dovetail very well with this need in the Farmer Training Program and further strengthen the activity in the future. Additionally, the Farmer Training Project has identified constraints on which research is required. Coordination between the projects can develop and strengthen the linkages so essential to success in both programs. Implementation of the research linkage recommendation will do much to resolve this constraint.

g) Shortage of trained extension staff. Resolution of this constraint is only being partially resolved by the two Wings/MATIs where the general agriculture course is offered. The graduates of these Wings are being well prepared for their future roles as Extension Agents. The methodology, properly implemented in all MATIs offering general agriculture, would have a very positive effect on this constraint. Similar actions should be taken on extension personnel in-service training. A larger number of well-trained and oriented extension staff would have a positive effect on production increases.

The village para-technician approach being tested at the Mlingano wing looks very promising, but should be tested longer at Mlingano before possible expansion to other areas.

h) Nutrition. Although this is not a production constraint, the effects on the farm family directly affects production. The chicken, rabbit and goat production improvement programs being conducted at two of the Wings could be incorporated in national, regional and district plans.

3. Quality and effectiveness of the project implementation and management

a. USAID

The delays experienced from PRP preparation to contract negotiations were unusually long in this Project. This is detailed in section B-1 above. Delays, generally of shorter duration, in meeting the implementation

plan initially scheduled in project papers are not unusual for a variety of extenuating circumstances. And seldom does the realization keep pace with the expectations and projections. To avoid the delays invariably experienced during project start up and the corresponding effects on implementation, the evaluators feel that all project designs should have a one-year crank up period added to the normal life of project. This would permit ordering of commodities, physical facility preparation and the array of other arrangements necessary to assure that when the implementing staff arrive at post their initial efforts are expended on project implementation rather than housekeeping chores. Unfortunately the project design did not contain a crank up period.

Progress toward accomplishing project objectives and outputs have been made since the contract was signed. Revision of the implementation plan schedule, dates and actions at the time the contract technicians arrived at post would have placed the program in much better focus. As stated in recommendation #2, the Contractor, Kilimo and USAID should develop a new implementation plan for the balance of the Project. The plan should include in greater detail the specifications to be taken than did the original plan.

The delays described in Section B-1, in addition to Contractor staffing delays, will have resulted in only two years of Contractor field effort to complete four years

of activities by the currently proposed Project phase-out time of September 1982. The project management and implementation delays until the contract was signed were the responsibility of USAID, AID/W and the TanGov. The implementation plan listed the Contractor and the TanGov responsible for housing arrangements, which it is assumed included the Training Wings' offices, classrooms and dormitories. This would appear to be a responsibility better suited to USAID than to the Contractor.

Closer Mission monitoring of the Project in the early stages could have avoided the existing multiple interpretations of the Project among the contract staff. A 2 to 3 day well-planned workshop is suggested between mission management and all contract staff to discuss the issues and arrive at a clear, single interpretation. This need not preclude a variety of approaches to problems but the methodology tested at all Wings should evolve from one interpretation of the Project purpose, objectives and outputs. More frequent Project site visits to monitor activities would have enabled Mission management to assess progress and identify problems, and formulate corrective actions sooner.

The uncertainty on the part of the contract staff regarding Project phase-out or continuation adversely affected staff morale, and to a degree slowed up Project implementation. "If the Project is terminating in September there is little reason to initiate an activity that won't be

finished by then," was a general attitude expressed by the contract staff. The contracting agency itself has been operating under uncertainty relative to the duration of the program. The project paper specified a four-year program with objectives and outputs which will require a minimum of four years to achieve. The contract was negotiated and signed for two years, but specified four years of team members technical services and four and one-half years of team leader services.

One of the Contractor's team members has completed two years at post. Three will complete two years in August and September. The team leader is 7 months into a second tour. All are wondering whether they should be looking for other jobs, or whether the Project will permit return to post. One of the team members, largely due to this uncertainty, has accepted another job. A second member is actively seeking another job. Members are reluctant to initiate new activities that cannot be completed before September, and are wondering if they should begin phase-out activities. Further adverse effects upon the Project will be in direct proportion to the time required to reach a decision on the future of the program. This issue should be clarified at the earliest possible date.

b. Contractor

The Contractor's management and implementation has been adequate to result in considerable progress in the Project. A great proportion of effort and time has been

required for housekeeping matters such as housing and other facilities arrangement, getting the staff on-board and settled in, arranging for and often delivering commissary and other supplies, etc. This has been necessary, but may have contributed to the deficiencies identified below.

Contract management needs to play a much more positive role in providing guidance and coordination among the field staff. A firmer role is essential in the Kilimo regarding linkages between the Training Wings, Extension, Research, and the farmers, Tanzania staff at the Wings, and other support to the Project. More frequent meetings of the Ministry Advisory Committee appear necessary. Discussions should involve policy, coordination with other Ministry departments, budgetary and other support follow-up to assure that decisions of the committee are implemented.

The contractor, at the beginning of the Project, should have assured that all staff shared a single, rational interpretation of the Project and were properly oriented on its purposes, objectives and outputs. Misunderstandings and multiple interpretations two years into the project have not fostered maximum progress. Corrective action is needed. Distance, travel conditions and the difficulty of communications may have played a part in this. The impending arrival of the transceiver radios for each site should alleviate many of the problems due to communications.

Three of the Wings have been lax and need to improve both the quantity and quality of activity/methodology documentation which the Team Leader should be reviewing, synthesizing, standardizing to the extent possible, and reproducing. Subsequently those practices/methodologies proving successful should be printed into one or more manuals as appropriate. This can be one of the major contributions of the Project. A list of potential subjects is included in Annex F.

Six participants were sent to the U.S. for training, four to West Virginia University and two to North Carolina Agriculture and Technology University. Two completed B.S. Degrees at WVU and returned. Two remained at WVU to complete master's degrees. The returned participants from WVU felt their training was very good and was relevant to their positions and responsibilities. The two returning from NCATU felt they might have received better, more relevant training at other universities.

Three of the returned participants have been posted to three of the Wings. One of the returned participants was posted as a tutor at a non-project MATI, a decision with which the Contractor agreed. Concurrently the Mtwara wing has been operating with an extreme shortage of Tanzanian staff. Both Contract and Mission management should have insisted that people trained with Project funds be assigned to the Project.

Contract management needs to gain better understanding of how Kilimo prepares budget requests and to play a more positive role with the TanGov regarding budget support. At the time the last Kilimo budget was prepared and ready to go to the treasury, Kilimo indicates that the Project's budget request had gone astray, so the amount allotted was the same as for the previous year. During the last year a supplemental budget request was made, but with inadequate description of the purpose for which it was needed. Investigation determined that the amount previously allotted had not been completely used.

Assuring that the project is funded is the joint responsibility of the contractor and Kilimo--both should take collaborative and follow-through actions in the future.

4. Appropriateness and effectiveness of the project's farmer training and short courses and curriculum

There was no opportunity during the evaluation to observe a farmer training course being conducted either at the Wings or in the villages; however, observations of the demonstration plots placed in the villages were evidence that the training programs were effective, that they were conducted at the farmer's level of comprehension, and on the problems they identified and in which they were interested--otherwise, the enthusiasm of the farmers would have been lacking. The first phase of demonstrations, without exception, were placed on the village communal farms. This

exposed all farmers to them and virtually assured their participation in the full seasonal cycle of skills and practices, due to the cultural tradition of full village involvement with the communal farm.

Interviews with farmers, MATI staff and students and government officials confirmed that the farmers were largely responsible for implementing the new technology following teaching. Responses from randomly selected farmers in each village gave the Wings good marks for dealing with their problems and teaching them how to farm better.

The Wings are in various stages of preparing, revising, finalizing, and reproducing the short course curricula used in the courses. It is essential that more emphasis be given to this objective, and that the finished product be distributed to the other Wings, other MATIs and Kilimo for distribution to the Extension Service. Subsequently they should be compiled in a bound manual. Samples of the course curricula are attached in Annex E.

C. Project Site Selection

Table 3: Site Selection

Project sites of Nyegezi and Mlingano, potential
for achieving objectives by PACD of Sept. 1984

	<u>Nyegezi</u>	<u>Mlingano</u>
1) FTW established and functioning	40%	90%
2) Technical Assistance provided by MATI at villages at FTW	40% 20%	40% 30%
3) Students and staff trained in data collection in data analysis	80% 10%	80% 10%
4) Info collecting instruments developed	70%	80%
5) Planning Papers	30%	70%
6) Farmer training techniques material	40%	80%
7) Modified training materials for MATI for farmers	20% 25%	20% 60%
8) Improved agricultural practices	50%	80%
9) Improved input packages	40%	90%
10) Stronger linkages with Research	20%	90%

The fact that neither of the MATIs offers training in general agriculture (future Extension Agents) minimizes the impact of the Project at these sites. At the time of the project design, however, Nyegezi was offering general agriculture training. While there is some value of the Project exposure to land use planners and irrigation specialists, Nyegezi does not appear to justify the cost of the inputs, and the approaches to the villagers are not sufficiently different from those being tried at other MATIs.

Mlingano, even though it does not offer training in general agriculture, offers a unique opportunity to ally its training wing component with the West German project (TIRDEP) in agricultural extension. The latter project is making a major effort using the Benor Train-and-Visit (TAV) system which attempts to supplement an undermanned Extension Service with large numbers of para-technicians who are members of the target villages. FTW is providing the vital training dimension to the TIRDEP Project for the paratechnicians and is intimately involved in their village demonstrations. Additionally, the RADO and DADO participate in the FTW training and have expressed a desire to establish frequent and regular in-service training for their regular Extension Agents at the FTW. The Mlingano MATI also boasts close collatoration with the adjacent research station. Thus, the continuation of the Project at Mlingano can make some very significant contributions to the Project's comparative results.

D. Host Government Support

1. Extent to which TanGov support has facilitated or impeded implementation and achievement of Project objectives

Staff assignments: Delays in appointing Tanzanian staff, transfers, and departures caused serious delays in implementation of many Project activities at most of the sites. This has been the most serious problem in the program, and is still being felt at Mtwara where only 1 staff member of a promised 3.5 are at post. This, of necessity, causes a combination of excessive burden on those assigned, a reduced program, and diminished on-the-job training for Tanzanian staff. The end result is a lesser achievement of Project objectives.

The personnel gaps were substantially relieved, except at Mtwara, with the return of the first four participants from U.S. training. As discussed elsewhere, one of the four was assigned to a non-project MATI with Contractor concurrence, leaving the Mtwara wing seriously short of Tanzanian staff. The contract staff reports that the Tanzanian staff assigned to the Wings are competent, cooperative and enthusiastic about the program. The problem has been quantity rather than quality. This should be fully resolved by June 1982.

The MATI staff generally has cooperated and supported the Project fully. Cooperation and support from Extension and Research was slow in starting and still requires closer linkages, even though some progress is

evident. Had the Project Paper design included participation of Research and Extension, their roles in and commitment to the project would undoubtedly have been better.

2. Operating funds

The log-frame indicates an average of \$28,000 per wing to be committed by the TanGov for the operating budget. Actual funds made available were about 20% of the pledge, even after repeated applications for funds. This resulted in excessive time being spent on stop-gap solutions, juggling of planned activities, and curtailment of many. There is indication that this situation will improve somewhat in the future.

The Contract staff and Tanzanian staff will be hard pressed to meet all of the Project objectives as a result of these shortcomings.

3. Physical Facilities

Except at one wing, the facilities were ready within 2 to 3 weeks after arrival of the contract staff. All facilities have been provided as agreed upon and are in operation.

E. Project Continuation: Need for Continued Presence of U.S. Technician at Each MATI

Mbeya - The early effort of the technician has focused on providing many of the needed inputs already demanded by farmers. Lack of local staff initially impeded the start of full-scale farmer training, syllabi modifica-

tions, and in-service training. A Contract technician should be continued at this MATI.

Mwanza - The elimination of the certificate course in general agriculture (future extensionists) cuts deeply into the value of the Project at this MATI. The weak relationship and lack of proximity of the research facility at Ikiriguru lessens the opportunity for developing a strong research tie-in to the project. Meaningful results are probably unattainable by the PACD. The full-time presence of a Contract Technician cannot be justified.

Mlingano - Despite the lack of general agriculture students at the MATI, the Project has a unique opportunity to participate in and compare the T-A-V approach to inducing improvement in farm practices. The village organization is involved as well as RADO, DADO and a committed research institution. A Contract Technician should be continued at this MATI.

Mtwara - No returned participant has yet been assigned to this Wing. An Extension Agent has filled in nobly as the counterpart to the American technician. With the well organized program in place, a new staff member could probably maintain the operations after a few months of on-the-job training, if the present Extension Agent continues in his position. A contract technician should be continued for 4-6 months after a BSc counterpart is assigned (planned for May 1982).

As the technician withdraws from full-time activity at the Wing, the Contractor should utilize him in preparing the manuscripts from the entire Project for publication and further utilization. He might also be available for periodic assistance to other MATIs.

Table 4: Project Budget

Estimated AID budgetary support costs under Option 3, and additional for Option 4.

	OPTION 3 Each of 3 Wings Supported by Project		OPTION 4 (additional) Each of 2 Additional MATIs added by Kilimo	
	FY83	FY84	FY83	FY84
1. Technical Assistance				
A. Rural Dev. Specialist	72,000	72,000		
B. External Support	28,000	28,000		
	100,000	100,000		
2. Commodities	9,000	7,000	20,000	10,000
	9,000	7,000	20,000	10,000
3. Local costs				
Intern Travel & vehicles	7,500	7,500		
FTW operations	1,000	600	1,500	900
Inputs for Farmer Training	3,500	1,800	3,000	2,500
	12,000	9,900	4,500	3,400
	<u>121,000</u>	<u>116,900</u>	<u>24,500</u>	<u>13,400</u>
x 3 wings	<u>363,000</u>	<u>350,700</u>	x2wings <u>49,000</u>	<u>26,800</u>
Headquarters - DAR				
1. Technical Assistance				
A. Tecun Leader	72,000	72,000		
B. External field support	28,000	28,000		
	100,000	100,000		
2. Other costs				
A. Language Trg.	-	-		
B. Computer Support	15,000	15,000		
C. Admin. Asst.	6,000	6,000		
	21,000	21,000		
3. Participant Trg.				
U.S. & 3rd country				
6 weeks x 2	14,000			
	14,000			

	OPTION 3 Each of 3 Wings Supported by Project		OPTION 4 (additional) Each of 2 Additional MATIs added by Kilimo	
	FY83	FY84	FY83	FY84
4. Local costs				
Transport, internal	7,000	7,500		
Office Supplies	1,000	1,500		
		8,000		9,000
5. Documentation (WVU)	20,000	30,000		
		20,000		30,000
Total		526,000		510,700
10% contingency		52,600		51,070
Grand Total U.S.		578,600		561,770
			49,000	26,800
			4,900	2,680
			53,900	29,480

E-2. <u>TanGov Inputs</u>		Year 3	Year 4	If 2 additional MATIs Year 3	Year 4
1A.	9.6 man years	33,600	33,600	22,400	22,400
1B.	12 man year	12,000	12,000	8,000	8,000
2A.	Classrooms, offices	13,200	13,200	8,800	8,800
2B.	Housing	12,000	12,000	-	-
3.	Operating Exp 600,000 =	30,000	30,000	20,000	20,000
4.	Participants	3,000	-	-	-
		<u>72,800</u>	<u>100,800</u>	<u>59,200</u>	<u>59,200</u>

IV. OPTIONS

Scenario No. 1 -- Project terminates on September 30, 1982.

Tanzania staff at one or two of the MATIs might be able to continue the work already underway and continue parts of the program into the future with some added support in staff and funding by the TanGov, i.e., Tanzanian staff would be required to replace the U.S. technicians now at the MATIs; funds for transport and recurrent costs would need to be increased.

The Americans would need to give full attention to analyzing, refining and documenting their experiences and findings to date with the explicit indication that any conclusions are based on very limited trials, and usually, in one setting.

Synthesized generalizations could not be drawn after this short experience. Some classroom topics, either at the Institutes or in the Training Wings, could be finalized for inclusion in future training.

There would be some rather intangible but significant residual effects of the Project among the hundreds of general agriculture students, tutors, other staff members and some villages which have been exposed to a more grass roots and humanistic interpretation of the interrelationship of research-training-extension and the farm family. Whether this new understanding is as yet strong enough to survive is questionable.

The return on the U.S. investment in the Project would be minimal in terms of the outputs. The benefits would be local insofar as farmers' attitudes and practices are changed and research-extension-training linkages are forged. Any country-wide benefits would be evident in the new extension agents who will have been graduated during the two years at the Institutes, only if the Extension Service hierarchy changes attitudes and modes of operation to adopt the new concept.

Scenario No. 2 -- Project extended for one year, to September 30, 1983. Assuming that most of the recommendations of this evaluation are implemented, this scenario would represent a compromise which should permit more output, both in quality and quantity. While permitting a more gradual and better planned phasing-out of U.S. support, it will permit an additional year of implementation and should promote further development and refinement of the experiences at the FTWs. These findings could be used on a much wider basis in Tanzania and probably regionally in rural development programs. In-service training programs, syllabi and curricula changes and additions, experiences in farmer approaches, design and interpretation of village surveys, teaching "packages," and crop "packages," all could be finalized, even though any synthesization of consummate experiences will not have been field-tested sufficiently to prove their validity.

There would be yet another year's output of new Extension Agents, and another year of testing of Research and Extension ties with the FTW activities.

At an estimated lower annual cost for the U.S. support for this additional year, this option would appear more rational than Scenario No. 1 in terms of returns per U.S. dollar of investment and in terms of future Tanzanian support of AID-assisted projects.

Scenario No. 3 -- would be the extension of the Project for its full term of two additional years to September 1984. The Project was originally designed for a 4-year term and any shortening of its life would necessarily sacrifice some of the outputs, either quantitatively or qualitatively. Scenario No. 3 would be the implementation of the recommendations being offered in this report and is the consummation of the original project with design modifications suggested as the result of experience and changing circumstances. In the two additional years, it is expected that the Project will identify production and management constraints, plus approaches and tactics which would be usable in the Farming Systems Research Project being considered by the USAID.

Scenario No. 4 -- Expansion of Project. In the event that an expansion of activities is a possibility, the recommendations indicate that two U.S.-trained BScs would be available to implement operations at additional MATIs; the Kilimo might want to place one of them at Nyegezi to continue activities already started, or both could be used at addi-

tional MATIs. On the AID side, initial commodity support at the new MATIs should be considered to facilitate start-up. The three Contractor field technicians could assist new Wings in start-up operations on a periodic visit basis.

If this option is selected, it could lead to a much more rapid diffusion of positive outputs of the original Project; at the same time placing additional responsibilities on Ministry headquarters and MATI staff. Kilimo has expressed intent at top level to expand the program. The budgetary implications of this option have been projected for two years in the budget section E-2.

V. DETAILED RECOMMENDATIONS

Recommendation No. 1:

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

Continued delay in making a decision will yield commensurate lower output of the Project.

The Project was designed for a term of four years and was overly ambitious in the expected outputs. Delays in obtaining approval of the Project Papers, contract negotiations, personnel recruitment, building construction and commodity procurement have made a shambles of the originally-planned implementation schedule and cost projection. The unforeseeable military involvement of the host government took an appreciable toll on its financial contribution to the Project.

Despite these obstacles a very substantial investment has already been made in terms of finances and human effort by both governments, and many of the outputs are within reach. The most valuable and long-lasting benefits, in the opinion of the evaluators, cannot be realized in less than four years of operations--and most of these outputs remain worthwhile as when conceived in the original project design: specifically, the design and testing of village survey

instruments, the testing of several approaches in village extension work, the development and testing of short courses for in-service training of extension workers, improvement of training course curricula at the MATIs, systematizing the relationship of research, extension, training and farmers and publication of findings.

The value of these outputs transcends the needs of the host government in that the Project should obviate the need for similar experimentation in other countries of Africa.

Recommendation No. 2:

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

The log-frame is discussed in detail in Section A-2 of this report.

Recommendation No. 3:

Phase-out Contract support of Project activities at MATI Nyegezi.

Details of the activities at Nyegezi are described in C-1 and in Annex G in the Appendix and in other sections of this evaluation report. In essence, the team feels that the situation at Nyegezi offers very little opportunity to

contribute findings and outputs which are meaningful to the Project's purpose. Given the limited remaining life of the Project and the present constraints on resources, the inputs of personnel and operating funds can be put to better use at the other three MATIs. Moving the Project to an entirely new MATI is not feasible for the two remaining years. If Kilimo decides to continue its operations at Nyegezi, it may be advisable for one of the Contract technicians to provide occasional on-site guidance.

Recommendation No. 4:

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

As stated elsewhere in this report, military demands took priority over other demands on the country's financial resources after the Project Agreement was made. As a result, the funds made available to the Project by the TanGov were only about 20% of the amount originally planned. The Project has managed to survive at a level of austerity but many activities, particularly training at the Wings, had to be substantially cut back. Now, halfway through the Project, it is time to move into higher gear in order to more nearly comply with the projected outputs--and to determine to what degree the host government is willing to continue the Project in the absence of outside assistance. Project officials estimate that a minimum of 300,000

shillings will be needed per year to operate the three wings in the third year. Projections for the fourth year will undoubtedly be higher as the AID support withdraws.

A few personnel vacancies still exist and two participants have yet to return from the U.S. With their return, the assignment of all six participants and a very few additional people will satisfy the present needs. Recommendation No. 9 below, discusses further personnel considerations.

Recommendation No. 5:

The Ministry of Agriculture should provide a formal plan and accord which will officially define the present and future roles of the Research and Extension Departments in the furtherance of the Project objectives.

The evaluators have observed at all four MATIs and at Kilimo headquarters that the present linkages of Research and Extension with the Project have evolved quite informally and have been largely dependent upon the personal rapport between the people involved, rather than official commitment to the Project. Research and Extension officials should have been completely incorporated at the planning stage of the Project and in the implementation plans. It may have been appropriate to include an observational training trip for an upper level official of each department to U.S. land grant universities where the Research-Training-Extension linkage is exemplary (see Recommendation No. 10 below). The collaboration which has developed in the Project is a com-

pliment to the officials involved but will remain tenuous unless it is formalized.

The methodologies and approaches being tested to date by the Project are promising and warrant the four years initially envisioned for the Project. The final standardization of the various linkages could well serve as models for the Ministry of Agriculture's modus operandi.

Recommendation No. 6:

Upon the termination of activities at Nyegezi, reassess the transport and other commodity needs at each of the other three Wings, reapportion the resources at Nyegezi and those still in storage according to need, and immediately order the spare parts required to keep the necessary vehicles and motorcycles in service for the duration of the Project. (See Recommendation No. 7) All vehicles and motorcycles should remain under the control of the Contract Technician at each site and be used only for project purposes.

Transport use, maintenance, and fuel consumption have presented serious problems on almost a daily basis at most of the MATIs. These problems won't go away. The recommended action will minimize the problems for the duration of the Project but the Wings must initiate commensurate measures to assure better maintenance by the users and to prohibit unofficial use of the transport. Eventually, the problems will be inherited by the MATI principals.

Recommendation No. 7:

Readjust the remaining U.S. commodity inputs to eliminate those items which, because of non-arrival, are deemed least useful; and augment the amount for office supplies and spare parts for Landrovers and motorcycles. Eliminate commodities originally planned for possible expansion of the Project unless option scenario 4 is implemented.

This will need to be done on an item-by-item basis. The cameras, long overdue, can still be useful in producing teaching aids, but one per Wing may be sufficient. An indication of the revised budget appears in section E-2 of this report.

Recommendation No. 8:

Contract Team Leader and Technicians should begin immediately to refine reports on accumulated experiences, basis survey instruments, topical lesson plans, in-service training presentations, demonstration guidelines, and related information so that publications can commence in manual form. Contributions by Tanzanian staff should be encouraged. The contractor should earmark sufficient funds for publication of the documents. The printing run should accommodate distribution to Tanzanian development agencies as well as AID interests.

One of the most usable and enduring end-products of the Project should be the documentation of its experiences, even if negative results may have been obtained. Besides the

sociological aspects of the various extension approaches which will have been tried, there are many manual-types of publications which can adapt extension methods to the Tanzanian situation. Short-course lesson plans for farmer training, curriculum inserts for student training, method demonstration models, and sample in-service courses for Extension Agents are some of the types of leaflet data sheets, and handbooks which should result.

It is not too early to plan the intended publications. A list of possible topics appears in Annex F. The experiences gained, for example, in designing the instruments and collecting the basic survey information, can be finalized now. Some of these outputs are expected from the Project regardless of its duration. The quantity and quality of such papers will be affected, obviously, by the life span of the Project. The services of the U.S. technician at Mtwara might well be used to this end as the Tanzanian staff assumes full control of the FTW.

Recommendation No. 9:

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

As soon as the two remaining participants return to Tanzania (ETA late May 1982) all six should be assigned to the Project, that is, two to Mtwara, two to Mlingano and two to Mbeya. After serving for a year (or at least a complete growing season) each man should begin a scheme of visitations to the other two MATIs, for one month each.

The six participants were trained in order to take lead positions in the Project. Prolongment of their training and personnel shortages have precluded their postings as originally planned. With an eye toward the future spread of the Project by the TanGov, these men should become thoroughly familiar with operations and progress to date.

A suggested scheduling guide, on the following page would provide the orientation without interrupting programs at any of the MATIs:

Table 5: Returned Participant Posting

	<u>ASSIGNMENT FOR 1ST SEASON</u>	<u>1ST MONTH ROTATION</u>	<u>2ND MONTH ROTATION</u>	<u>3RD MONTH ROTATION</u>	<u>4TH MONTH ROTATION</u>
Participant #1	MATI #1	MATI #2	MATI #3	Return to	MATI #1
Participant #2	MATI #1	-----		MATI #2	MATI #3
Participant #3	MATI #2	MATI #3	MATI #1	Return to	MATI #2
Participant #4	MATI #2	-----		MATI #3	MATI #1
Participant #5	MATI #3	MATI #1	MATI #2	Return to	MATI #3
Participant #6	MATI #3	-----		MATI #1	MATI #2

By the time the rotational visits have been completed, the Project leadership shall have determined the most appropriate permanent postings, providing one man at each of the three Project Wings, one man for the headquarters office, and two would be available for new Wings if necessary for Project expansion.

Recommendation No. 10:

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

The evaluators feel there is much to be gained by exposing decision-makers of these vital agencies to models of effective linkages. Having witnessed "method" and "result" demonstrations, they will be in a better position to adapt the results to Tanzanian conditions. The team suggests visits to at least two U.S. land grant universities and a third-country mode

Recommendation No. 11:

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

In conjunction with the commodity support for Project expansion, and Kilimo's expressed intention to expand activities to other MATIs, and the probable availability of

one or two of the returned participants as counterparts, the WVU technicians would help to firmly establish the new Farmer Training Wings. In so doing, the benefits of the Project experience would be further spread and institutionalization would become more pronounced.

In concluding these recommendations, it should be noted that some of these points were also touched upon in two previous evaluations of the Project: "A Report on Four Tanzania MATI Farmer Training Wings" by Bruce M. Lansdale, April 1981; and an evaluation by the USAID, dated July 1981.

VI. NARRATIVE SUMMARY

Overall, the Project is assessed as having achieved well above average success, for the first two years of field effort, when compared to other projects in Tanzania. Rather than the major focus of the Project purpose, increasing small farmer production would have more appropriately been one of the outputs, but minimally measurable during the 4-year Project. It should also have been viewed as a pilot project to design, apply and test methodology for changing farmers, training institutions, and agriculture service personnel attitudes, practices and approaches, and improving agriculture services.

In the final analysis, the factor that will measure the success of the project will be the increased farm production and improved rural welfare. However, achieving this on a broad scale requires that the methodology encompassing the prerequisite actions be developed, field tested, modified, retested, and proven and applied at additional sites.

The Project generally has made respectable progress on changing attitudes and methodology at the MATIs and in the surrounding villages and farms. The data collection instruments identified the farmers problems. The farmers felt that they had participated in the discussions, had identified their problems and prioritized actions, and were involved in decisions affecting their livelihood. They viewed the subsequent training as being relevant to the constraints they face and the circumstances under which they

earn their livelihood. That the program was effectively changing the farmers attitudes was evident in the interest they exhibited in the demonstrations and training, the enthusiasm expressed for the new approach, and the voiced intention to apply the practices and input packages on their private plots if the harvest yields were anywhere near expectations.

The students (pre-service extension training) and tutors participated in designing and field testing the data collection instrument, interviewing farmers and collecting the data, tabulating and interpreting it, and identifying the farmer s' constraints and felt needs. They gained practical field experience which they could identify as being very responsive to the country's agriculture development problems. This was reinforced by the improved classroom instruction resulting from their tutors incorporating the findings in their course curricula. Working with the farmers in the villages to apply the new production packages and practices through follow-up visits expanded the students' experience and appreciation for the approach. The expressed opinions that their training had improved, and that the approach and methodology was far better because it achieved results, indicated changed attitudes toward extension work and farmers. They were beginning to realize that illiteracy and stupidity are not synonomous, and that communicating and working with farmers to solve their problems achieved results never realized through the one-way communication, directive type of approach.

The MATI tutors gained similar experience, and by incorporating the findings in their instruction provided training more relevant to the problems the future Extension Agents will be expected to resolve with the farmers. For most tutors this was their first such experience in contacting and cooperating with farmers.

The in-service training had just begun (it had not been anticipated in workplans until the third year of the Project). It is assumed this activity will have similar impact upon the Extension Agents. Unfortunately, during project design, neither the Extension Service nor Research was actively involved, nor consulted relative to the role they should play in the Project. This has created a gap in a very important aspect--close linkage with and cooperation among Extension, Research, Training and the farmer. Corrective action by AID and the TanGov will resolve this problem. This linkage, actively pursued and implemented, is expected to contribute much towards meeting most of the objectives if the Project is given its planned four-year life.

ANNEX 1

Farmer Questionnaire

Questionnaire for Students at Training Centers

Discussion Topics with Contractors Staff

Questionnaire for Returned U.S. Participants

FARMER QUESTIONNAIRE

1. Age, marital status, number of children
2. Name of village
3. Served by which MATI?
4. How did you first become involved in the MATI activities? When?
5. What do you think is the government's purpose for this Project?
6. What are your most serious problems in farming? Does the MATI program discuss these problems with you and try to help you resolve the constraints? Do the recommendations make sense to you? Are they applicable to your circumstances?
7. What new ideas have you gotten from this Project? Did you accept any of them?
8. If a new practice was presented, were you able to get all of the necessary inputs that were recommended? (Tools, seeds, chemicals, etc.)
9. What ideas have been presented which you did not accept? Why?
10. Have you been given any training at the MATI? What subject? For how long? Have you been given any training in the village? What subject? How long?
11. What additional help would be useful for you and your neighbors?
12. How often are you visited by someone from the MATI? Is it always the same person? What is his/her (their) name?
13. What does he/she (they) do when they come to your village?
14. Does anyone else from the Government come to help the farmers? Who?
15. Are the wives or children involved in any MATI activities?
16. Did anyone from the MATI ask you for information about your farm work at the beginning of this program?
17. Have they done this more than once? If yes, do you know why?
18. Do you think that the MATI people have tried to help you with any of your problems?
19. Do you plan to continue to take part in the MATI activities? Why or why not?
20. Any suggestions or comments?

QUESTIONNAIRE FOR STUDENTS AT TRAINING CENTERS

1. How did you come to be selected for training here?
2. What do you expect your work to be when you complete your training?
3. How long have you been here?
4. How much longer to go?
5. Do you feel that your training here will be adequate for your job?
6. Did you participate in gathering the basic village information?
7. What type of information did you gather?
8. What was the purpose of this?
9. What type of work have you done with farmers since then?
10. Who determined what practices should be taught to the farmers?
11. Have the farmers accepted any of the practices? Which ones?
12. Do you feel that the farmers really want this help? How do you know?
13. How often do you visit a village? What determines the frequency of visits?
14. How are the farmers organized?
15. Do they ever ask you questions which are beyond the topic you are working on?
16. Do they ever ask questions for which you don't know the answer? If so, how do you handle it?
17. Are the methods being taught to you different from what you originally expected? If so, in what way?
18. What type of information do you think you should have more of, in order to be more effective with farmers?
19. Do you think your instructors are, in general, doing a good job of teaching?
20. How are you able to measure whether farmers have improved their agriculture as a result of the work being done in the villages?
21. Now that you are involved in agricultural extension work, do you think you will like it as a full-time job?
22. In the course of your studies at the MATI, how many times have you visited research stations? What did you see or do there?
23. Do research people visit the MATI? What do they do there?
24. Do research people work with you on the village projects? How?
25. What is your relationship with the Bwana Shamba?

DISCUSSION TOPICS WITH CONTRACTOR'S STAFF

- I. Technical Services Provided:
 - A. Methodologies for gathering information on small farms
 - B. Utilize this information to develop small farmer training program at MATI
 - C.1. Test farmer acceptance of new packages
2. Test efficacy of extension and training approaches in transfer of the technology.
 - D. Follow-up evaluation of farmer training programs
 - E. In-service training of extension personnel
 - F. Assist MATI staff in providing technical assistance to farmers at villages.
 - G. Identify solutions to production constraints which can be incorporated into national, regional, and district development plans.
- II. Outputs
 - A. Farmer Training Wing established at MATI.
 - B. Technical assistance being provided by MATI to villages, including training at Farmer Training Wing and villages.
 - C. Staff and students trained in data collection and analysis.
 - D. Simple information-gathering instruments developed for use in research, training, and extension
 - E. Planning Papers developed.
 - F. Farmer Training techniques materials developed.
 - G. Modified MATI and Extension in-service training materials.
 - H. Improved agricultural cultural practices disseminated.
 - I. Improved production input packages identified and available.
- III. What evidence of improved practices adapted and increased food production? Changed attitudes?
- IV.
 1. Chief strong points of Project?
 2. Main weaknesses?
 3. How has research been involved in MATI activities?

4. How has extension been involved in MATI activities?
5. What other government officials or donors have been and how have they been involved in MATI activities?
6. Comments on MinAg support.
7. Comments on USAID support.
8. Comments on WVU support from team leader. From university.

QUESTIONNAIRE FOR RETURNED U.S. PARTICIPANTS

1. What was your position when you were selected for training?
2. How were you chosen for training?
3. What is your position now?
4. When did you start training?
5. Where did you study?
6. When did you complete your course?
7. Who selected the subjects which you studied?
8. Did you have trouble adjusting to the University in the U.S.?
9. If you had problems in the U.S., whom could you go to for help?
10. In general, were you satisfied with the training you received?
Do you think it was helpful for your work in Tanzania?
11. What would you change if you had it to do over again?
12. What were the most useful parts of your training? What least useful?
13. What is your opinion of the Farmer Training Program now being conducted by the MATIs? Do you think it will be successful?
14. What changes do you think might make the MATI program more successful?
15. What are the main benefits which have resulted from having an American technician here at the MATI?
16. How soon will this project have developed to the point that you and your staff can continue it without expatriate assistance?
17. How have your ideas of training farmers changed since before this project started?
18. Any comments?

ANNEX 2

Household Survey

Group Interview Format for
Farmer Training Short Course Participants

Village Survey

HOUSEHOLD SURVEY

INSTRUCTIONS

It is not necessary to ask all the following questions at one sitting; it is recommended that you ask a few questions (or only parts of the questionnaire) of a farmer at one time. Also, if you read the questionnaire carefully each day before leaving your house and select carefully similar kinds of questions to ask during the day, you will find interviewing less tiresome and more natural than if you carried the entire questionnaire with you and asked all the questions of a farmer at one time.

PURPOSE OF THE SURVEY

This questionnaire is to be used as a guide in helping you understand the background of the farmers, their farming practices and problems and the kinds of help they might expect of you. This questionnaire will also be used to evaluate how carefully you have studied your village; so it is important that all the information is gathered by the end of your village field practical.

QUESTIONS

1. Biographical Information

1. Name of village _____
2. Name of farmer _____
3. Name of ten cell leader _____
4. Age of farmer _____ years
5. Sex of farmer (tick) male _____ Female _____
6. Marital status of farmer (tick) Married _____ Single _____
7. Birthplace of farmer (tick) _____ in this village
 _____ in different village, same district
 _____ in different village, different district.
8. Name of wife of farmer _____
9. What is the size of the farmer's family? _____ Wife (number) _____
 _____ Husband _____
 _____ Children (number) _____
 _____ 0 - 5 years old

6 - 12 years old

13 - 17 years old

TOTAL in family (Kaya)

Boys living at home.....

Girls living at home.....

Relatives living at home.....

10. How many years has the farmer lived in this village? _____ years

11. How many years has the farmer farmed _____ years

12. Does the family have a source of income other than farming? YES _____ NO _____

If YES, list family members and note income activity. _____

13. What kinds of education has the farmer received?

Primary: (name highest level attained) _____

Secondary: (Name highest level attained) _____

Adult Education or Literacy: (describe) _____

14. What posts has the farmer held in this village (tick)

- Ten cell leader
- position in cooperative
- position in local MAFU/CCM
- member of a village committee
- position in MAFU
- Position in UWT

3. Agricultural Production Information

1. Do you farm a shamba in another village? YES _____ NO _____

2. What kind and number of livestock do you own?

Number of said. water, pest or disease problems

- a) Cattle
- b) Dairy
- c) Goats
- d) Sheep
- e) Pigs
- f) Rabbits
- g) Chickens
- h) Ducks
- i) Donkey
- j) Oxen

3. What kind of mashamba do you farm in this village? (tick)

- a) Shamba la Mijiji YES _____ NO _____
- b) Shamba la begu kwa begu YES _____ NO _____
- c) Shamba la Bimwali YES _____ NO _____

4. How many mashamba ya Mijiji are there in the village, what crops are grown?

- a) Number of mashamba ya Mijiji
- b) Crops grown,

Q.5. How many mashamba ya begu kwa begu are there in the village, what crops do you grow, and what size are your plots?

- a) Number of mashamba ya begu kwa begu

Q.5 (b) List below information from this or last year's growing season (1980) about crops grown in mashamba ya begu kwa begu, the percent of land area given to each crop, the size of each shamba, the distance from the farmer's house, and note whether the shamba is irrigated.

Shamba 1

Shamba 2

Shamba 3

Crop _____

Crop _____

Crop _____

Shamba 2

Shamba 2

Shamba 3

Crop _____

Crop _____

Crop _____

Crop _____

Crop _____

Crop _____

Size of shamba _____ ha

Size of shamba _____ ha

Size of shamba _____ ha

Distance _____ kms.

Distance _____ kms.

Distance _____ kms.

Irrigated YES _____ No. _____

Irrigated YES _____ No. _____

Irrigated YES _____ No. _____

6. How many shamba you have on your farm and give information from this or last year's season as to crops grown in each shamba, the per cent of land area given to each crop, the size of each shamba, the distance from your house, and note whether the shamba is irrigated.

Shamba 1	Shamba 2	Shamba 3
Crop _____ %	Crop _____ %	Crop _____ %
Crop _____ %	Crop _____ %	Crop _____ %
Crop _____ %	Crop _____ %	Crop _____ %
Crop _____ %	Crop _____ %	Crop _____ %
Crop _____ %	Crop _____ %	Crop _____ %
Size of shamba _____ ha	Size of shamba _____ ha	Size of shamba _____ ha
Distance _____ kms	Distance _____ kms	Distance _____ kms
Irrigated YES _____ NO _____	Irrigated YES _____ NO _____	Irrigated YES _____ NO _____
Shamba 4	Shamba 5	Shamba 6
Crop _____ %	Crop _____ %	Crop _____ %
Crop _____ %	Crop _____ %	Crop _____ %
Crop _____ %	Crop _____ %	Crop _____ %
Crop _____ %	Crop _____ %	Crop _____ %
Crop _____ %	Crop _____ %	Crop _____ %
Size of shamba _____ ha	Size of shamba _____ ha	Size of shamba _____ ha
Irrigated YES _____ NO _____	Irrigated YES _____ NO _____	Irrigated YES _____ NO _____

7. Do you have any permanent staff or out wages? (List) _____

8. Is there enough food and production from your shamba for your family food needs each year? YES _____ NO _____

9. What are the most serious problems in the production of your crops?

Practice	Write the crops and describe the problems
a) Land preparation	_____
b) Planting	_____
cc) Weeding	_____
d) Fertilizing/Watering	_____
e) Insect/pest control	_____
f) Disease control	_____
g) Harvesting	_____
h) Cleaning/Grinding	_____
i) Storing	_____
j) Marketing	_____
k)	_____

10. What might be done to help solve some of the above crop production problems? _____

11. How have the crop harvests been the past two years compared to normal harvest years? (list crop, yield comparison, and give reason).

Crop	BETTER		WORSE		Reasons
	THAN NORMAL	NORMAL	THAN NORMAL	NORMAL	
a) _____	_____ or _____	_____ or _____	_____ or _____	_____ or _____	_____
b) _____	_____ or _____	_____ or _____	_____ or _____	_____ or _____	_____
c) _____	_____ or _____	_____ or _____	_____ or _____	_____ or _____	_____
d) _____	_____ or _____	_____ or _____	_____ or _____	_____ or _____	_____
e) _____	_____ or _____	_____ or _____	_____ or _____	_____ or _____	_____
f) _____	_____ or _____	_____ or _____	_____ or _____	_____ or _____	_____
g) _____	_____ or _____	_____ or _____	_____ or _____	_____ or _____	_____
h) _____	_____ or _____	_____ or _____	_____ or _____	_____ or _____	_____
i) _____	_____ or _____	_____ or _____	_____ or _____	_____ or _____	_____

12. What are the busiest farming months? (List month and farming practices/crops)

Month	Farming practices and crops
a) _____	_____
b) _____	_____
c) _____	_____
d) _____	_____
e) _____	_____

13. Is there any time during the farming season that you use labour from non-family (Zayc) members? YES _____ NO _____

If YES, tick which farming practices requires additional labour and also tick whether hired labour is required. Also list the crops involved.

Practice	Labour Needed		Labour Hired		Costs
	YES	NO	YES	NO	
a) Land preparation					
b) Planting					
c) Weeding					
d) Harvesting					
e) Cleaning					
f) Marketing					
g) Insect/pest control					
h)					

14. Did you hire a tractor or other large piece of this year? YES _____ NO _____

C. Agricultural Services Information

1. What kind of extension workers visit this village and what do their names?

Kind of agricultural extension worker	Name of the extension worker	Village where he/she lives
a)		
b)		
c)		
d)		
e)		
f)		

2. How helpful have the above extension workers been to you during the past farming year? _____ very helpful _____ not helpful

3. Have there been crop demonstrations in this village during the past year?

YES _____ No _____

If YES, what extension workers organized them? _____

4. How often has a M.A.S.I. person looked at your machamba during the past year? _____ times.

5. Who else besides extension workers or M.A.S.I. people do you get information about better farming methods? (tick one or all)

_____ Village chairman
 _____ Village manager
 _____ Village chairman or Secretary
 _____ School teachers
 _____ Member (name) _____

6. During the past year, how often have you visited the M.A.S.I. ? _____ times

7. During the past year, how often have you asked an extension worker to see your mshamba or to give you farming advice? _____ times

8. How often do you listen to agricultural programs on the radio? (tick)

_____ never _____ a few a month _____ a few times a week _____
 every day

9. How often do you read a newspaper? (tick)

_____ never _____ a few times a month _____ a few times a week _____
 every day.

10. How many village meetings have you attended during the past three (3) months? _____ meetings.

11. During the past year, have you attended any crop demonstration meetings?

YES _____ NO _____

12. What kind of fuel do you use for farming and family needs? (tick one or more)

_____ firewood _____ charcoal _____ kerosene _____
 cow dung _____ electricity _____ (other) _____

13. Compared to five years ago, today is the getting of firewood (tick)

_____ more of a problem
 _____ as much of a problem
 _____ less of a problem

14. Compared to five years ago, today is the getting of water (tick)

_____ more of a problem
 _____ as much of a problem
 _____ less of a problem

15. Compared to five years ago, today is the grinding of maize (tick)

_____ more of a problem
 _____ as much of a problem
 _____ less of a problem

16. Compared to five years ago, how do the transport of farm goods ~~change~~

~~is a problem~~
~~is a problem~~
~~is a problem~~

17. Are the following ~~things~~ ~~things~~ ~~things~~ already ~~used~~ ~~used~~ ~~used~~ these items?

Item	Use of Item		No Item	
	Yes	No	Yes	No
a) Jenbe				
b) Serran				
c) Wheeled push or pull cart				
d) Ox cart				
e) ...				
f) ...				
g) Radio				
h) Lantern				
i) Wristwatch or clock				

D. Farmer Opinions

Do you Strongly Agree (SA), Agree (A), Disagree (D), or Strongly Disagree (SD) with the following statements?

1. Farmers could be more productive if they had more ~~resources~~ ~~resources~~ to help them. SA A D SD
2. Farmers seem to live for today and let tomorrow care of itself. SA A D SD
3. Agricultural extension workers often know less about farming than do farmers. SA A D SD
4. Village life has not improved much in the past five years. SA A D SD
5. Farmers will improve crop yields mostly as a result of their own hard work. SA A D SD
6. Many of the things needed to improve farming are often beyond the control of the farmer. SA A D SD

7. Farming is important to the nation
 8. More work is not enough: successful farmers depend on help from other people who know what's happening out side the village.

SA A D SD

9. Planning for the future is not useful because a farmer's situation is always changing.

SA A D SD

10. Farmers who produce more food than other farmers should receive more income.

SA A D SD

11. Increasing the welfare of the village can best be done by working hard together.

SA A D SD

12. Agricultural extension workers often make recommendations that will cost the farmer more money than the older methods and recommendations.

SA A D SD

13. Farming is very hard work,

SA A D SD

14. Farmers will improve crop yields mostly as a result of government help.

SA A D SD

E. Interviewer Observations

The following questions are not to be asked of the farmer. Instead, you must answer the following questions by observing and evaluating the surrounding around you.

1. How would you judge the condition of the following buildings of the farmer as compared to other farmers in the same village?

<u>Building</u>	<u>Condition</u>
a) House (s)	very good good bad
b) Latrine	very good good bad none available
c) Livestock shed (s)	very good good bad none available
d) Kitchen	very good good bad
e) Grain storage	very good good bad none available

2. How would you judge the general health of the children?

- very good - good - bad

3. What soil conservation methods did you see the farmer using? (tick)

- ridges
- tie ridges
- contours
- terraces
- cover crops
- mulch
- tree stands/barricades

4. How responsive was the farmer to your asking questions? (tick one)

- very cooperative cooperative reluctant host

/Ngetanga.

GROUP INTERVIEW FORMAT FOR
FARMER TRAINING SHORT COURSE PARTICIPANTS

DISCUSSION:

This interview will be done with the entire "class" or group of farmers simultaneously. The interviewer will ask these questions of the group calling on several farmers to offer comments on each question. The interviewer should be sure that he calls on each farmer several times during the course of the interview. A recorder will accompany the interviewer to this session and will record all comments offered. This interview should be held after the last "period" or "class" of the short course and before the closing ceremony.

1. What did you like about the short course?
2. What aspects of the short course did you not like?
3. What did you like best about the housing and meals?
4. What did you not like about the housing and meals?
5. What kinds of courses would you like to attend in the future?
6. How often would you like to attend short courses here at MATI?
7. What is the most convenient length of course for you to attend? 1 day? 2 days? etc.?
8. How many of you are willing to make a commitment to implement the practices which you have learned here?
9. How many of you are willing to share what you have learned with others in the village upon your return?
 - How do you plan to share this new knowledge?
 - Obstacles to implementation?
10. Are there parts of the course that are still unclear to you?
11. If we offer this course again to a different group of farmers, how do you think we can improve it?
12. If a small amount of money was introduced as fees for the courses, would you still like to come and attend such courses? If so, how much would be a reasonable amount of money to charge?
13. Would you prefer men/women to attend such courses separately or both together?
14. How many of you would like using exercise books for writing notes?
15. Were the practical and the theory classes at the best ratio?
16. How many of you would like to play games? Indoor? Outdoor?

MINISTRY OF AGRICULTURE

AGE SURVEY * - FARMER TRAINING
AND PRODUCTION PROJECT.

Date of Survey _____

MATI _____

Recorded by: _____

I. Instructions

Answers to the following questions should be obtained by MATI wing staff in a group interview with knowledgeable village leaders. Be sure you satisfy leaders that their answers will not be recorded individually but rather will be recorded as group answers.

II. Purpose of the Survey

This survey is designed to assist in the selection of villages for participation in Farmer Training, to serve as a basis for progress planning, to make village and regional comparisons possible, to provide data which will serve as a baseline against which to measure progress over the life of the project, and to provide the capability of searching for correlations between various village variables. The survey will assist Wing staff and their advisors to select initial topics/problems for Farmer Training and it will help tutors and students to better plan and prepare for village field work.

III. Questions

A. Village Administration

1. Name of village _____
2. Distance from MATI _____
3. Name of ward _____
4. Name of district _____
5. Name of village chairman _____
6. Name of village secretary _____
7. Name of village manager _____
8. Other Party and Government employees who live in the village:
(See next page)

* The Village Survey will be followed by a Household Survey which will gather more detailed agricultural and homemaking information.

	Yes	No	Comments
a) Ewana/Bibi Shanba			
b) Ewana/Tibi Mifugo			
c) Rural Medical Aids			
d) Game Scouts			
e) Tsetse Officer			
f) Fisheries Officer			
g) Forestry Officer			
h) Education Staff			
i) Ward Secretary			
j) Division Secretary			
k) Community Development Officer			
l)			
m)			

9. Village History:

When was this village first started? Year _____

What person/group first started to live here? _____

What caused that person or group to come here? Please explain _____

10. Party and Government persons who have visited the village during the past two (2) years:

	Visited the Village ()		Comment
	Yes	No	
a) District Area Commissioner			
b) District Development Director			
c) District Agricultural Development Officer			
d) District Livestock Development Officer			
e) District Education Officer			
f) District Ujamaa and Ushirika Officer			
g) Ewana Misiiti			
h) Regional Commissioner			
i) Regional Development Director			
j) Regional Planning Officer			

Visited the Village

	Visited the Village		Comment
	Yes	No	
k) Regional Agricultural Development Officer			
l) Regional Livestock Development Officer			
m) Regional Education Officer			
n) Regional Ujamaa and Ushirikiano Officer			
o) N.B.C. Representative			
p) TRDB Representative			
q) Crop authority Representative			
r) Member of Parliament			
s)			
t)			
u)			

11. Has any high level Government official (s) come from this village?
 Yes: _____ No: _____ If yes: -- Describe _____
12. When was the first chairman of the village elected? Year: _____
13. How many different chairmen have there been in the last five (5) years?
 _____ (Number)
14. When was the first secretary of the village elected? _____ year.
15. How many different secretaries have there been in the last five (5) years?
 _____ (Number)
16. How many Mabwani Shamba have worked in this village during the past five (5) years?
 _____ (Number)
17. Which committees does the village have; how many men and women are on each committee and have they met during the last three (3) months?

Committee (Name)	Members (No.)		Met in Past Three Months	
	Men	Women	Yes	No
(a) _____	_____	_____	Yes _____	No _____
(b) _____	Men _____	Women _____	Yes _____	No _____
(c) _____	Men _____	Women _____	Yes _____	No _____
(d) _____	Men _____	Women _____	Yes _____	No _____
(e) _____	Men _____	Women _____	Yes _____	No _____
(f) _____	Men _____	Women _____	Yes _____	No _____
(g) _____	Men _____	Women _____	Yes _____	No _____
(h) _____	Men _____	Women _____	Yes _____	No _____
(i) _____	Men _____	Women _____	Yes _____	No _____

Comments: _____

18. How many people are on the village council? _____ (Number). How many are under 30 years of age? _____ Over 50 years of age? _____ How many are women? _____

19. (a) How many village council meetings have been held during the past one year? (Number) _____ Comments: _____

(b) How many village assemblies have been held during the past year? (Number) _____

(c) How many council meetings _____, assemblies _____ are required by constitution? Why were more/less held? _____

20. How many adults of the village usually attend the village assemblies? (Tick) All adults _____, $\frac{3}{4}$ adults _____, $\frac{1}{2}$ adults _____, $\frac{1}{4}$ or less _____

21. Did this village participate in a Saba Saba event during the past one (1) year? (Tick) Yes _____ No _____

B. Village Population

1. Number of families (Kaya) in village now _____

2. Number of adults who are:

	AGES			Total
	18-30	31-35	56-99	
a) Able men				
b) Able women				
c) Disabled men				
d) Disabled women				
e) Wage earner (men)				
f) Wage earners (women)				

3. Number of children who are:

	Pre-School	SCHOOL AGE GROUPS		Total
		Primary	Secondary	
a) Boys				
b) Girls				

4. The number of youth from this village who entered post secondary schools in the past five (5) years? _____ (Number)

5. Number of school leavers living in this village who completed:

	Std. 7-8/ Primary	SCHOOL LEAVER GROUPS		Total
		Secondary		
a) Boys				
b) Girls				

6. What different tribal groups are in this village?

TRIBE (Name)	ADULTS AS % OF ADULT POPULATION
a) _____	_____ %
b) _____	_____ %
c) _____	_____ %
d) _____	_____ %
e) _____	_____ %

7. How many people have moved to this village in the past five years? ---

Many _____ Few _____ Some _____ None _____

- (a) Where do most of them come from? _____

- (b) Why have they moved here? _____

8. How many people left this village to live some where else during the past five years?

Many _____ Few _____ Some _____ None _____

- (a) Where did most of them go? _____

- (b) Why have they left? _____

Village Services

	Present in Village? (tick)		(if No number Kms. To Nearest Service)	COMMENTS
	Yes	No		
a) All weather road				
b) Bus service				
c) Railroad service				
d) Mechanic service (gari)				
e) Tractor service				
f) Bicycle Repair service				
g) Hand tool duka				
h) Petrol station				
i) Electricity				
j) Charcoal				
k) Kun				
l) Biogas				
m)				

2. Communication

a) Post office branch				
b) Telephone				
c) Radio Duka				
d) Newspaper Duka				

3. Education and Health

a) Primary School				
b) Secondary School				
c) Trade School				
d) Clinic with Dispensary				
e) Permanent water supply				

4. Organizations and Miscellaneous Public Services

a) TAPA branch				
b) CCM office				
c) UWT branch				
d) JVCCM				
e) Police post				
f) Baraza				
g) Child day care center				
h) Football field				
i) Church or mission station				
j) Mosque				
k) Livestock dip				

5. (a) Business

a) General marketplace				
b) Crop buying post				
c) Storage godown				
d) Brickmaker				
e) Carpenter				
f) Tailor				
g) Hotel				
h) Pombe house				
i) Fishing				
j) Cooperative shop				
k) Butcher				
l) Baker				
m) Maize grinding mill				
n)				

5. (b) At present, could the following items be bought in this village?

Item				
a) Paraffin				
b) Matches				
c) Batteries				
d) Salt				
e) Sugar				
f) Blankets				
g) School Uniform				
h) Sulfuria				
i) Mattress				
j) Mabatt				
k) Jerbe				
l) Sprayer				
m) Pesticide				
n) Fertilizer				
o) Seed				

6. Additional Health Questions

(a) Does drinking water here come from:

a) Wells				
b) Rivers or Creeks				
c) Irrigation ditches				
d) Springs				
e) Brought in tanks				
f) Rain water				
g) Other				

b) Is water piped into any homes here? Yes _____ No _____ Percentage _____

c) Did the villagers have enough water last year? Yes _____, No _____

Comments: _____

d) Did the water service breakdown last year? Yes _____ No _____

Comments: _____

e) How many homes have a toilet or latrine _____ percentage _____

f) Which health services does this village have?

Hospital			
Clinic or dispensary			
Health post			
Mobile health unit			
Nurse			
Mid-wife			

g) In case of emergency or major illness, where do people go for help?

7. Self-Help Projects	Project	Project	Comments
	Already Completed	Being Completed	
a) School classroom			
b) Teacher house			
c) GOM office			
d) Water system			
e) Clinic			
f) Road			
g) Dwana/Bibi Shara House			
h)			
i)			

D. Village Agriculture

1. General Data

- a) Altitude (Meters) _____
- b) Topography _____
- c) Average Rainfall (centimeters) and average temperature (C)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rain (cm)												
Temp (C)												

- (1) Which months have the most unpredictable rains (list months) _____
 - (2) Which are the busiest months for planting (list month and crop)
- | | |
|-------------|------------|
| Month _____ | Crop _____ |

- (3) Which are the busiest months for harvesting? (list month and crop)
- | | |
|-------------|------------|
| Month _____ | Crop _____ |

d) Water Control	Present in Village?		Comments
	Yes	No	
1) Pans			
2) Canals			
3) Flood irrigation			
4) Water reservoirs			
5)			

INTERVIEWER: Record the following in the villagers own words .

- e) Soil
- 1) Types (name) _____
- 2) Fertility (list common nutrient deficiencies) _____
- 3) Erosion (list Problems) _____

2.

a) Livestock Data

Animal	Number	Pests, Diseases and other problems
a) Cattle		
b) Buffalo		
c) Goats		
d) Sheep		
e) Poultry		
f) Pigs		
g) Cren		

- (b) Is grazing mostly on a communal or individual basis? _____
- (c) Does the village have a communal livestock herd? Yes _____, No _____
- (d) What are the major reasons for keeping livestock? _____

3.8

(a) Crop Data

Crop	Shamba la Kijiji (Ha.)	Shamba la bega kwa bega (No.)	Shamba la nafsi (Hectares)	Shamba la Kijiji sales (kg)	Remarks (Example: Private sales)
a) Cotton					
b) Sorghum					
c) Paddy					
d) Paddy					
e) Millet					
f) Maize					
g) Cassava					
h) Peanut					
i) Sunflower					
j) Cashew					
k) Sisal					
l) Coffee					
m) Tea					
n) Pineapple					
o) Wheat					
p) Tobacco					
q) Dates/Pears					
r) Citrus					
s) Banana					
t) Mango					
u) Pineapple					
v) Coconut					

- (b) How self sufficient is the village in food production? Would you say not at all _____, Somewhat _____, Sufficient _____, More than sufficient _____, Far more than sufficient _____. Has the village received family relief assistance? Yes _____ No _____. Describe _____

4. Farming Practices Data

Please tell us about your most serious problems in crop production. Are there serious problems in regard to land preparation on: cotton, sorghum, paddy (Interviewer will ask for a description of each problem identified and ticked in chart). Are there serious problems in regard to planting: cotton, sorghum, paddy (continue in this manner until the chart is covered and all problems are described in Part a).

Interviewer: Note that rows and columns are designated in Chart a) by numerals and letters. If a group identifies a weeding problem on paddy, for example, place a tick () in the appropriate square (c,5. in this case). In part b) show c, 5. under "square" and then describe the problem. See the example given.

(a) Chart for noting serious crop problems

	P	r	c	e	e	b	c	r	s	m
	Land Preparation	Planting	Seeding	Fertilizing	Insect Control	Disease Control	Harvesting	Processing	Storage	Marketing
1) Cotton										
2) Sorghum										
3) Paddy										
4) Maize										
5) Cassava										
6) Peanut										
7) Sunflower										
8) Cashew										
9) Sisal										
10) Coffee										
11) Tea										
12) Wheat										
13) Tobacco										
14) Beans/Peas										
15) Citrus										
16) Banana										
17)										

(b) Description of problems ticked above:

Square	Problem:
3, c	Wild rice weeds mature quicker than paddy, thus reseeding themselves. This weed reduces yields about 30%

Use back of sheet if more space is needed.

5. General Agricultural Information

(a) What should be done to help the village develop its agriculture?

(d) What outside help do you think the village should receive to develop its agricultural production (include livestock and forest)?

(e) What agricultural projects, if any, does the village have in operation at this time? Describe and evaluate their success.

(d) If this village should start or expand its communal production activities, what type of projects do you think would be best (most feasible or most likely to succeed)? Why do you feel these are best?

Projects: _____ Reasons _____

(e) What activities/positions should MARI students be exposed to in this village so they will better understand agricultural problems?

(e) Is this village visited regularly by a Swana/Bibi Shamba or Mifugo?

Yes _____, No _____. About how often per month is the village visited during the growing season? _____
What does he/she do during visits? _____

How many hours does he/she usually spend on such a visit? _____
(number) Do any crop authority extension workers regularly visit this village? Yes _____, No _____. If yes, who and how often? _____

Has the Swana Shamba called any meetings in this village, during the past year? Yes _____ No _____ If yes, about how many? _____

Has this village had any agricultural demonstrations in the past two years? Yes _____ No _____. Comments _____

(g) How was the village land acquired? _____

Is the amount of land: Insufficient _____, Sufficient _____ More than sufficient _____
Is there a possibility of acquiring more land? Yes _____ No _____

How is land allocated in the village? _____

What is the total amount of land in: Shamba la kijiji _____, Shamba
la bega kwa bega _____, Shamba la binafsi _____;
Comments _____

What is the number of households in which farming is a major activity? _____

INTERVIEWER: Calculate later the average amount of land per household in
Shamba la kijiji _____ acres; shamba la bega kwa bega _____ acres;
shamba la binafsi _____ acres. (_____, _____, _____
hectares)

h) Has this village received any loans or gifts during the past 4 years? List
items and quantity received, if any)

<u>Item</u>	<u>Quantity</u>	<u>Source</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

i) What health problems, if any, reduce the peoples' ability to work hard and long
in their shambas? _____

<u>Health problems</u>	<u>Severity</u>
_____	_____
_____	_____
_____	_____
_____	_____

How can these problems be solved? _____

What is now being done? _____

1) What are your major marketing problems? _____

2) What are your main storage problems? _____

E. Village Labor (Off Farm)

1. Is there any place nearby (walking distance) where people go to get work?
Yes _____ No _____ If yes, please describe _____

2. Is there any other trade such as fishing, charcoal burning, sisal cutting which people of this village do to get money? Yes _____ No _____
Describe _____
3. How hard is it to find permanent employment here?
Very hard _____ Hard _____ Easy _____ Why? _____
4. How many people are looking for work and can't find it?
Many _____ Some _____ A few _____ None _____
5. Compared to 5 years ago, is there: More work opportunities _____
Less work opportunities or the same amount of work opportunity _____
Why is there more or less work opportunity now? _____
6. Are there people who leave every year to work? Yes _____ No _____
 - a) How many leave? Many _____ Some _____ A few _____
 - b) Where do they go?
To neighboring areas (specify) _____
To other parts of the country _____
 - c) Compared to 5 years ago, do more or less leave? More _____ Less _____
7. What is the average daily wages of workers in this area? _____
For how many hours? _____
Does this also provide:

	Yes	No	Comments
Food			
Housing			
Land			
8. What leisure time activities are popular in the village? _____

Miscellaneous

1. If you compare the people here with others in the District, do you think the people are poorer, about the same, or richer than those in many other villages? Would you say they are: Much poorer _____, Poorer _____, About the same _____, A little richer _____, Much richer _____.
Comments _____

2. If you compare the amount of progress which this village has made compared with other villages in this District, do you think this village has: Much less progress _____, Less progress _____, About the same _____, More progress _____, Much more progress _____, Comments _____

3. What are the three biggest problems facing this village? (list in order of the three most important).

FIRST _____

SECOND _____

THIRD _____

4. Tusene Serijali inataka kutoa kiasi fulani cha fedha kwa ajili ya maendeleo ya kijiji hiki. Je ninyi? mzaonelea fedha hizo zitunike kwa kitu gani ambacho ni cha lazima zaidi.

Kwa nini / ^{meona} kitu hicho ni muhimu zaidi kuliko vyote?

5. Compared to other villages in this District, how quickly do you think this village will develop during the next five years? Less Quickly _____, About the same _____, More quickly _____, Cannot judge _____/ Why do you think so? Please explain (PROBE FOR COMPLETE REASONS) _____

ANNEX 3

Farmer Short Course Record at Individual Training Wing
(course title, tutor, location, duration,
village involved and number of men/women attending)

SHORT COURSES	TJTO S						COURSE LOCATION	DURATION	VILLAGES										TOTAL
	ARI	D-DO	LEATI	GATA	RADO	OTHEL			Halienole		Mdui		Mbawala		Himbe lekotele				
	Itano	Itane	Itane	Itano	Itane	Itano			M	F	M	F	M	F	M	F			
1. Farmers Orientation	Itinja Itaule		Rueganila				MATI	1			17	1	17	3			10	10.2.01	
"	"		"				MATI	1	14	-							10 10 Itakala	11.2.01	
2. P/Poon Sorghum	Itingwa Itaule						MATI	2	11	1	11	1						5.3.01 6.3.01	
3. Storage	Itingwa				Itamini		MATI	2	7	5	11	1						15.6.01 16.6.01	
4. P/Poon Sorghum Harv.	Itingwa		Iwa H.T.				Village	1			12	-						13.3.01 15.3.01	
5. Cashewnut Production				Itilla Itano			MATI	2	9	3	10	2						14.7.01	
6. Goat & Rabbit			Itatibi			Mpepo (Ridep) (Health)	MATI	2	6	5	11	-						29.7.01 30.7.01	
7. Human Nutrition		Chaka Itazonga	Itakisyambe Gana		Laowai		MATI	2	5	6	10	2						25.8.01 26.8.01	
8. Animal Health			Tula			V.I.C (Ridep)	MATI	2	8	2	9	3						5.9.01	
9. Village Planning			Itueganila Itakisyambe			D.D.O. D.P.O.	MATI	2	10	2	20	4						16.10.01 19.10.01	
								2					10	4				20.10.01	
								2							21	3		26.10.01	
								2			20	4						10.11.01	
10. Groundnuts		Ituko					MATI	2					10	4				13.11.01	
								2							20	4		17.11.01	
								2	15	3								3.11.01	
11. Coconuts						Toru (N.C.P.)	MATI	2			7		7		7			18.11.01	

ANNEX 4

Compilation of Farmer Short Course
Held At All Four Training Wings
(topic, wing, number of courses,
days duration and number attended)

TOPIC	MILINGANO			MWARA			NYECEZI			UYOLE		
	No. Courses	Days Duration	No. Attended	No. Courses	Days Duration	No. Attended	No. Courses	Days Duration	No. Attended	No. Courses	Days Duration	No. Attended
1. Orientation	1	*	*	1	2	42	1	1/2	20			
2. Grain Storage	1			1	2	24						
3. Tree Crop Production	2			4	6	77						
4. Record Keeping							1	1	25			
5. Food Legume Production Harvesting & Processing	1			7	7	117						
6. Animal Production & Health				2	2	23	3	2ea	55			
7. Gardening & Vegetable Prod.	1											
8. Root Crop Production				2	2	37						
9. Oil Seed Production				5	2	103						
10. Human Nutrition	1			1	2	23						
11. Land-Use Planin							1	4 ^{lea} Villages	90			
12. Village/Farm Planning	1			4	2	98				1	1/2	12
13. Village Problem Identification										1	1/2	12
14. Terminate Control				1	1	25						
15. Cereal Grain Production	1			2	4	53						
16. Rope Pump							1	1hr	25			
TOTAL	9	35	30	26	32	482	7	7 3/4	215	2	1	80

*The Milingano courses were offered to 30 farmers/village para-professionals during a seven week course.

ANNEX 5

A Teaching Package for a Grain
Storage Short Course for Farmers

A Teaching Package for a Village Planning
Short Course for Village Leaders

A T E A C H I N G P A C K A G E F O R :

A G R A I N S T O R A G E S H O R T C O U R S E
F O R F A R M E R S

Developed By:

A. Mtukwe
D. Acker

M.A.T.I., Mtwara

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TEACHING PACKAGE FOR:

GRAIN STORAGE SHORT COURSE

Introductory Note to Trainers:

The following is a teaching package designed to help trainers of farmers present an effective short course on Grain Storage. Not all of what you will read in the next few pages will be directly applicable to your own situation and needs as a trainer. Should you find this to be the case feel free to make adjustments in the package to suit the needs of your trainees. Remember, this teaching package provides a set of suggested guidelines, not inflexible laws. Trainers are encouraged to use their own examples, etc.

Content:

You will find the following sections as you read through the package:

Goal: A brief statement which tells us the general direction the course and participants will follow. (Pg. 2).

Objectives: A listing of specific skills and knowledge the trainee should have by the time he returns to his/her village. The rationale for each objective is included in this section. (Pg. 2)

Pre-Course Preparation: A rather lengthy document which will help prepare trainers to tailor the course to the actual needs of the trainees. This document includes background reading, a chart to fill in and a series of questions which should be completed during the pre-course village visits. (Pg.3-11)

Orientation For Trainers: A two page handout to prepare trainers to work effectively with farmers. As a general rule farmers, as a learning group, require certain special considerations. This handout outlines some philosophical background on the subject as well as giving several practical suggestions. (Pg. 12-13).

Instructions for Trainers: A step-by-step listing of all activities for trainers and trainees from course preparation through course completion. A suggested timetable for the course is included. (Pg. 14-15).

Materials Needed: A list of materials, equipment and supplies needed for the short course. (Pg. 15).

Food For Thought: A series of questions, to help trainers focus their thoughts on a number of important issues involved in change strategies for traditional storage systems. (Pg. 16)

Evaluation Scheme: Several suggestions on ways to evaluate the effectiveness of the short course as an intervention strategy. (Pg. 17).

References: A short list of books that can be consulted for further information on the subject of Grain Storage. (Pg. 17).

Appendix: Additional Resources (Pg. 18)

Add: "Brainstorming"

G O A L :

To assist farmers in developing skills and knowledge concerning storage systems in order to enable them to reduce post harvest losses resulting from ^{improper} storage of feed, food and seed grains at both farm and village levels. Improved storage systems should include consideration of insect, moisture, rodent, and theft problems. Materials should be of low cost and available locally.

O B J E C T I V E S :F A R M E R S S H O U L D :

- (1) - Know when and how to safely apply chemicals to stored grains and seeds (Pesticides to food and feed grains and seed dressing to seed for next year).
- (2) - Know how to protect their stored grains and seed from rats.
- (3) - Know how to build simple improved storage structures.

R A T I O N A L E F O R O B J E C T I V E S :

- 1) - Insects can destroy stored products.
- after a farmer works hard to produce a crop it makes good sense to protect it.
- 2) Rats can destroy stored products.
- Same as above.
- 3) Improved storage structures help farmers to combat problems of theft, moisture, insect pests, rats, and inconvenience.

CHOOSING YOUR STORAGE SYSTEM

Since most farmers are already storing part of their grain harvest, storage is not so much introducing a new idea as it is trying to improve on what is being done.

It is true that there are some types of food storage that may be totally new to an area, such as making pit silos to store grass for cattle or the techniques of preservation of fruits. With the introduction of such new concepts, you will have to take more social and economic items into consideration than with grain storage. Any improvement in his storage method must, however, be made in accordance with steps the farmer sees as the right ones for his particular situation or need.

With grain storage, great care must be taken in helping farmers to choose the appropriate improved grain storage system. Nevertheless, there are certain basic principles that can be carried out in all storage systems, and these are reviewed at the end of the chapter.

Thus, in helping the farmers to make the appropriate choices, you must take a number of considerations into account:

These considerations have been grouped into a convenient, easy-to-use chart. In your area, you should be able to use this table discussing possible storage systems with local farmers.

Key Consideration for Choice of Farm and Village-Level Grain Storage Methods1. The Geography of the Area

Temperature, average rainfall during the period of harvest and of storage, winds, type of soil on which storage facilities are to be built (rocky, sandy, clay).

2. Type of Grain to be Stored and the Use to be Made of It

Grain that is to be used for food by the family is often being opened constantly, and thus the ease of use is of first importance. Grain held for longer periods, till sold on the market, may be stored differently.

3. Quantity of Grain Currently being Produced and the Amount to be Stored

If productivity per individual farmer is low, collective storage facilities may be necessary. The possibility of collective storage through the creation of cooperatives will vary from place to place. Acceptance will depend on past experiences, on government policy, on the degree of cooperative work already being done. In many cases, a group of farmers working together will be able to get more done than working ²individually, and thus store larger quantities of grain. However, storage facilities should be no larger than needed. Half-filled storage facilities are wasteful. It is better to add new storage storage facilities as production and storage needs grow.

4. Benefit of This Grain as to its Storage

This factor depends on the number of harvests per year - usually either one or two.

5. Construction Costs

Costs are usually calculated for comparative reasons by cost per ton to be stored. Appropriate storage technologies must be inexpensive. Most farmers have little cash revenue and thus costs must not seem to be greater than benefits, especially as some benefits - such as better health through better nutrition - are not easily translated into cash terms. Thus, the practical benefits of a new method must be thought through from the farmer's standpoint if it is not to be rejected because of simple economic realities.

6. Efficiency

Has the method been tested in the field in the local area or not? What has been the previous result of its use?

7. Availability of Materials

What materials are needed (cement, plastic sheets, insecticides, wood, water, screening)? Are special tools required?

8. Skills Necessary

How much training time and supervision are necessary to assure proper construction and use? Can the farmer maintain the new technique or structure by himself? Once the storage facility is built, can the farmer build other without external help? Can the farmer's neighbors build the storage facility with just his help?

9. Marketing Considerations

As it is likely that part of the stored grain will be sold on the market, marketing considerations can play a role in the selection of the most appropriate technology. What sort of cereals are most in demand? What quality is demanded? Is grain sold to a government board or to private buyers?

10. The Influence of Tradition and Current Practices

As has been mentioned before, current social and cultural practices influence what can be done. If all work on grain storage must be done by women, then the type and size of storage facilities may be different from what would be the case if men did the building. If farmers are used to building with mud brick, it will be easier to introduce a mud silo than if people only use wood. If work is already done collectively, it may be easier to store collectively than if it is done individually.

There are a wide variety of techniques of storage already in use; the techniques chosen usually depend upon the amount of grain produced and traditional techniques in use. Thus farmers with a small grain production usually store grain in their dwellings, very often above the cooking area. Similarly, groups of people who are good at making clay pots will store grain in large clay pots, while those who are good at making baskets will store grain in closely woven baskets.

Many of these traditional methods are useful and are a base on which to build improved storage techniques. Many of these techniques can continue to be used, especially for the storage of grain that is to be used as seed for planting. Only a limited amount of grain needs to be kept for replanting. However, the basic problem with many of the adequate traditional techniques - such as storage in clay pots - is that they are not adapted to the storage of larger amounts of grain. Many of the traditional techniques were of use when a farmer grew grain only for his own family. However, as the scale of production changes in order to sell grain on the market, so storage techniques also have to change in scale.

A chart has been made of the aforementioned ten points. During the Workshop/Training session, you can try filling in each section for the different types of storage being discussed. Once you are back in your local area, you can use the table in discussions with local farmers in trying to find the most appropriate methods.

Even with this Table of Considerations to assist you, the choice of appropriate storage methods can be difficult. One problem is whether you should select comparatively complicated techniques which can bring great advantages to a fairly small number of better-off farmers (on the assumption that the number of these farmers will increase over the years) or whether you should introduce simpler techniques which can be adopted easily by the average farmer. This is a question and will have to be discussed openly with the local leaders.

However, whatever kind of storage system a farmer uses, there are certain basic principles on which every method is based. Most have been mentioned before, but it is useful to review them here.

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Every storage container - to the maximum extent possible - no matter how large or how small, no matter of what material it is made, should:

- Keep grain cool and dry;
- Protect grain from insects;
- Protect grain from rodents.

All storage methods should try to accomplish these three objectives and particularly where "closed" systems are involved.

But no storage container is adequate without good storage techniques and management. The following seven points represent a suggested Code of

..... 13 cents

TABLE OF CONSIDERATIONS
FOR CHOICE OF FARM AND VILLAGE -LEVEL GRAIN STORAGE METHODS.

CROPS PROD	GEOGRAPHIC OF AREA	TYPE OF GRAIN	QUANTITY OF GRAIN	LENGTH OF TIME	COSTS	EFFICIENCY	MATERIALS AVAILABLE	SKILLS	MARKETING

Good Storage Practices, and thus offer a set of guidelines in the adoption of an appropriate storage system.

1. Drying grain well before putting it into storage. The grain must be kept dry.
2. Putting only clean grain into containers which themselves have had all old grain, dust, straw and insects removed. All dust, old pieces of grain, dirt, straw should be burned, for they are likely to contain insects.
3. Keeping the grain cool and protected from large changes in outside temperatures. This can be done in a number of ways - by using building materials which do not easily pass on changes in outside temperatures to the stored grain, by keeping or building storage containers away from direct sunlight, by applying a coat of white plaster to the outside of the containers.
4. Protecting the grain from insects by following rules for cleanliness and drying, by applying insecticide, and/or by putting the grain into airtight storage.
5. Waterproofing the buildings and containers as much as possible. This is done by the way the building is constructed and by applying materials which keep water from soaking into the building material. Storage buildings should be built on well-drained locations. They should not be placed where they will be flooded by ground water run-off during heavy rains.
6. Making sure containers are rodent-proofed in all possible ways.
7. Checking the grain regularly while it is in storage to make sure it is not infested, and following re-cleaning instructions to destroy insects, if they are found when the grain is checked. Check the grain every two weeks and suggest to the farmer that he make checking his grain part of a weekly or bi-weekly routine. Put his hand into a sack of grain to check for heating. He can smell the grain and look for dark kernels: signs of mold. If these signs are found, he should dump out the grain and dry it again.

A farmer who has these seven points ~~simply in mind~~ ~~will know~~ ~~why~~ a particular silo or storage method has been built or changed in a certain way. He can then do much to improve his own storage facility by applying the knowledge to his own problems.

Storing Grain in Sacks

Less traditional, but very common at both the farm and village level and in the storage centers of merchants, is the storage of grains in sacks.

Putting grain in sacks or bags is a very old method of storing. Storage sacks are made of woven jute, hemp, sisal, local grasses, cotton whatever material is available in the area. Sacks are relatively expensive as they do not often last for more than two seasons, and they do not give much natural protection against insects, rodents, and moisture. But sack storage has some advantages for the small farmer, and there are things farmers can do to protect their sacked grain.

Sacks are easy to label. Farmers can label old grain sacks and new grain sacks to keep them separate. Seed grain can be marked and kept separately from the other grains.

Sacks are easy to move around, and can be used as they are needed.

Farmers in one village may decide to build a shed to hold the grain belonging to all the village's farmers. It is easy to mark sacks so that each farmer's grain can be found simply.

However, grain stored in fiber sacks is easily attacked by insects, rodents, and molds. Often these attacks are worse because a farmer has not done all he can to protect his grain sacks.

There are a few measures that the farmer can take, such as to waterproof the walls and roof of the building where the grain is stored.

The farmer should also stack the sacks on platforms raised off the floor. This keeps sacked grain from taking moisture from the floor. Farmers can make these platforms out of whatever materials they have. If no wood or bricks are available to make a platform, the ground can be covered with plastic sheets. The raised platform is better than the plastic because it also allows air to flow under the sacked grain.

Finally, as we have said before, whatever choice of improved storage system is decided on, that decision will have to be made by the farmer himself. However, you can help introduce the material from this WORKBOOK to him because you know the area where you work.

Although there are a number of different types of improved farm and village-level storage units for farmers to choose from, in the following two chapters the WORKBOOK will concentrate on several models which years of usage in West Africa have confirmed their operational effectiveness under a wide variety of geographical and climatic conditions, and also, from an economic point of view, are within the means of most subsistence farmers. These include:

- an IMPROVED FMO MAIZE CANN, which combines drying and storage.
- the "NORTHERN GHANA" IMPROVED MUDBLOCK SILO, which has proven to be an ideal container for home storage needs, not only in the dryer areas but also has been recently improved to meet the requirements of humid areas as well.
- the 4.5 ton CEMENT STAVE SILO, which has been found to be one of the most versatile storage units in use, particularly popular with cooperatives and communal village-level groups.

WORKBOOK EXERCISES.

1. What are the current ways in which grain is stored in your area?
2. What quantities of grain are being stored in your area, by the individual farmer, on a cooperative basis?
3. What are the advantages that the farmers see in the methods they are now using?
4. What are the disadvantages that the farmers have mentioned of the methods they are now using?
5. What are the construction costs in money and time of the methods of storage in current use?

6. What are the three basic aims of all grain-storage systems?
7. What are some of the measures that are currently being taken to waterproof buildings or containers for grain storage?
8. What are some of the measures currently being taken to make storage facilities as rodent-proof as possible?
9. What are some of the advantages of putting grain in sacks?
10. What are some of the disadvantages of putting grain in sacks?
11. How can ^{many} of these disadvantages be overcome?
12. What plan of action will you follow in discussing the different types of improved storage containers with local village leaders?

ORIENTATION FOR TRAINERSGRAIN STORAGE SHORT COURSEINTRODUCTION:

On behalf of MATI Mtwara and the staff of the Farmer Training Wing we would like to thank you for your involvement in this short course. Because we are a new facility at MATI we want to make sure that those who partici^{te} in activities here feel welcome and are duly credited for their contributions to the Farmer Training Wing's success.

We have spent a good deal of time fine tuning an extension approach in order to establish the best possible relations between the Wing and local farmers. We are also focusing our efforts on streamlining the chain of events which starts with a farmers change in attitude and ends with a farmers change in behaviour... the process of learning and putting learning into action. Along these lines I would like to share some of our thinking with you in order that you may be able to help strengthen our tradition of modern education and extension methods through your interaction with farmers.

DIALOGICAL TRAINING:

The Department of Agricultural Education and Extension at the Faculty of Agriculture, Morogoro has done extensive research and testing on a technique they call dialogical extension. The results have been strikingly successful and are being picked up by groups in a number of extension endeavors throughout the country and continent. The basic notion behind dialogical extension is that the rural peasant has learned a great deal about surviving in his own environment through trial and error "research" over the years. Dialogical extension simply taps this vast potential store of knowledge and allows others to share it and add to it. The method involved, in its simplest form, utilizes dialogue or directed discussion in order to expose problem areas and subsequent solutions. A group facilitator, (like yourself) will sit with a group of farmers and through the course of a group discussion (or dialogue) help identify problems which farmers themselves perceive. By encouraging farmers to take a fresh look at an old problem and by getting farmers to "brainstorm" new ideas can surface for consideration by the group as a potential solution to the problem.

At the Wing we have adopted this method as our basic training method. For you, the trainer/facilitator it means that you won't have to prepare and deliver a lecture. Instead, you may spend your entire session probing farmers with leading questions, encouraging discussion etc. So, instead of reading through your lecture notes you are involved in an exciting and dynamic learning environment. In the case of this short course you may wish to follow these rough guidelines:

1. Introduction of yourself and your areas of interest, eg. rat control.
2. Start a discussion on rat control techniques currently used in the villages where / ^{these} farmers come from.
3. Lead the discussion into problems associated with these traditional types of rat control.
4. Move the discussion into the area of what the farmers think could be done to solve some of these problems, how can improvements be made.
5. At this point give your thoughts on the subject and then move the discussion to choosing the best mix of techniques.

Remember that the trick is to get villagers talking and listening to each other rather than having them listen only to you. Two years ago in Rome, President Nyerere said "rural development is people's development of themselves, their lives and environment. The people must participate not just in the physical labor involved in economic development but also in the planning of it and the determination of priorities."

An important step (a crucial step) in the process of group discussion/ group dialogue toward problem solving is to get villagers to see that the solution to their problem of storage lies somewhere in their own village, that the technicians who can advise them and help them build the unit probably exist right in their own village, and many of the materials exist right in their own village. In short, the facilitator needs to inspire confidence in the villagers. Later, after confidence in their own abilities to design the new unit is established it may be / ^{appropriate} to introduce a few "outside ideas", but only at this point. The facilitators must restrict expressions of their opinions about the quality of the ideas presented by farmers during the brainstorming sessions as not to influence the thinking of the participants.

Thank you for your participation.

FARMER TRAINING WING STAFF

M. A. T. I. M T W A R A.

INSTRUCTIONS FOR TRAINERS:STEP-BY-STEP:

- 1) Review several sources of information on grain storage in order to familiarize yourself with the subject.
- 2) Perform the "Pre-Course Preparation" exercise including village interviews. Use this trip to the village to photo-document all types of storage structures currently being used in the village from which trainees will be drawn.
- 3) Review "Goal", "Objectives" and "Orientation for Trainers".
- 4) Review "Food for Thought."
5. Review "Evaluation Scheme".
6. Collect all materials.
7. Open Short Course - Explain Goal and Objectives and Rationale for each objective.
8. Session Number 1: Problem Identification - "Brainstorm" with farmers to bring out all known storage problems in the village. "Brainstorm" local solutions to the above problems.
9. Session Number 2: Bring to the attention of the farmers the various chemicals and traps relating to non-structural problems. Show visuals. Demonstrate use of chemicals and traps. Charts and live specimens should be used during this session.
10. Session Number 3: Focus on Structural problems using overhead projector or blackboard to document the specific problems. Show slides of storage structures currently in use in their village. Analyze these structures which are familiar to the farmer for advantages and disadvantages.
11. Session Number 4: With advantages and disadvantages of the various structures fresh in your minds design, as a group (or two sub-groups), a structure which embodies as many of the advantages and as few of the disadvantages as possible into one (or two) improved structures.
- 12) Session Number 5: Go outside to the area where the supplies and tools are waiting and construct as a group a replica of the structure you have just designed.
- 13) Session Number 6: Critique the finished storage structure. Find out if any or is dissatisfied with the end result. Find out how many plan to build such a structure and how soon. Attempt to extract a commitment from them as to when you can come to see their finished structure.
Summarize the main points of the short course.
- 14) Close Short Course - with invited guest.
- 15) Evaluate effect of short course on farmers storage habits. See "Evaluation Scheme".

SUGGESTED TIMETABLE:

Day 1: Farmers arrive the evening before short course is to begin. This insures that they will be there on time for the first session and gives them time to adjust to the new surroundings before they begin the course. A film show or games can help the farmers make the adjustment. They should arrive in time to take their evening meal at the MATTI.

Day 2:	Tea	7-7.30
	Opening Ceremony/Welcomes by Principal	8-8:30
	Session No. 1	8:30-9.30
	Stretch Break	9:30-9.45
	Session No. 2	9.45-10.45
	Tea	10:45-11.15
	Session No. 2(Continues)	11:15-12:30
	Lunch Break	12:30-2:00
	Session No. 3.	2:00-3.00
	Stretch Break	3:00-3:15
	Session No. 3 (Continues)	3:15-4:30
	Free Time	4:30-6:00
	Dinner Break	6:00-7:30
	Film Show and/or Games	7:30-

Day 3:	Tea	7.00-7.30
	Session No. 4	7:30-8.45
	Session No. 5	8:45-10.30
	Tea Break	10:30-11:00
	Session No. 5 (Continues)	11:00-12:30
	Lunch	12:30-2:00
	Session No. 5 (Continues)	2:00-3:15
	Session No. 6	3:15-4:30
	Group Interview to get trainees feedback about course	4:30-5:00
	Closing Ceremony-with invited guest of honor.	5:00-5:30
	Trainees return to village	5:30-

MATERIALS NEEDED FOR SHORT COURSE1) VISUAL AIDS

Live Specimens of insect pests
 Charts of insect pests
 Slides of insect pests
 Seed dressing chemicals
 Charts for rat control
 Chemicals for rat control
 Traps for rat control
~~Traps for rat control~~
 Photographs/Slides of storage methods from surrounding villages
 Photographs/Slides of improved storage methods
 Slide and over head projectors, Black Board, Chalk and eraser.

2) EQUIPMENT AND SUPPLIES FOR BUILDING IMPROVED STORAGE STRUCTURE DESIGNEDBY THE GROUP:

Sisal Twine
 Poles of Various Diameters
 Grass for Thatch
 Water
 Clay Soil
 Cement
 Tin (Traps for rat control)
 Hoes
 Buckets
 Nails
 Hammer
 Panga
 Other materials available locally at little or no cost.

Questions Involved In Storage Unit Design Selection: Food For Thought

- * How do farmers feel about their neighbors knowing how much grain they have in their store?
- * How much of a problem is theft.
- * Do farmers store enough grain to make building a separate storage unit worthwhile ... for how long do they store it?
- * Who is presently responsible for taking grain out of store? Man, woman, Child? Are they also responsible for rationing the amount taken?
- * Do the villagers themselves perceive a storage problem to exist in their village at either individual or group level?
- * What obstacles will the farmers face when attempting to implement the new ideas learned in the short course.

REMEMBER BRAINSTORMING: Brainstorming is perhaps most useful to learn as a beginning facilitator because it is simple and effective and has so many uses. Its power stems from a combination of the strategy of deferred judgment and the natural connective creativity of groups. The rules are simple: Everyone tosses out as many ideas as possible. The ideas are written down by the recorder. No-body is allowed to criticize or evaluate any ideas until after the brainstorming session is over.

That's all there is to it. However, you can also use the following techniques in a meeting, as a facilitator, to improve the effectiveness of a brainstorming session.

CLEARLY STATE THE CONTENT FOCUS: Make sure everybody knows what the subject is, i.e. what the focus of the brainstorming session will be: "Okay, the problem is what skills and knowledge leaders will need in the year 2000."

EXEMPLIFY THE METHOD IN ACTION: Try: "What would be a typical answer to this question? Yes, Maria." "Okay, leaders will still have to know how to communicate with their people. Does everyone understand what we're going to be doing?"

GET EVERYTHING READY: Before you begin a new procedure, think ahead to see if you are going to need any assistance or special equipment. You know brainstorming can be a strain on a recorder, since ideas come out fast, so arrange for an assistant recorder: "Okay, we're going to need another recorder to help out during the brainstorming session, since we are going to produce a lot of ideas and we don't want to be held back by the recording. Any volunteers? Thanks, Netta. A good coordinating technique for you and Robert is to take separate sheets of the group memory and alternate with the recording, writing down every other idea. Talk to each other, so you know who's recording which idea."

SET A TIME LIMIT: "Okay, in the next seven minutes ..."

AND AN OBJECTIVE: "... I'd like to see if we can produce seventy-five ideas."

ENERGIZE THE GROUP: "I'm sure we can do it. Think of yourself as popcorn kernels and the room as a giant popcorn popper. I'm going to turn on the heat and I want you all to begin popping with ideas."

MAKE A CLEAR START: Make sure everybody knows when you are beginning with the method. Don't let some people start before others. "Okay, the question is, 'What skills and knowledge will leaders need in the year 2000?' Remember, no evaluation. Let's begin. Who's got an idea?"

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REMAIN NEUTRAL-DON'T EVALUATE IDEAS OR OFFER YOUR OWN: In other words, perform the normal functions of the facilitator.

REINFORCE THE GROUND RULES OF THE METHOD: "Hold it, George! Don't evaluate Maria's idea. Do you have another idea? ... Good Who's got another?"

HELP THE RECORDER:

If you repeat an idea when it comes out, it gives the recorder a chance to hear it twice. When there are two recorders, you can keep track of who is recording what, and direct your voice to the next person to record. Slow people down when the recorder gets behind. "Who's next? Yes Barbara? Leaders will need to know how to work in groups. Got that, Nette?"

ENCOURAGE AND COMPLIMENT YOUR GROUP: "Hey, you're doing fine! You've got sixty ideas already. Only fifteen more to go. Last ones are sometimes the best. Keep pushing!"

KEEP STIMULATING CREATIVITY: When the production of ideas begins to slow down, you can stir up the action: "Try to think of the questions in a different way. For example, imagine what the world will be like in the year 2000. Will there be as many countries as there are today? Or one worldwide country? What kind of communication systems? What implications will these things have for leaders?"

DRAW PEOPLE OUT: Watch people's body language. Help people along, call them by name. "Francis, you look like you have an idea. How about it?"

MAKE A CLEAN ENDING: "Okay, one more ... Wonderful. We have seventy-five ideas. Well done. Let's close the brainstorming session. If you think of any other ideas, we can always add them to the list later."

You see, there are many techniques to help your group. That's why we keep reinforcing the fact that facilitation is an open-ended skill. There is always more to learn.

A TEACHING PACKAGE FOR:
A VILLAGE PLANNING SHORT COURSE
FOR VILLAGE LEADERS

Developed By:

A. Mtukwe

D. Acker

MATI, Mtwara.

ACKNOWLEDGEMENTS:

We gratefully acknowledge the participation of the District Development Director and the District Planning Officer, Mtwara, for their participation in the series of village planning short courses presented at MATI, Mtwara. We wish to give credit to World Education for their Problem/Resource Analysis exercise.

This Teaching Package includes the following to help you run an effective planning short course for village leaders:

Page 3.	.....	Goal
Page 3.	.....	Objectives
Page 4.	.....	Syllabus and Discussion Guide
Page 7.	.....	Timetable
Page 8 .	.....	Orientation For Trainers
Page 10.	.....	Problem/Resource Analysis
Page 12.	.....	<u>Example:</u> Observations
Page 13.	.....	<u>Example:</u> Recommendations
Page 14.	.....	<u>Example:</u> Planning Chart

G O A L :

To increase village leaders capacity to devise logical and practical plans of action which will benefit the village as a whole. To increase village leaders involvement in and ownership of the future direction of their village.

O B J E C T I V E S :

- 1) Identify Village Problems
- 2) Prioritize List of Expressed Village Problems
- 3) Discuss and Choose viable Projects to Solve The Most important problems.
- 4) Draw out calendar of work
- 5) Organize work
- 6) Design system of monitoring and control

VILLAGE PLANNING SHORT COURSE
SYLLABUS AND DISCUSSION GUIDE

OPENING:

What is purpose of this short course?

Village leaders learn here that the course is a workshop during which a lot of discussion will take place regarding the present and future picture of their village. By the time the course closes it is hoped that the Village leaders will have a fresh attitude toward planned change in their village. There are no official lecturers for this course because ~~the entire~~ a group of village leaders are the experts in that they know more about their village than anyone else. The discussion leaders will simply attempt to assist the village leaders in ordering the information they have and leading them to a point where they can verbalize their problems and needs.

A. Introduction

What kind of village would we like to live in?

A brief warm-up exercise to get the village leaders thinking positively about change and the future of their village. Dreams, hopes and wishes are welcome during this session. By the end of this session they should have a vision in their minds of what their village could be like if they made a concentrated effort to change and grow.

B. Planning

What are the benefits of planning?

This session examines the advantages of planning for a village. It will include a theoretical look at the effectiveness of groups that plan as well as series of case studies of villages that have planned successfully and developed as a result. Both village leaders and discussion leaders are requested to contribute case examples from villages they know of.

F. ORGANIZATION

What must we do to organize the project?

Work through with the village leaders a plan of implementation for one or more of their proposed projects. This plan would include:

Timetable

Project Name

What Committee will take responsibility for implementing the project (who is in charge)

Steps to be taken

Materials needed

Source of materials

Cost of materials

Tools required

Source of tools

Other

CLOSING:

Can planning really help us live better lives?

Leaders should see that planning their own development projects is the most effective way to change. It is better for the village because the village can control the process themselves. It is better for the district and regional officials who can spend more of their time working with your village rather than trying to make plans for you. And it is better for the Nation: if every village developed itself through its own plans then the whole nation would prosper.

T I M E T A B L E

DAY 1:

- 6:00 p.m. - Village Leaders Arrive
- 6:30 - Dinner
- 7:30 - Slide or movie show

DAY 2:

- 7:00 - 7:30 - Tea
- 8:00 - 8:30 - Opening ceremony
- 8:30 - 9:30 - Purpose and Introduction
- 9:30 - 10:30 - Benefits of Village Planning: Several Case studies
- 10:30 - 11:00 - Tea Break
- 11:00 - 12:30 - Problem/Resource Analysis
- 12:30 - 2:00 - Lunch Break
- 2:00 - 4:30 - Problem Prioritization and Discussion
- 4:30 - 6:30 - Afternoon Break
- 6:30 - Dinner
- 7:30 - Slide or Movie Show/Games

DAY 3:

- 7:00 - 7:30 - Tea
- 7:30 - 8:30 - Project Proposals for Village/Determine Training Needs.
- 8:30-10:30 - Communication of the Plan
- 10:30 - 11:00 - Tea Break
- 11:00 - 12:30 - Organization of Village Projects: Calendar of Work.
- 12:30 - 2:00 - Lunch
- 2:00 - 2:30 - Monitoring and Control By Production and Marketing Committee
- 2:30 - 3:30 - Discussion
- 3:30 - 4:00 - Participant Feedback Questionnaire
- 4:00 - 4:30 - Closing
- 4:30 - 5:00 - Move out of dorms/Check out
- 5:00 - Leaders return to Village

ORIENTATION FOR TRAINERS
VILLAGE PLANNING SHORT COURSE.

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DIALOGICAL TRAINING:

The Department of Agricultural Education and Extension at the Faculty of Agriculture, Morogoro, has done extensive research and testing on a technique they call dialogical extension. The results have been strikingly successful and are being picked up by ^{groups} in a number of extension endeavors throughout the country and continent. The basic notion behind dialogical extension is that the rural peasant has learned a great deal about surviving in his own environment through trial and error "research" over the years. Dialogical extension simply taps this vast potential store of knowledge and allows others to share it and add to it. The method involved, in its simplest form, utilizes dialogue or directed discussion in order to expose problem areas and subsequent solutions. A group facilitator, (like yourself) will sit with a group of farmers and through the course of a group discussion (or dialogue) help identify problems which farmers themselves perceive. By encouraging farmers to take a fresh look at an old problem and by getting farmers to "brainstorm" new ideas can surface for consideration by the group as a potential solution to the problem.

At the Wing we have adopted this method as our basic training method. For you, the trainer/facilitator it means that you won't have to prepare and deliver a lecture. Instead, you may spend your entire session probing farmers with leading questions, encouraging discussion etc. So instead of reading through your lecture notes you are involved in an exciting and dynamic learning environment. In the case of this short course you may wish to follow these rough guidelines:

1. Introduction of yourself and your professional areas of interest, eg: food crop production planning.
2. Start a discussion on food crop production planning, probe the farmers to contribute problems they have faced in their planning efforts. Probe to find out what examples of successful planning might be found amongst the group.
3. Lead the discussion into the area of what farmers think could be done to solve some of their problems eg: planning for sufficient labor to weed cassava.

Remember that the trick is to get villagers talking and listening to each other rather than having them listen only to you. Two years ago in Rome, President Nyerere said " rural development is people's development of themselves, their lives and environment. The people must participate not just in the physical labor involved in economic development but also in the planning of it and the determination of priorities."

The Farmer Training Wing experienced considerable difficulty in getting two villages to cooperate in implementing plans which the wing had devised for the village. After reviewing this difficult year we have come to the conclusion that had the village and the wing worked out the plans together then implementation would have been smoother with the villagers taking the responsibility to monitor their own progress.

Thank you ^{very} much for participating in the short course!

Farmer Training Wing Staff
M.A.T.I., Mtwara.

PROBLEM/RESOURCE ANALYSIS (Extracted from: From The Field by World Education)

TIME: 1½ Hrs.

"I was working with a group of men and women farmers who were community leaders. They were all from the same area and they knew each other but they never before had compared their perceptions of village problems. I wanted to introduce them to a brainstorming technique for problem solving and, in the process, to create a sense of group unity."

SETTING

A quiet, large enough meeting place

MATERIALS

Blackboard and chalk

OR

Newsprint and felt pen

Paper and pencils (enough for each participant)

CONDUCTING THE ACTIVITY

Step 1 - Have the participants identify the three most important problems facing them. This can be done by asking each participant to write down on a piece of paper his or her three most pressing problems and ready these aloud to the group. The participants may wish instead to call out their answers for the facilitator to write down.

Step 2 - Copy the table below onto the blackboard or newsprint:

Problem	Against	For	Goal

Under Problem, list one most pressing problem facing the participants. Under Goal, write the solution perceived by the participants.

...../2. conts.....

WORLD EDUCATION

- Step 3 - Ask the participants to list all of the things preventing them from solving their problem. These should be listed in the Against column. Next, have them list all the things working for the solution of the problem. It is then up to the facilitator to show specifically how the activities in the For column can overcome things in the Against column and aid the participants in achieving their goals.
- Step 4 - Repeat the process with the other two major problems perceived by the participants.

WHAT HAPPENED

The participants were really excited, both to realize that other people felt the same way about problems facing them and to see a longer list in the For column than in the Against column. They suddenly recognized that they had many resources they had never been aware of before. And they were delighted to discover that they could use those resources to solve their own problems.

Used by Bill Murphy in village seminars in Tanzania.

OBSERVATIONS: VILLAGE PLANNING SHORT COURSE

The following observations were made by discussion leaders about the course:

- Although the Farmer Training Wing is oriented toward solving agricultural problems of village farmers we found that villagers from these villages did not see agricultural problems as important. Instead, it was observed that other problems were more immediate. Water and its availability appeared to be the most important problem to villagers. Once water had been solved as a problem (as is the case to some degree in both Mbowala and Ziwayi which have shallow wells) then health care becomes the most important problem. This latter problem could be solved, according to the village leaders, by building and staffing a medical dispensary in their village.
- Village leaders were not aware in some cases that they would plan their own projects and take responsibility for their own development. Stories were told of district and regional officers and party members coming to the village to enforce directives such as types of crops to plant, acreages of certain crops to plant etc. Leaders told of their retreat far into the bush in order to secretly grow the crops that they wished while the crops that were forced on them were grown halfheartedly in the most visible areas. Leaders suggested that they were not the ones who really needed a course on planning but rather it is District and Regional officials and Party Leaders who need a course on farmers, how to treat them, etc. (Planning with the farmer as a human being in mind).
- Village leaders learned a process for planning with their village. They took this process back with them and met in their village government bodies and came up with a plan that they themselves felt ownership in.
- Village leaders were surprised to hear of case examples of other Makonde villages in the Region that were already self sufficient in food or already were well on their way to self development. Examples of villages who are planning their own future successfully were very useful in expanding the vision of village leaders. However, if the example was taken from a different ethnic group the leaders reaction was often one of incredulity. ("Of course it can work in that region but we can't do that here.")
- If villagers are to decide on a goal themselves then the implementation of the project leading to that goal will be in their own self interest. Consequently, the village will not require constant pushing by outside officials. On the other hand, villages that are given a goal decided upon by district or regional authorities will require constant force in order to get them to implement because villagers do not see the the goal as their own and may not benefit them at all.

RECOMMENDATIONS: VILLAGE PLANNING SHORT COURSE.

The following are recommendations for consideration by those working in offices related to planning and project implementation in the fields of agriculture, water and health.

- A seminar should be sponsored by the Farmer Training Wing at which the issues surrounding goal directed village planning can be discussed. This seminar should include participants from District and Regional offices, MACT and CCM representatives from Wards, Divisions and the District. At this seminar it would be useful to compare the methodologies and results of past village planning and development efforts with those being proposed and tested by the Farmer Training Wing.
- The opportunity to attend a planning short course should be made available to other village leaders in the district and region.
- Feedback on the short course process should be given to the Farmer Training Wing so that it can continue to revise the methodology used in the course. Any criticism is welcome. Please stop by any time to discuss your thoughts.
- An evaluation should be made at the end of this cropping year to determine village leaders progress in implementing the planned change. The data arising from this evaluation will also help the Farmer Training Wing to assess the effectiveness of its Village Planning Short Course approach.

	MALIENDELE	MDU
PROBLEMS	W A T E R DISPENSARY POULTRY DISEASE FARM TOOLS: Jerbe/Files.	W A T E R DISPENSARY SCHOOL TRANSPORT FARM TOOLS STORAGE STRUCTURES
PRIORITY PROBLEM	(1) W A T E R (2) FARM TOOLS	(1) W A T E R (2) DISPENSARY
GOAL	PIPED WATER SUPPLY	PIPED WATER SUPPLY
SOLUTIONS.	RAISE MONEY TO SHOW CENTRAL GOVERNMENT THEIR COMMITMENT TO AN EARLY SOLUTION. MONEY WOULD BE APPLIED TOWARD WATER PROJECT. -MONEY TO COME FROM PROJECT.	- RAISE MONEY TO SHOW CENTRAL GOVERNMENT THEIR COMMITMENT TO AN EARLY SOLUTION. MONEY WOULD BE APPLIED TOWARD WATER PROJECT. - MONEY TO COME FROM PROJECT.
PROJECT(S)	GROUNDNUTS 50 ACRES SIM SIM 50 ACRES	GROUNDNUTS 50 ACRES
TRAINING NEEDS	GROUNDNUT PRODUCTION SIM SIM PRODUCTION	GROUNDNUTS PRODUCTION
BEGIN	VILLAGE MEETING BEFORE OCT. 10	IMMEDIATELY
COMMUNICATION PLAN	(1) C.C.M. EXECUTIVE COMMITTEE. (2) VILLAGE COUNCIL (3) VILLAGE WIDE MEETING	(1) VILLAGE COUNCIL (2) CCM EXECUTIVE COMMITTEE. (3) VILLAGE WIDE MEETING
PROBLEM/COMMENT		
WING ACTION	OCT. 10: FOLLOW UP TO GET TIMETABLE	OCT. 10: FOLLOW TO GET TIMETABLE.

...../2. conts.

	MBAYATA	MBAYATA (2nd)
PROBLEMS	W WATER TRANSPORT MEDICAL SERVICES MILLING MACHINE CONSUMER GOODS Tools/Ag. Equipment:	SUFFICIENT + CLEAN WATER MEDICAL SERVICES TRANSPORT MILLING MACHINE CONSUMER GOODS
PRIORITY PROBLEM	(1) DISPENSARY (2) AG. TOOLS/EQUIPMENT	(1) MEDICAL SERVICES (2) WATER
GOAL	MEDICAL CENTER	DISPENSARY OR MEDICAL AID
SOLUTIONS	<u>MONEY:</u> (1) Groundnuts (2) Cassava. <u>COOPERATION:</u> Intro. of Bylaws Education re: Projects. <u>EXPERIENCE:</u> Ask Cent. Govt. for a Rural Medical aid Officer and construction expert. <u>BUILDING MATERIALS:</u> Central Govt. RDC Cement and Iron Sheets	<u>BUILDING MATERIAL:</u> Cement/Iron Sheets Central Govt. - RDC. <u>EXPERIENCE:</u> - Medicine - Cent. Govt. <u>COOPERATION:</u> Education and Bylaws. <u>MONEY:</u> - 2 Projects (1) (2) (1) Sorghum-Cassava/Sorghum (2) Groundnuts
PROBLEMS	W WATER TRANSPORT MEDICAL SERVICES MILLING MACHINE CONSUMER GOODS Tools/Ag. Equipment:	MEDICAL SERVICES TRANSPORT MILLING MACHINE CONSUMER GOODS
PROJECTS (S) PROBLEMS	CASSAVA: 80 ACRES GROUNDNUTS: 20 ACRES	GROUNDNUTS: 60 ACRES CASSAVA: 20 ACRES SORGHUM
TRAINING NEEDS	GROUNDNUT PRODUCTION CASSAVA PRODUCTION	GROUNDNUTS PRODUCTION CASSAVA PRODUCTION
SOLUTIONS	<u>MONEY:</u> (1) Groundnuts (2) Cassava	<u>SORGHUM PRODUCTION:</u>
BEGIN	BY OCT. 10 Intro. of Bylaws	OCT. 5-7th MEETING. EXPERIENCE: - Medicine - Cent. Govt.
COMMUNICATION PLAN	(1) CCM PLANNING COUNCIL (2) VILLAGE COUNCIL (3) VILLAGE WIDER MEETINGS	(1) C.C.M. PLANNING (2) VILLAGE COUNCIL Bylaws. (3) VILLAGE WIDER MEETING.
PROBLEM/COMMENT	CONSTRUCTION	(2) GROUNDNUTS
PLANNING ACTION	CONSTRUCTION GET TIMETABLE	OCT. 10: FOLLOW UP TO GET TIMETABLE.

ANNEX 6

Documentation Possibilities

DOCUMENTATION POSSIBILITIES

It's time to determine what specific experiences will be reported. Some possibilities:

Models of village survey questionnaires

Experiences with X number of different approaches in introducing village changes.

An introduction to agricultural extension philosophy and methodology.

Extension methods: Organizing and using the village committee

The Method Demonstration

Organizing and Conducting a Field Day (Farm Walk)

The Result Demonstration lets the farmer decide

Conducting a Village Survey

Women as participants in rural programs

Choosing village leaders - The change agents

The diffusion of new ideas

Program Planning

Farm women as decision makers

Communication Techniques

Village Land-Use-Plans

The Farms Visit

Adaptive Research Trials link Research to Farmers

Experiences in introducing animal power to small-scale farmers

On-the-Farm "package" demonstrations

Reaching the Farmers of Tomorrow - Rural Youth Organizations

Reaching the Entire Family through Agricultural Extension

Guide for Farmers Short Course: Groundnut Production (X days)

*Maize Growing (X days)
etc, etc, etc.

*Poultry production

*Rabbit Raising

*The Home Vegetable Garden
Grain Storage

*Also possible for rural youth work.

*Also possible for rural youth program.

Organizing in-service training for Extension Agents

In-service training modules for paratechnicians (The T-A-V System)

Involving agricultural students in field trials

The Farmer Training Wing - linking Research, Extension and the Farmer

The Calendar of Work

The Train-and-Visit System - A Tanzania Experience

Teaching Packages: rice, maize, sorghum, cashew, poultry, etc.
(for Institute use).

ANNEX 7

Description of Ministry of Agriculture
Training Institutes and Farmer Training
at Nyegezi, Mwanza; Uyole, Mbeya; Mlingano, Tanga; and Mtwara

FARMERS' TRAINING WING, UAC, UYOLE, MBEYA

E.M. NGAIZA

1. Staff:

- | | |
|---------------------|------------------------|
| (a) Peuse, H. Gene | American Technician |
| (b) Nyamasagi, R.N. | Co-Worker, Counterpart |
| (c) Kusaga, O. | Returned Participant |

2. Location:

This Farmers' Training Wing is situated at UAC - Mbeya about 10 km. from Mbeya town. It is in the southern highland area, where climate and soils are quite good for agriculture.

3. Farmer Training Wing Activities:

The American technician arrived at the Wing in October 1980. Assigning of a local counterpart was not done until mid-1981. This delayed the Wing activities.

Collection of data was the first undertaking of the Wing after getting the concurrences of village leaders. Students in 2nd Year Diploma Course were well involved in this exercise. When these surveys were completed, the data was analyzed. The farmers' main problems were identified as lack of inputs and ox-drawn equipment. The Wing then made arrangements to obtain these inputs, especially fertilizer, shears for ox plows, and cultivators. It also arranged for demonstrations on how to use these inputs.

Other Wing activities involved using students and farmers in setting demonstration plots in the villages working with the Wing. The early demonstrations on potato raising using fertilizer and correct spacing gave very good results. These, as well as demonstrations on raising maize were done on communal farms.

The Wing staff participated fully from the planning through the follow-up stage. The students' field experience is integrated with the classroom studies. At this Institute the extension course is taught by the

Wing staff as well as the regular staff. The diploma in Crop Production is also offered .

The Wing has worked with the research and district and extension staff in its activities when dealing with the farmers. The approach in villages has always involved CCM leaders before dealing with the individual farmers. The response of the farmers to the Wing services is enthusiastic.

The Director of the Center and the Principal are also very interested in this project and think it has established a closer linkage and a more detailed understanding of the farmer than ever before. They expressed desire to have Wing activities continue and, when possible, to spread to other villages and districts.

It was learned that the American expert will terminate his contract after the end of the present one. A replacement will be needed if Wing activities are to continue. In general, the farmers, local leaders and UAC leadership want the FTW activities to continue.

MATI MLINGANO

S.A.N. MURO

The Institute is located about 18 miles west of Tanga town in the midst of large sisal estates, dairy farms and a cattle ranch which belong to Tanzania Social Authority. Next to the MATI is the Mlingano Research Institute.

MATI Mlingano has specialized in the training of farm managers and agro-mechanics at diploma level. Current capacity is about 85 students. On graduation, these students are posted to Parastatal and Government farms. In the future, where conditions so permit, some of these farm managers will be posted at village level to manage village communal farms.

Village Outreach Activities

The Farmer Training Wing activities started after the arrival of the Rural Development Specialist in September 1980. The Wing has a staff strength of 5 members and is involved in the agricultural development of several neighboring villages. Originally the Wing was working with 4 villages, but now its activities have spread to about 12 villages. The Wing is cooperating with the RADO DADO, Research, National Coconut Development Project and TIRDEP (Tanga Integrated Rural Development Program) in the planning and executing of its programs. In this way, the Wing has acted as a catalyst, bringing together various institutions in a program of farmer education.

An outstanding feature of the farmer training activities here, is the use of village bwana shambas (para-technician extension workers) trained at the wing for 7 weeks. This has facilitated the linkage between MATI and village activities. These previously untrained village workers are employed by the village governments and work under the supervision of District Agricultural Development Officers. The 7-week training course was funded by TIRDEP, but organized by the Wing staff. The extension approach is patterned after the Train-and-Visit system.

Besides this, the Wing has organized eight farmer training courses on cereal grains and other food crops, tree crops production, village/farm planning and human nutrition. The need for this training was identified during the survey. The Wing is assisting in the procurement of coconut and citrus seedlings which the farmers need. The Wing is also running crop demonstrations in the villages. The Regional Extension office is planning to use the Wing to provide in-service training for its 250 Extension Officers. This appears a major emphasis in future Wing activities.

MATI MTWARA

S.A.N. MURO

This institute is located in the southern part of Tanzania and is about 8 miles outside of Mtwara town. The area in which the Institute is situated is dry and has relatively low development potential, except for oil seeds and cashew nut production. Located on the same site as the MATI, is the Naliendele Research Institute which has been concentrating its research on oil seeds and cashew.

The MATI trains students for the general certificate in Agriculture. The Farmer Training Wing became operational with the arrival of the Project leader in August 1980. The Wing has 4 staff members, two of whom are doing their National Service and one is on loan from the district Agricultural Development Office. At present the staff position support is comparatively low, and is worsened by the fact that the U.S.-trained participant has not been made available to understudy the Rural Development Specialist.

Despite the shortage of staff, Mtwara Wing has consistently been on the right track as far as implementing project objectives is concerned. More has been accomplished here than at any other site. Among the activities which are being undertaken by the Wing are the following:

- (i) Technical Assistance to the village projects and demonstration plots (e.g., groundnut demonstration, rabbit, and goat projects).
- (ii) Various short courses have been conducted and attended by farmers from the four villages. In addition to residential training, some of the courses have been conducted at village level to minimize cost.
- (iii) The Wing has involved MATI staff and students in data collection and analysis -- 9 staff members and 48 students were involved in this exercise.

- (iv) Village leader survey, household survey, and student opinion survey have been administered. Also, village level extension worker attitudes and practice survey has been developed and field tested.
- (v) Besides these activities, the Wing has managed to establish and strengthen the linkage between Research, Extension, and the MATI. Working relationships with research and extension were excellent.

FARMERS' TRAINING WING, MATI NYEGEZI, MWANZA
E. M. Ngaiza

1. Staff:

- a) SMITH, C.O. -- American Technician
- b) MUTAKYAMIRWA, S. -- Co Worker
- c) MASHIBA, J. -- Returned participant
- d) SANGE, J. -- Wing Staff
- e) SUSUMA -- Wing Staff

2. Location:

The Farmers' Training Wing at Nyegezi is located just outside Mwanza town about 11 km from the town. It is in a Lake Victoria Zone where cotton is a major cash crop. This is a marginal agricultural area with low and unpredictable rainfall, poor soils and a high human and livestock population.

3. Farmers' Training Wing Activities

The Farmers' Training Wing activities began in April 1980 with the arrival of Mr. Smith, the American technician. The local counterpart, Mrs. Makwaid, joined him as a nutritionist expert but her transfer to another MATI slowed down the Wing's activities in terms of rapid farmer outreach.

In this Institute there are three courses offered: diploma courses in irrigation, Agromechanization, and a certificate course in Land Use Planning. In view of the specialized nature of the diploma courses, students' involvement in Farmer Training Wing activities has been limited to land planning certificate course students only.

The Wing started off its activities by designing a questionnaire that was to be used to carry out interviews with the household surveys. Meetings with village leaders, institute extension staff and district extension staff were called to introduce the ideas of the Farmer Training Wing. Three villages

were selected to start with. When the procedural matters were completed and the approach to work with the villages agreed upon, field work with students, Wing staff and farmers began.

The FTW, with the help of 2nd year certificate land planning students carried out the household survey. What had been learned from the survey was the basis for subsequent staff activities in the three villages. These villages are Luche ele, Mkolani and Bukangwa.

It was observed that these villages have the following problems:

- a) Farmers low drive to produce
- b) Overstocking of livestock
- c) Lack of knowledge in irrigation
- d) Poor agricultural practices in raising sorghum and millet
- e) Nutritional problems
- f) Shortage of firewood

In order to tackle these problems, the Wing called village leaders to the Wing at the Institute to have a familiarization session and to talk about these problems. From the seminars which lasted for two days each, the Wing established a base and contact committee that would work as a link between the Wing and the farmers. At present, the leaders have gained confidence in the Wing and are developing the ability to solve their own problems.

For the first year the Wing carried out village demonstrations on sorghum and bullrush millet which were successful. The second year, the same exercise has been done with limited results because of the poor weather conditions. The Wing has established a livestock committee in each village. It has a program to introduce rabbits and poultry in villages to raise the nutrition standard, and has a youth program of tree planting to build a firewood reserve for future years so that manure can be used to improve soil fertility instead of being used as fuel. The Wing is working with farmers to establish backyard

gardens and using water pumped by a rope pump under the advice of the irrigation department as a small-scale irrigation project.

There has been very little documentation of Wing activities at this MATI. Working with research and using research information or package has been very small. The regular extension and Wing activities need to be strengthened. Extension-Research-Wing linkage needs more coordination. Most Wing linkage has been direct involvement with the village leaders and farmers. Some training sessions have been conducted at the MATI or village. In general the Wing activities have not had the anticipated impact on the farming community largely because there are no general agriculture students being trained at the MATI.

The Institute leadership, especially the principal, the coordinator of studies and the leader of the German project feel that Project has much to offer. It was explained that the attitude of the farmers to change their agricultural methods of production is slow or almost negative. This also has hindered a faster takeoff of the Project. It was a general feeling of the interviewed staff that this project is helpful to the farmers although not much extension knowledge is learned by students. Since the focus is the farmer, the project works directly to advance farmers by using the land planning course as a takeoff point in farmers' Wing activities.

ANNEX 8

Scope of Work for Evaluation

CONTINUATION
SHEET

UNITED STATES INTERNATIONAL
DEVELOPMENT COOPERATION AGENCY
AGENCY FOR
INTERNATIONAL DEVELOPMENT

- PIO/C
 PIO/P
 PIO/T
 PA/PR

<input type="checkbox"/> Worksheet	<input checked="" type="checkbox"/> Invoice	PAGE <u>A</u> OF <u>8</u> PAGES
1. Cooperating Country United Republic of Tanzania		
2a. PIO Number 621-0119.1-3-7017	2b. Amendment <u>130</u> Original OR No. _____	
3. Project Number and Title 621-0119.1 Farmer Training and Production		

Indicate block
numbers

Use this form to complete the information required in any block of a PIO/P, PIO/T or PA/PR. For PIO/C, furnish the item number, quantity, description/specifications, including catalog stock number and price when available.

ATTACHMENT NO.

18

STATEMENT OF WORK

I. TITLE: Farmer Training and Production *101* Project (621-0119.1).

II. OBJECTIVE:

The Contractor shall provide technical assistance to USAID/Tanzania for a mid-project evaluation of the Farmer Training and Production Project, 621-0119.1, and prepare a report setting forth its findings and reasons thereof.

III. SCOPE OF WORK:

The Contractor shall serve as a technical resource to USAID/Tanzania in conducting a mid-project evaluation of the subject project and as a drafter of a final evaluation report of findings, reasons, and analysis. In performing this function the Contractor shall investigate and evaluate project components according to the outlines set forth below. However, the Contractor shall not limit its investigation to these project components, nor to current activities within each component. The Contractor shall investigate other components and/or related issues--both past and current--which it considers relevant for performing a comprehensive evaluation.

A. Concerning project goals, objectives, and outputs, the Contractor shall establish:

1. whether project goals, objectives, outputs and verifiable indicators as stated in the project paper and logframe are realistic and can be accomplished with the proposed project inputs;
2. if the present logframe is not a viable instrument against which to test the project's progress, a substitute logframe shall be prepared;
3. actual project outputs accomplished; and
4. how project objectives and inputs could be restructured to accomplish the present or revised project outputs

CONTINUATION
SHEET

UNITED STATES INTERNATIONAL
DEVELOPMENT COOPERATION AGENCY
AGENCY FOR
INTERNATIONAL DEVELOPMENT

Worksheet Issuance

PAGE 5 OF 8 PAGES

- PIO/C
 PIO/P
 PIO/T
 PA/PR

1. Operating Country
United Republic of Tanzania

2. PIO Number
621-0119.1-3-70174

2a. Amendment
 Original OR No. _____

3. Project Number and Title
621-0119.1
Farmer Training and Production

Indicate block
numbers

Use this form to complete the information required in any block of a PIO/P, PIO/T or PA/PR. For PIO/C, furnish the item number, quantity, description/specifications, including catalog stock number and price when available.

18

B. Concerning project implementation and management the Contractor shall:

1. assess the project's proposed implementation plan and Contractor's timetable to ascertain whether the project has remained on course with its required schedule of implementation actions; if project is behind schedule, determine the degree to which project objectives can be accomplished by the PACD.

2. assess the quality and effectiveness of the project implementation and management; and

3. assess the appropriateness and the effectiveness of the project's farmer training short courses and curriculum.

C. Concerning project site selections the Contractor shall establish:

1. degree to which project objectives and outputs can be achieved at MATIs Nyegezi and Mlingano where extension training is considered a minor part of the regular curriculum and training program; and

2. feasibility of transferring or eliminating the two (2) project technicians at the above MATIs to more appropriate locations to facilitate the testing of the project's design.

D. Concerning Tanzanian Government support the Contractor shall:

1. establish the extent to which the TanGov support has facilitated or impeded implementation and achievement of project objectives;

2. comment on adequacy of Tanzanian personnel assigned to the project; and

3. determine whether adequate funds are being budgeted by the Ministry of Agriculture to support the project.

E. Concerning continuation of the project, the Contractor shall:

1. assess the need at each of the four MATIs to continue to provide a technician to carry out the objectives of the proje

CONTINUATION
SHEET

DEVELOPMENT COOPERATION AGENCY
AGENCY FOR
INTERNATIONAL DEVELOPMENT

Worksheet Invoice PAGE 0 OF 2 PAGES

1. Country
United Republic of Tanzania

2a. PIO Number
621-0119.1-3-70174

2b. Amendment
 Original OR No. _____

3. Project Number and Title
621-0119.1
Farmer Training and Production

- PIO/C
- PIO/P
- PIO/T
- PA/PR

Indicate block
numbers

Use this form to complete the information required in any block of a PIO/P, PIO/T or PA/PR. For PIO/C, furnish the item number, quantity, description/specifications, including catalog stock number and price when available.

18

i.e., to assess the feasibility of the project activities meeting their objectives both with and without the continued participation of the technicians.

2. make recommendations concerning the future inputs of the project. Based on the analysis in Part A, recommend whether and at what scale project activities should continue. Recommend a budget which reflects these changes.

F. For final analysis, conclusions, and recommendations the Contractor shall:

1. write a thorough analysis of their findings concerning the issues set forth in the above project components; and

2. based on this analysis, develop recommendations as to whether the project should continue with its original implementation plan and objectives or be restructured and scaled down to reflect more realistic objectives and outputs.

ANNEX 9

People and Sites Visited and Documents
Used in Evaluation

ANNEX 9

People Visited: AID Director
AID Agricultural Development Officer
AID Project Manager
WVU Project Coordinator
Contractor Project Leader
Principal Secretary, Kilimo
Director of Manpower and Administration,
Kilimo
Chief Training Officer, Kilimo
Director of Manpower and Planning, Kilimo
Director of Research, Kilimo

At the Four MATIs: Contract technician and counterpart
Principal of the Institute
Director of Research
FTW tutors
MATI staff members
RADO or DADO where available
MATI students
Village Chairman
Other village officers
Village farmers
Returned U.S. participants

Documents used in evaluating Project

Project Paper

Project Agreement and Amendments

PIO/T and Amendments

PIO/P and Amendments

PIO/C and Amendments

Contract Between AID and WVU, with

Modification No. 2

1st Annual Report of Project by WVU

2nd Annual Report of Project by WVU

USAID Evaluation of Project, July 1981

External Appraisal of Project, April

1981 by Bruce Lansdale

Statement of Work (PIO/T) for This Evaluation