PD-AAJ-699
ISN 1249

TERMINAL EVALUATION OF THE AGRICULTURAL MANPOWER DEVELOPMENT PROJECT: TANZANIA

(AID PROJECT NO. 621-0119)

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Contract # AID/SOD/PDC-C-0223 - Work Order #6

May 30, 1980

ABOUT THIS REPORT

This report provides the terminal evaluation of the Agricultural Manpower Development Project (621-0119) in Tanzania. It documents the large amount of high quality effort provided by all the individuals who participated in the Project and the other inputs provided as part of the Project as well. The appropriateness of the resources available to the Project is assessed, the effectiveness with which these resources were managed by all action agencies is evaluated, and the degree of achievement of project goal, purposes and outputs is noted.

The summary conclusion of this report is that, while some planned project results were achieved, the most important purposes of the Project were not attained. The institutional capacity of the two MATIs (Ukiriguru and Mpwapwa) that received most project resources did not improve significantly, nor did the planned number of students to be trained at the two MATIs materialize. The trained manpower resulting from the participant training component of the Project was not applied to the achievement of project purposes as planned.

The main value of this report is in its recommendations for the design and implementation of similar training projects in Tanzania and elsewhere. These recommendations can be found in the Executive

Summary and, in more detail, throughout this report. Short term recommendations for completing the Agricultural Manpower Development Project are also included in the Executive Summary and in the report.

ACKNOWLEDGEMENTS

The Devres Evaluation Team wishes to express thanks for the exceptional support and assistance received from officers at the MinAg's MDD and AID/T. The Team expresses special thanks to Dr. Marion Kohashi, AID/T Project Manager, and to Dr. Lloyd Pickett, WVU-NCATSU Project Chief of Party, for their guidance and help during this evaluation. Special thanks also are expressed to all the Project field technicians and their wives at the two Project-supported MATIs for their open, candid cooperation, the good companionship and excellent cooking during the visits to the MATIs. The Team is grateful also to the two MATI Principals and their staffs for their excellent cooperation and assistance, and to Julie Wolff, AID/W, for her support of the evaluation effort in Washington. The excellent work done by Vivian Harvey and Kay Pickett in Tanzania and by Doris Schraft, Kathleen Wills and Beth Jackson of Devres, Inc. in Washington in support of the Evaluation Team is very much appreciated.

WEIGHTS AND MEASURES: EXCHANGE RATES: ABBREVIATIONS

WEIGHTS AND MEASURES

1 kilogram (kg.)	=	2.204 pounds
1 metric ton	=	1,000 kg.
	=	2,204 pounds
	=	0.948 long ton
	=	1.102 short ton
1 kilometer	=	0.621 miles
1 hectare	=	2.47 acres

EXCHANGE RATES

8.17 shillings	=	U.S. $1.00

ABBREVIATIONS

Agro-Vet	-	Certificate Syllabus for MATI System
AID/REDSO	-	Agency for International Development, Regional Economic Development Support Office
AID/T	-	Agency for International Development, Tanzania Mission
AID/W	-	Agency for International Development, Washington, D. C.
AMDP	-	Agricultural Manpower Development Program
CCEA	-	Center for Continuing Education in Agriculture
COP	-	Chief of Party
CPO	-	Chief Planning Officer
CTO	-	Chief Training Officer
DAEE	-	Department of Agricultural Education and Extension
DES	-	Dar es Salaam
DMD	-	Director of Manpower Development, Ministry of Agriculture
FAF	-	Faculty of Agriculture and Forestry
GSO	-	General Service Officer (AID/T)
IDA	-	International Development Agency (Soft-Loan Window of World Bank)
Logframe	-	Logistical Framework (for an AID project)

MATI	-	Ministry of Agriculture Training Institute
MDD	-	Manpower Development Division, Ministry of Agriculture
MinAg	-	Ministry of Agriculture
NCATSU	-	North Carolina Agricultural and Technical State University
PP	-	Project Paper
ProAg	-	Project Agreement
PROP	-	Non-Capital Project Paper
TanGov	-	Government of Tanzania
UDES	-	University of Dar es Salaam
USAID	-	United States Agency for International Development
USDA	-	United States Department of Agriculture
WVU	-	West Virginia University

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I. EXECUTIVE SUMMARY

A. Purpose

The purpose of this report is to provide the terminal evaluation for the Agricultural Manpower Development Project (621-0119) in Tanzania.

B. Procedures

A two-person team consisting of Robert H. Dodd and Dennis H. Wood conducted this evaluation, including the drafting of this report, over a four-week period between April 13 and May 12, 1980.

The evaluation team reviewed all project records available in Washington, D. C. and Dar es Salaam. They made field trips of several days each to Ministry of Agriculture Training Institutes (MATIs) Ukiriguru and Mpwapwa and spent most of one day at MATI Ilonga (see Figure 1). Interviews were carried out with Ministry of Agriculture officials in Dar es Salaam; with MATI administrators, tutors, students, former students, and returned participant trainees; with West Virginia University-North Carolina Agricultural and Technical State University (WVU-NCATSU) staff and the Chief of Party (COP); with the Agency for International Development/Tanzania (AID/T) Mission Director and other personnel. Careful observation was made of MATI facilities, including classrooms, laboratories, livestock and crop facilities, equipment, teaching materials and records. Both classroom and practical exercises

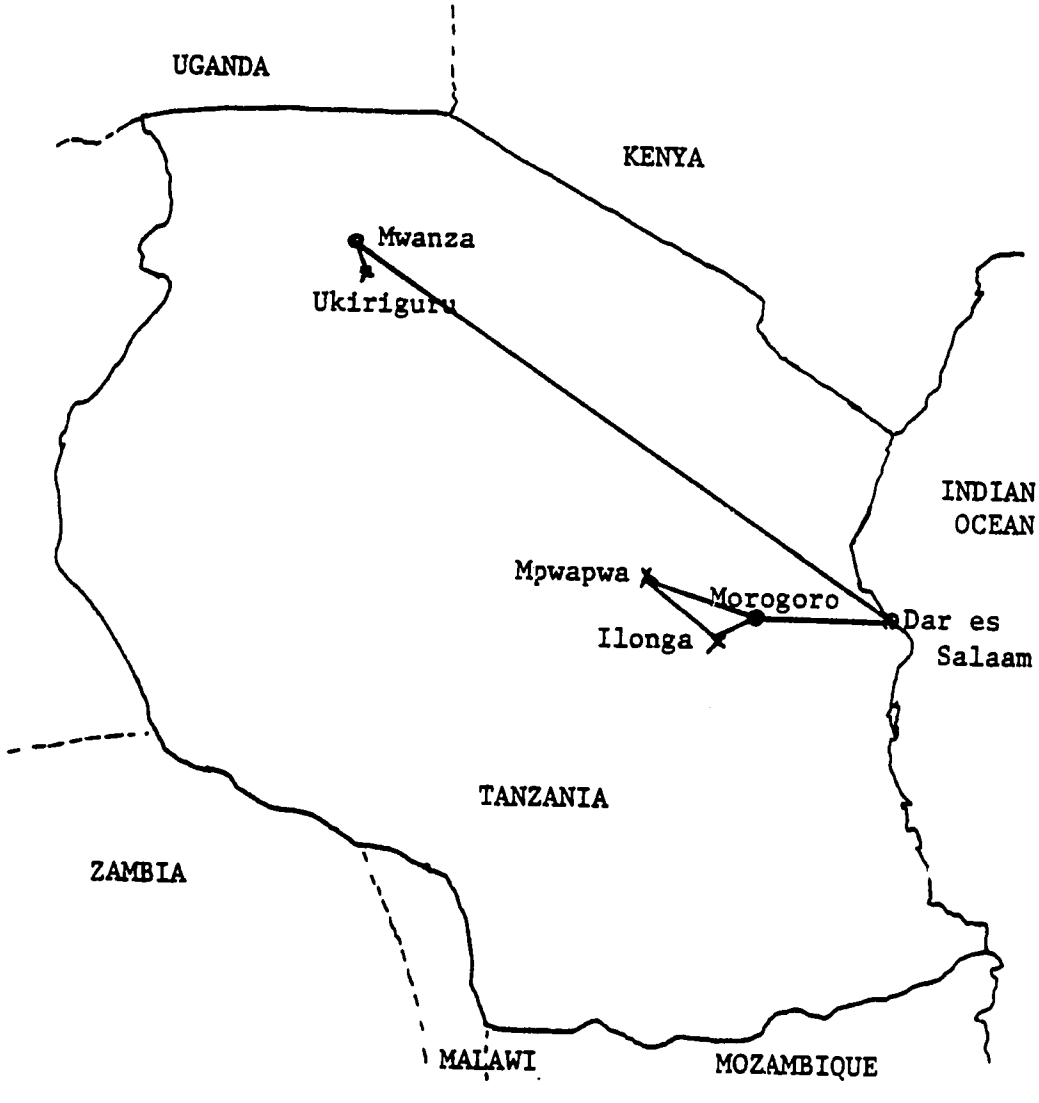

Figure 1. — Location of MATIs Ukiriguru and Mpwapwa and Travel of Devres Evaluation Team in Tanzania

at the MATIs also were observed.

Every attempt was made in carrying out the evaluation to be objective, and to include successful activities as well as failures to achieve planned results. This project, however, failed in substantial part to achieve its planned outputs and purposes. Documenting this failure and concentrating on its results and causes have given this evaluation report a decidedly negative tone. The recommendations developed are positive, though, and they should be very useful to those designing and implementing training and other projects in Tanzania.

C. Conclusions

1. Potential

- The Project had the potential to achieve most of its planned purposes. The planned inputs were adequate, both in quantity and quality, to make some long-term improvements in the overall quality and capacity of the MATI system and especially to significantly improve the long-term quality of instruction and other institutional capacities of MATIs Ukiriguru and Mpwapwa. Inputs were also sufficient to meet the participant training target of the Project.

2. Inputs

- The Manpower Development Division (MDD) of the Tanzania Ministry of Agriculture (MinAg), WVU-NCATSU, and AID/T were enthusiastic about the Project and worked hard to implement it successfully. The WVU-NCATSU field staff worked with high enthusiasm despite the pressures of their multiple responsibilities and difficult living conditions. Likewise, both COPs carried extremely heavy work loads and contributed a great deal in a multitude of ways to their own staff, to MDD, and to the Project as a whole. Many MDD and MATI staff and students joined in with

exceptional contributions; AID/T worked systematically to help the Project succeed. All of these people deserve compliments for their dedication and effort in the difficult day-to-day and week-to-week implementation of the Project.

- Numerous individual (as opposed to "project") achievements resulted from the inputs, energy, skill and other resources devoted to the Project. Students and Tanzanian tutors were challenged, MATI operational systems were streamlined, curriculum ideas were suggested, equipment maintenance was regularized, participant trainees returned as success stories, new classroom teaching materials were used, library and other studies were undertaken, and so on. Taken together, these daily and monthly achievements contributed significantly to those "project" accomplishments that were realized.

It is part of the evaluators' task to note the appropriateness of daily activities and project inputs such as those noted above. These, however, tell very little of the important story. The most critical part of the evaluation task is to assess the effectiveness of these inputs in producing planned "project" outputs. The basic questions here, then, are: (1) for the presence and performance of WVU-NCATSU personnel, for the participant training effort, for the involvement and contribution of Government of Tanzania (TanGov) personnel, for the commodities supplied, for AID/T's guidance and support; for this entire package of inputs, what, in an overall sense, was accomplished?; (2) how does this accomplishment accord with what was planned?; and (3) what accounts for the failure or success of the Project in reaching the desired level of accomplishment? The conclusions reached by the Devres Evaluation Team in all three areas follow.

3. Actual Project accomplishments

- The Project achieved limited success in strengthening

the overall MATI system; some improvement in the instruction and institutional capacity of MATIs Ukiriguru and Mpwapwa; the training of 61 participant trainees in the U.S. and the posting of returned trainees to jobs in the agricultural sector; the exposure of nearly 1,000 students in the two MATIs to expatriate instruction in selected subject matter areas; and, the conduct of five special studies.

4. Planned accomplishments

- As important as the Project's accomplishments were, they fell far short of what the Project set out to achieve. The overall MATI system was to be strengthened substantially in many areas where the Project made little lasting contribution; MATIs Ukiriguru and Mpwapwa were to be virtual centers of excellence, with B.S. degree holders making up two-thirds of the staff and where teaching was to be based on improved curricula, teaching materials, and exceptional teaching abilities among the staff.

- Nearly 1,900 students were to be exposed to expatriate instruction in an even greater number of subjects in the two MATIs. Only in the case of the number of participant trainees and the conduct of the manpower survey and study of the Department of Agricultural Education at Morogoro did the Project fully achieve its planned results. Even then, the quality of training that was to be obtained by participant trainees was not completely realized.

- The Project did not achieve any unplanned or unspecified results of a completely redeeming nature. Only the use of returned participant trainees in posts outside the MATI system and the conduct of extra studies--Farmer Training, Curriculum Development and Library Improvement--qualify, and they alone are not significant enough accomplishments to offset the failure of the Project to achieve its own planned results.

5. Reasons for not reaching planned levels of accomplishment

- The Project lacked focus as a matter of design. It did not have a clear higher goal or a well understood central theme to which all of its many activities could be related.

- Project managers did not clarify the vision of what they hoped to achieve. Baseline data were not developed, re-design of the Project was not achieved,

and planned results were neither clearly articulated nor understood. This made it difficult in the end to know precisely what had been achieved and to what degree.

- Implementation of the Project proceeded without an agreed upon framework to guide the application and conversion of inputs into planned outputs. This led to some inputs not being made available, while others were applied to other objectives or under-utilized. Intermediate outputs, such as returning participant trainees, were diverted from planned uses. Project activities, then, became more and more unrelated to planned project outputs until, in the end, many planned results were not achieved.

Numerous other conclusions can be found in the body of this report.

D. Recommendations

The following are the central recommendations of this report. Many additional recommendations are made at the conclusion of the various chapter sub-sections.

1. For future projects

- Emphasis should be given to developing baseline data for projects of this type, especially during the project identification and design stages. The need for baseline data should be included in AID-contractor contracts and AID-Government Project Agreements (ProAgs). All project reviews should be based upon baseline data and desired project results.

- Detailed attention should be given to the responsibility, authority, communication and other management and implementation aspects of projects during the design stage. A master implementation plan should be developed and agreed upon by all action agencies during the earliest stages of implementation.

- Training projects should be based on an in-depth analysis that includes consideration of the presence, magnitude and quality of the system into which trained manpower will flow.

- Training projects should be required to continuously complete and distill means of verification for all indicators during project implementation. Evaluations should identify basic design flaws and develop suitable ways to enhance project achievements.

- Scheduled meetings on at least a quarterly basis should be held between the AID/T Mission Director, the senior government official responsible for the Project and the COP for each major implementation project.

- In similar future projects involving an outside contractor, AID should assure that senior management at the home office of the contractor institution is responsible for not only budget, but also program aspects of a project and that the project is implemented according to a design and implementation plan agreed to by <u>all</u> parties.

- In all future projects, logical, realistic and achievable goals, purposes and outputs should be established and directly related to levels and quality of project inputs.

- Adequate financial and human resources should be allocated to AID/T or the contractor for administering projects. Provision of an administrative assistant for COPs of major projects should be seriously considered.

- AID and TanGov planners should look at every project as an opportunity to develop and test appropriate innovative administrative schemes for eventual wider application.

- In similar future projects, AID/T should develop expenditure guidelines--e.g., project expenditures per student as compared to MATI expenditures per student, etc.--to monitor and evaluate initial project budget and subsequent alterations.

- Limits should be placed on use of project funds and other resources for studies, reports, etc., which are not directly germane to the central purpose of the project.

- In future training projects, particular attention should be given to the direct linkages between selection, placement and the training received by participant trainees and the end results sought by the project. Selection of trainees to come back to specified positions should be used to establish this linkage whenever possible.

- In-service training components of future projects should be developed jointly by TanGov, AID/T and any participating contractor, and a detailed plan of action developed, including levels of inputs and planned outputs.

- Clear procedures should be developed for placement of participant trainees that match student needs with the best university situation available.

- AID/T should assure that project budgets are adequate on a line-by-line basis before and during the life of a project; changes in critical line item levels should be insisted upon, and changes in non-critical items should be encouraged.

- In future, similar projects, AID/T should emphasize budget monitoring and control as a means to achieve overall project strategy and goals.

- AID/T should monitor agreed TanGov project funding contributions and urge compliance when shortfalls occur. If agreed funding levels cannot be met, AID/T should provide for local currency funding to overcome the bottleneck created.

- If agreed levels of recurrent fund expenditures are inadequate or cannot be guaranteed, adequate consumables (e.g., petrol, machine shop supplies, office materials) should be supplied with project funds.

- Future projects of this type should include a firm agreement between the MinAg and AID/T regarding the minimum number of students required for project implementation.

- In future projects, the appropriateness of equipment for training should be considered in terms of what new information such equipment can help impart to students and whether knowledge and skills required and supported by the equipment can be used effectively by students in their future posts.

- In similar training projects, a supply of training materials on an annual basis during the life of the project should be provided for, in addition to the major equipment package ordered at the project's start.

- In future projects of this type, U.S. technicians should be assigned primary roles in institutional development with the teaching role kept at the minimum needed to gain local experience.

- Emphasis should be placed on a team member's ability to provide needed training and other contributions in future training projects, rather than academic qualification. The host government should be involved in interviews and selection of team members.

- In projects of this type, the TanGov, AID and any participating contractor should jointly develop a suitable system to evaluate staff performance.

- AID/T should review all present, and design all future project training components to ensure suitable emphasis on curricula quality.

- AID/T, the Office of the Prime Minister and the MinAg should explore the suitability of developing a jointly sponsored pilot project to provide innovative, practical, short but intensive training courses for village extension workers. A short feasibility study is recommended, including visits to various international research institutions to gather ideas and to make recommendations for such a project. See Chapter IX for additional discussion.

- AID/T Project Officers should accept more responsibility for continuous monitoring and review of projects in terms of both design and implementation. Frequent project site visits for substantial reviews of project activities in light of the existing design and implementation plan should be conducted.

- AID/T should reach clear agreement with outside contractors as to what administrative and logistical support it will provide and then provide it, competently and cheerfully.

- Future training projects should be managed and implemented by the TanGov as "projects"; project inputs should not be allowed to meet the broader needs of the agency involved unless all parties to the project agree. TanGov actions necessary to assure project success should be specified in ProAgs, rather than merely implied.

- Projects of this type should actively support the aspirations of women and should, wherever possible, establish annually increasing targets for women students, tutors and administrators.

2. <u>For the Agricultural Manpower Development Project</u>

- AID/T should review the remaining Project budget on the basis of this evaluation and provide WVU-NCATSU with detailed guidelines on how to use available project funds to complete the Project most satisfactorily.

- WVU-NCATSU should be requested by AID/T to provide one MDD staff member with a detailed four-week tour of AID/Washington (AID/W), United States Department of Agriculture (USDA) and World Bank training offices to obtain information about preferred U.S. university programs, short courses and student placement procedures. This working tour should be initiated immediately and supported with current project funds allocated to WVU-NCATSU.

- The MDD and COP should take immediate action to reallocate all excess project equipment at Mpwapwa and Ukiriguru to other MATIs before September 30, 1980. Remaining WVU-NCATSU technicians should immediately turn over all direct commodity maintenance and management responsibilities to Tanzanian personnel.

- The system of equipment control at MATI Ukiriguru should be strengthened immediately, beginning with an audit of all storekeeper operations.

- The MinAg and AID/T should agree on the placement of at least four participants trained under this Project at each of the Project-supported MATIs as soon as possible to relieve U.S. technicians of teaching duties to allow them time to complete preparation of teaching materials before termination of the Project.

- AID/T should request WVU to provide sufficient funds to produce all teaching materials prepared by the U.S. technical staff in sufficient copies to enable their dissemination and use throughout the MATI system.

- AID/T should push for the earliest date possible for publication of the report of the manpower study team. An assessment of the report should be made by a joint TanGov-U.S. group in order to develop specific suggestions for future projects.

II. INTRODUCTION

A. Purpose of Report

The purpose of this report is to provide the terminal evaluation for the Agricultural Manpower Development Project (621-0119) in Tanzania.

B. Evaluation Assignment

Devres' assignment was to conduct a terminal evaluation of the Agricultural Manpower Development Project (AMDP). In particular, Devres was to examine anticipated and actual progress in achieving project goals, purposes and outputs; to note the effectiveness and appropriateness of project inputs; to assess the quality and effectiveness of project implementation and management; and to make suggestions for improvement in future training projects. Devres' detailed scope of work is included as Annex 1.

C. Evaluation Strategy

Devres' evaluation strategy was five-fold, namely to:

- Determine how to measure progress without the benefit of baseline data.
- Analyze and clarify the Project's design/logistical framework (logframe).
- Identify and measure the extent of goal achievement, end-of-project status and magnitude of outputs.
- Analyze and assess project inputs, implementation and management in the light of actual project results.

- Integrate and synthesize the results of the above activities to develop the terminal evaluation report on the Project.

Because this was a final evaluation, most of the evaluation results were used to recommend approaches and actions to improve future agricultural manpower training projects in Tanzania or elsewhere.

D. Project Purpose

The purposes of the Agricultural Manpower Development Project are to (1) strengthen the TanGov's entire professional and sub-professional agricultural training activities, (2) strengthen two MATIs, Ukiriguru and Mpwapwa, and (3) increase the supply of highly trained agricultural manpower in Tanzania. Additional descriptive information about the Project is included in Annexes 8 through 12. The Project was designed to reduce the "critical" bottleneck that lack of trained manpower imposed on agricultural output and productivity in the country as defined by several studies.[1]

E. Brief Project Description

An original non-capital project paper (PROP) was submitted for the Agricultural Manpower Project, Tanzania, in April 1973, and after incorporation of AID/W comments, was approved in December 1973. The

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[1] See USAID Project Paper, Agricultural Manpower Project - Tanzania (USAID: Washington, D.C.), October 1976, p. 8. It appears that one study was especially persuasive, Yeamen, Schwencke and Wamunza, Agricultural Manpower Development in Tanzania, August 1972.

first ProAg was signed by AID/T and the Tanzanian Treasury in February 1974. The original 1973 PROP was restructured into project paper (PP) form and amended in 1976 to include a substantial additional project component for establishment of a new Department of Agricultural Education and Extension (DAEE) and Center for Continuing Adult Education (CCAE) at the University of Dar es Salaam (UDES) at Morogoro. The 1976 PP was never approved, and its DAEE and CCAE components later became a separate PP and project, which is currently being implemented. The description below draws on both the 1973 PROP and the 1976 PP, as does this entire final evaluation paper.

The Project intended to supply $3.388 million for technical assistance, equipment and participant training to achieve the purposes mentioned above. Two Ministry of Agriculture Training Institutes (MATIs), one, Mpwapwa, emphasizing livestock production and animal health, and the other, Ukiriguru, focusing on crop production, were to be upgraded. Eight expatriate technical personnel were to be provided to the two MATIs as Assistants to the Principals (2) and tutors (6) in special fields for a total of 450 person months. The expatriates were to take the place of Tanzanian tutors who would be sent to the U.S. for training and returned to their respective MATIs; the defined role of the expatriate tutors included instruction, improving the quality of training, and providing assistance in the planning and development of the MATIs and their curriculum. Appropriate training equipment and commodities were to be supplied to strengthen the two MATIs as well.

Participant training of 1,080 person months was to be provided. Thirty participants would be returned to the MATIs and 15 would be trained for work elsewhere in the agricultural sector.[1] Two-thirds of the non-degree staff at the two MATIs when the Project began were to be brought up to degree holding status by the end of the Project.

The Manpower Development Division of the Ministry of Agriculture was to be given 66 person months of technical assistance in planning and developing agricultural training as part of the Project. The person posted to the MDD was to serve as Chief of Party for the project implementation team.

A special study of the Faculty of Agriculture (FAF) of the University of Dar es Salaam was provided for the project funding.[2]

The TanGov was to make specific contributions to the Project in the form of recurrent budget allocations, trust fund contributions, etc.

The Project was to be carried out over a six-year period, 1974-1979.

Detailed descriptions of the project outputs, purposes and goals, action agencies, implementation, and funding levels can be found in the 1973 and 1976 logframes (Annexes 4 and 5, respectively), in the

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[1]This total of 45 trained participants was later changed to 60, with 40 being returned to the MATI system and 20 to the overall agricultural sector.

[2]This study generated the DAEE and CCAE project mentioned above.

1973 PRCP and 1976 PP, in the USAID-WVU contract and in the ProAgs between AID/T and the TanGov.

This evaluation report also provides details about most aspects of the Project as described in both the 1973 PROP and 1976 PP.

F. Project History

A detailed history of the Project can be found in the annual reports of the COP of the WVU-NCATSU contract team.[1] Annex 8 provides a summary of project activities to illustrate the nature of the Project and help set the stage for the evaluation materials that comprise the body of this report. Annexes 9, 10, 11 and 12 provide additional information.

G. Preliminary Issues--Baseline Data and Project Design

As noted throughout this report, very little baseline data was developed for this project. The evaluation team's work was complicated by this factor, as indicated in detail in its analysis of the problem in Annex 6.

The evaluation team spend a substantial amount of time considering the design of the Project. The weakness of the design, as analyzed in Annex 7, contributed to the problems experienced in implementing the Project.

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[1] See Annexes 9 and 10.

III. ACHIEVEMENT OF PROJECT GOAL

A. Planned Goal and Degree of Achievement

The broadest goal of the Agricultural Manpower Development Project is stated in the 1976 revised Project Paper as follows:

> ...to assist the Government of Tanzania to achieve its objectives of increased self-sufficiency in the food crops and livestock agricultural subsectors.

The measures of goal achievement are the following:

- Reduced imports of food crops and livestock products.
- Increased production of food crops and livestock products.
- Availability and properly distributed supplies of domestically produced food crops and livestock products to meet national demand.

B. Analysis

The Agricultural Manpower Development Project, by attempting to provide an increased number of better trained agricultural specialists, and the capability to continuously produce such specialists, was designed to help alleviate this major constraint to the achievement of the goal stated above. The Project was built upon a major hypothesis, then, which is stated in the PP as follows:

> ...The critical shortage of properly trained and skilled agricultural manpower at all levels is a major constraint preventing the transformation of the Tanzanian agriculture into a modern, highly productive segment of the national economy.

This hypothesis is probably valid. However, the degree of linkage between the problem (low food production) and the stated major cause of the problem (insufficient trained manpower) is not sufficiently direct to enable a project the size of this one to make any discernable difference in national food self-sufficiency in the short run.

In fact, the non-specific, unquantified goal--to increase food production self-sufficiency--was planned to be achieved by means of a number of indirectly related and weakly linked project outputs and purposes. Thus, even if food production has increased and the importation of food crops and livestock products has been reduced during the life of this project, it cannot be shown that these improvements are a direct result of project activities.

This situation is or is not a project design fault depending on how valid one judges the basic cause and effect assumption to be. AID/T clearly believed that a lack of trained manpower was seriously inhibiting development of the agricultural sector.

From discussions with senior TanGov and AID/T officials and from available reports, the evaluation team agrees that a large number of additional qualified technical and administrative specialists are needed in the Tanzanian agricultural sector. However, because of the

many other factors influencing agricultural development, it is not reasonable to link a limited training program such as the AMDP to the national goal of increased food self-sufficiency.

Even apart from whether the project goal could be substantially achieved by the Project, there are many reasons the Project made only a marginal contribution to the goal:

- The planned life of the Project was too short. A six-year program limited to two MATIs was not sufficient time to create broad enough institutional capability at the MATI level.

- There were long delays in preparing and approving documents, negotiating the contract with the WVU-NCATSU Consortium, completing staff houses and in recruiting and fielding contract personnel, which reduced the effective project life to about five years.

- Completion of the Agricultural Manpower Survey was delayed, thus preventing effective mid- and long-range manpower planning.

- Project staff failed to influence the MinAg in selection and placement of participant trainees, resulting in reduced project effectiveness.

- The Project failed to establish clear lines of responsibility and authority for all the involved parties, i.e., MDD, AID/T, WVU-NCATSU Consortium and the contractor Chief of Party. This resulted in delayed decisions concerning contractor staff removals and renewals and eventually caused a build-up of hostility and distrust among the parties.

- The WVU-NCATSU contractor failed to provide effective support for a project of this size, resulting in delayed commodity shipments, late fielding of staff and poor attention to project financial matters.

- AID/T did not provide effective leadership, management and logistic support for the Project.

- MATI quality and training capacity was diminished by the TanGov's inability to meet planned recurrent costs of the Project.

- Project impact was reduced by the failure of the MDD, AID/T and the contractor to integrate the technical assistance teams and the MATI staff into effective working groups to develop lasting institutional capability.

- Project output levels were reduced by failure of the MDD to provide sufficient staff at the two project-supported MATIs. Good counterpart relationships were never established, and U.S. technicians were unable to devote enough time to develop improved teaching materials, better practicals and in-service training courses.

Many of the above could and should have been identified as potential problems at the project design stage so that the project goal could have been modified at that time.

C. Conclusions and Recommendations

1. Conclusion

It should be concluded from the above that the project goal was too broad and unspecific and not sufficiently linked to the project activities ever really to be achieved. Further, it should have been clear at the start that the Project would basically fail to have sufficient influence on important elements essential to project success and that the Project was incapable from the first day of having any short-term measurable effect on the achievement of food production

self-sufficiency in Tanzania. This is not to say that the Project has not increased the supply of trained manpower. That it has done, and the multiplier effect of these trained people can and should make a substantial contribution toward the nation's efforts to reach food production self-sufficiency in the future. Because the extent of this contribution cannot be determined, and because it would be minimal in any case during the short life of the Project, it is essentially meaningless to list food production self-sufficiency as the project goal.

2. Recommendation

In future projects of this type, a logical, realistic and achievable goal should be established. For example, in keeping with the original concept of this project, a planned goal to provide at MATIs Mpwapwa and Ukiriguru pilot model, the institutional capability to produce annually a specific number of well-trained certificate and diploma students to be placed in specific positions directly related to increased food self-sufficiency could have been established. The improved capabilities of the students could be measured, from some baseline data, by such things as final exam results, ability to perform a number of practical skills and by a system of interviews with employers about on-the-job performance. The project purposes and outputs then would be modified accordingly. This goal might seem modest, but it is realistic and possible of achievement directly from appropriate project inputs and activities.

IV. ACHIEVEMENT OF PROJECT PURPOSE

A. Development of Professional and Sub-Professional Training Activities and Capabilities

1. Ministry of Agriculture Headquarters

a. Establishment of a professional career system

(1) Planned end-of-project status and degree of achievement

The Agricultural Manpower Development Project made little input to the establishment of this planned end-of-project status (EOPS): a professional career system for administrative and technical staff of the MATI system. Such a career service scheme was developed in 1974 by the MinAg and implemented in June 1975 without substantial assistance from the project COP.

(2) Analysis

The need for a professional career system was felt, by AID/T particularly, to be important in providing a sense of job security for personnel at the MATIs. The career system established in 1975 did little, if anything, to improve the situation, since the MATI Curriculum Development Study Team found in 1977 that frequent reassignments, changes in teaching responsibilities and transfers out of the MATI system were creating uncertainty and low morale among MATI

tutors and administrative personnel. The above team recommended that the MDD adopt a policy of establishing permanent staff at particular MATI locations. According to senior MDD officials, staff assignments are now made to the MATIs for a minimum period of five years whenever this is possible. Given the serious manpower shortages, however, it is unlikely that this rule will be strongly adhered to in the near future.

A further problem with the new career scheme is that, like the earlier scheme it replaced, it is a traditional system in which time-in-grade is the primary requirement for promotion and professional advancement. Apparently no recognition is given for outstanding performance or capabilities.

More to the point, however, in terms of the AMDP, is whether the development and establishment of a professional career scheme should have been included as a project purpose indicator at all. Project contractor personnel and the AID/T staff have never been in a position to seriously influence the MinAg, either in the establishment of a suitable scheme, or regarding the particular provisions and administration of such a career scheme. This is a clear example of listing something as a project target, when in reality the project had no effective authority or other means to ensure the achievement of that target.

(3) Conclusions and recommendations

This project purpose indicator should not have been included in the Project. As written, it lacks qualitative and quantitative content; no provision is made here or elsewhere for the necessary authority for its achievement. The importance of a secure and relatively permanent staff at the project-supported MATIs is recognized, however. In view of this, a very specific, perhaps innovative, pilot scheme for improving the staffing system at the two project-supported MATIs might have been developed and agreed upon by AID/T and the TanGov as part of the Project. The evaluation team recommends that:

- AID/T and TanGov should actively and jointly develop and agree on improved, innovative pilot project approaches to administrative problems, such as the need for a professional career scheme, at the design stage in future projects. They should collect appropriate baseline data and include measurable quantitative and qualitative factors as the end-of-project status indicators.

- AID/T and TanGov planners should look at every project as an opportunity to develop and test a number of such innovative administrative schemes as a means to discover suitable, effective systems for eventual wider application.

b. Development and implementation of regular in-service training programs

(1) Planned end-of-project status and degree of achievement

The EOPS as planned is to have regular in-service training programs underway for MinAg Headquarters staff. This has not been achieved. When possible, selected staff members attend short

courses or in-service training programs provided for the MATI staff by MDD. These minimal training activities, however, are not the result of any particular input by the Agricultural Manpower Development Project.

(2) Analysis

The vagueness of this project purpose indicator creates doubt as to what exactly was meant to be achieved. Suffice it to say, however, that at the Ministry of Agriculture, and particularly at the MDD, no regular in-service training program is operating. The reasons given for this are that the MDD is a small group of highly trained specialists who neither need nor have time to attend regular in-service courses. The evaluation team agrees that it is not reasonable to expect the MDD specialists to attend regular in-service training classes. Apparently this was included as an end-of-project indicator because it "read well" as part of a training project. There seems to have been no effort on the part of the project planners to analyze the situation and discover the inappropriateness of this activity.

Still, there is a need in a project designed to assist in manpower development, to provide appropriate opportunities for the headquarters staff to improve their capabilities. In this sense, then, this activity would have been more appropriate if designed to provide study tours, short courses and selected, specialized skill training for the MDD staff.

(3) Conclusions and recommendations

This project purpose indicator is inappropriate (not to mention very vague) and it should not have been included in the Project. Instead, other training opportunities should have been provided for the Ministry's MDD staff over the life of the Project. The team recommends that:

- The appropriateness of every end-of-project status target should be determined by a joint AID/T and TanGov planning team at the time of project design.

- Small, highly trained and under-staffed headquarters groups, such as the MDD, should be offered opportunities for overseas tour studies and specific, appropriate short courses, rather than vague, generalized in-service training.

c. Establishment and use of a system for evaluating manpower effectiveness

(1) Planned end-of-project status and degree of achievement

The Agricultural Manpower Development Project provided no inputs and failed to influence the MinAg in the establishment and use of a system for evaluating manpower effectiveness.

(2) Analysis

The effectiveness of MATI tutors is determined primarily by a formal annual performance evaluation report completed by the respective MATI Principal and forwarded to the MinAg. The evaluation

team judges this minimal staff evaluation system to be unsatisfactory in indicating how well a particular tutor is doing on the job, and generally unworkable as an administrative tool to improve staff performance. Action to remove unsatisfactory tutors is extremely slow or not forthcoming, while there is no apparent reward for outstanding service. Neither the TanGov, AID/T nor WVU-NCATSU technical assistance staff made an effort to develop an improved staff evaluation system during the life of the Project.

(3) Conclusions and recommendations

The Project failed to make a contribution to the establishment of an improved system for evaluating the effectiveness of MATI professional staff. The purpose for which this is the verifiable indicator is to develop professional staff capabilities. Without a systematic means to evaluate staff and to follow up with appropriate actions on the findings of such evaluations, an important means to develop and measure staff capabilities was lost. This project, as a manpower development project, should have been seen as an ideal vehicle for the introduction of an effective, staff performance evaluation system. The evaluation team recommends that:

- In projects of this type, the TanGov, AID/T and any participating contractor should jointly develop a suitable system to evaluate staff performance.

d. Identification of future manpower needs

(1) Planned end-of-project status and degree of achievement

A major study of agricultural manpower needs has been completed under this project by a study team of four Tanzanian and five U.S. experts. The field work was finished by August 1979 and a summary report written and presented at a conference in Dar es Salaam in September 1979. The report is expected to be published by June 1980.

(2) Analysis

Although late in the project life, the future trained agricultural manpower needs have been identified as a result of the Project-supported manpower study. When released, this study should be an important tool in planning training programs to meet Tanzania's future need for trained agricultural personnel. Detailed, analytical comments are impossible in the absence of the final manpower study report.

(3) Conclusions and recommendations

A study of the agricultural manpower needs is completed and should be published by June 1980. This end-of-project status, then, will just be achieved by the project termination date of September 30, 1980. The team's recommendations are that:

- AID/T should push for the earliest date possible for publication of the final report of the manpower study team. The final or draft report should be sent to obtain comments and ideas from these individuals who have been involved directly with the Tanzanian training situation before they depart the country.

- An assessment of the agricultural manpower study report should be made by a joint TanGov/U.S. group in order to develop specific, prioritized and time-phased suggestions for implementation projects.

2. Ukiriguru and Mpwapwa MATIs

a. New and improved curricula in use

(1) Planned end-of-project status and degree of achievement

The planned end-of-project status was to have an unspecified quantity and quality of new and improved curricula in use at the Ukiriguru and Mpwapwa MATIs. However, because the project staff failed to collect necessary baseline data, it is difficult to judge if this end-of-project status has been achieved.

(2) Analysis

Failure to include only quantitative or qualitative indicators, and the absence of baseline information about the curricula at the Project-supported MATIs at the start of the Project, make it difficult to establish just what changes in the curricula would constitute an acceptable level of achievement. Nevertheless, it can be

taken as the intent of this project, which provided a high level of technical assistance and other inputs to the two MATIs, to leave behind at Project termination, substantially and measurably improved curricula. In this, in an institutional context, it is doubtful that the Project achieved the planned or implied end-of-project status.

This is not to say, however, that the project technicians made no attempt to improve the curricula in use throughout the MATI system. For example, newly arrived technicians contributed ideas and suggestions for improvement of the Agro-Vet certificate program being introduced in 1976. Also, a general contribution has been made by various project technicians to improvement of the MATI curricula during the life of the Project. They have served on curricula review committees at their respective MATIs and have presented papers related to curricula improvement at the annual National Training Conferences.

In February and March of 1977 the Project provided a two-man team from the WVU-NCATSU Consortium to study and report on MATI curriculum development. Reference is made to the Report of the MATI Curriculum Development Study Team. Many of the recommendations in the above report have been accepted by the MDD and actions taken to put them into effect. As a result, an institutionalized framework has been created that can, over time, make significant improvements in the MATI curricula.

(3) Conclusions and recommendations

While the Project made some contributions to curricula development at the MATIs, these have not been made within an institutionalized context and have not been of sufficient scope and duration to result in generally improved MATI curricula. The curriculum development study conducted in 1977 resulted in certain important institutional and organizational changes, but it has not, as yet, resulted in the use of measurably new and improved curricula at the MATIs.

Because the quality of the content of training courses is equally as important as the quality of the teaching, it is surprising that this project did not provide for a more direct and active role in curriculum development. It would have been desirable, for example, to have had a full-time U.S. curriculum development specialist at the MDD, in lieu of one of the MATI technicians, if the project plan were to improve significantly the curricula in use at the MATIs.

It should have been recognized at the time of project design that the MDD is the entry point for inputs to improve curricula. Individual MATIs have neither the capability nor the authority to develop new or improved curricula. It is inconceivable that somewhere along the line, in planning, reviewing, evaluating or implementing this project, it was not realized that one of the most important elements of a project to improve training is the quality of the curricula used in that training.

From such a realization, the appropriate project inputs could have

been planned to support and assist development of improved curricula.

This lack of foresight and poor planning in regard to curricula development is judged by the evaluation team to be one of the most serious shortcomings of the Agricultural Manpower Development Project. The evaluation team recommends that:

- o AID/T should review all present, and design all future project training components to ensure a reasonable, balanced emphasis on the improvement of curricula quality.
- o TanGov and AID/T should agree at the time of project design on the specific, quantifiable end-of-project indicators and the level of inputs required to successfully achieve the planned targets.

b. Approximately two-thirds of teaching positions filled with B.S. degree holders

(1) Planned end-of-project status and degree of achievement

This project has failed to influence the TanGov in regard to the placement of degree-holding personnel at the two MATIs. For this reason primarily, then, the end-of-project status to have two-thirds of the teaching positions at MATIs Ukiriguru and Mpwapwa filled with B.S. degree holding (or higher) personnel has not been achieved.

(2) Analysis

The Agricultural Manpower Development Project contains a significant participant training component. Even in the earliest version of the Project Paper, a total of 60 long-term trainees was proposed. Initially, 45 of these were approved by AID/W because it was believed the MinAg would have difficulty in providing 60 qualified

training candidates. It was the intent of the Project that a majority of the planned 30 MATI participant trainees would come from and be returned to the two project-supported MATIs. The 1973 Project Paper is clear on this point:

> ...It is realistic to expect that between one-half and two-thirds of present non-degree holding staff will be upgraded through participant training to B.S. level. Any longer schedule of training would reduce the teaching staff at the two institutes below the levels required to maintain school operations. (Emphasis added.)

A main idea of the participant training component of this project was to provide degree-level training for tutors who would be stationed at MATIs Ukiriguru and Mpwapwa. The two-thirds target for degree-holding teachers at these institutions was, therefore, a reasonable end-of-project status indicator of purpose achievement.

Somewhere, somehow, something went wrong. Trainees, returning from overseas participant training provided by this project were assigned to almost every place but MATIs Ukiriguru and Mpwapwa. Because of later amendments, the Project has provided training in the U.S. for 61 trainees. Of this number 43 have completed their studies and returned to Tanzania. Of the total returned, only two are stationed at Ukiriguru, and two are stationed at Mpwapwa.

There could be many reasons for the failure of the Project to achieve its targest in terms of degree-holding tutors stationed at Ukiriguru and Mpwapwa. First, it is apparent that all parties involved in the

Project had (and still have) only the vaguest notion that this project had as one of its main objectives the establishment of two improved pilot model training institutions. It is clear from the earliest documentation that the majority of project inputs was to be directed toward achievement of this objective.

The training of participants overseas for particular positions at MATIs Ukiriguru and Mpwapwa was essential for creation of the two MATIs as substantially improved training institutions, which would provide superior agricultural training. It is not clear how supportive the MinAg was of this fundamental project objective. It is clear, however, that because of the introduction of the Agro-Vet curriculum in 1976 throughout the MATI system, the MinAg was under pressure to make degree-holder staff assignments elsewhere in the MATI system to meet the greatly increased needs for tutors, curricula development specialists and MATI administrative staff. The result was, and continues to be, a drawing away of trained staff who, perhaps, could have been assigned to the two project MATIs under different circumstances.

The following are some of the results of the failure of the TanGov and AID/T to implement this part of the Project as planned:

- The development of a superior and institutionalized training capability at MATIs Ukiriguru and Mpwapwa has not occurred.

- U.S. technical assistance personnel at the MATIs, because of shortage of trained staff, have been diverted from an institution building role to a temporary role as classroom teachers which ends when they depart. In short, highly qualified expatriate staff have been seriously underutilized.

- Large amounts of supplies and commodities have not been used for the intended project purpose: development of institutionalized training capability.

- The participant training component of the Project, in fact, was turned into a basket training program, with many returned participants being assigned to non-structured, non-institution building situations, where their effectiveness and contribution to national agricultural development goals cannot be determined.

- The opportunity to develop two MATIs as superior institutions where especially effective teaching of the general certificate and the livestock (Mpwapwa) and crops (Ukiriguru) diploma courses occurs has been lost.

(3) Conclusions and recommendations

In spite of the clear intent of the Project, as can be noted in the design documents, the Agricultural Manpower Development Project failed completely to assure assignment of the planned number of returning participant trainees to MATIs Ukiriguru and Mpwapwa. This failure undermined completely a basic project purpose: to develop the institutional capabilities of these two MATIs. The essential result is that the participant training component of the Project has been used as a basket training program, and inputs have been wasted or underutilized. The evaluation team recommends that:

- The MinAg should immediately assign sufficient instructors to the two project-supported MATIs to reduce the teaching load of the assigned U.S. technicians to no more than four hours per day.

- The WVU-NCATSU Consortium Chief of Party should work closely with the U.S. technicians at the MATIs to assure the writing and duplication of all teaching materials,

lecture notes, class handouts and other materials that can be useful throughout the MATI system. Because of the planned early departure of John Mann, he should be relieved of all teaching duties immediately.

- The AID/T should assure that necessary funds are made available by WVU for duplication of the materials developed at the MATIs.

- The MinAg and AID/T should agree on the placement of at least four participants trained under this project at each of the project-supported MATIs, for a minimum period of five years, before September 1, 1980.

- AID/T should ensure in future projects of this type that the Participant Training component is directly linked to and supportive of project objectives to avoid general, basket training programs.

c. Adequate laboratory and field space provided

(1) Planned end-of-project status and degree of achievement

Laboratory and field spaces provided for students at MATIs Mpwapwa and Ukiriguru and judged to be adequate by the evaluation team. The Manpower Development Project made no particular contribution to this achievement except in Ukiriguru where a crops laboratory is being constructed with project trust funds under the supervision of WVU-NCATSU personnel.

(2) Analysis

The two project-supported MATIs are large enough to

provide all necessary field spaces for teaching purposes. Although the supplying of equipment and instruments was a definite part of this project, the actual construction of laboratory facilities was not, so that it is difficult to determine the particular linkage of project inputs to end-of-project status envisioned in this case. Suffice it to say that laboratory space is adequate because of inputs from other projects or normal TanGov Capital Development Budget appropriations. The technical assistance team at MATI Ukiriguru has, however, made a definite contribution in the construction of the crops laboratory that is nearing completion.

(3) Conclusions and recommendations

This particular end-of-project status has been achieved, but by and large, this has resulted without any significant inputs from the Project. No particular recommendations are called for.

d. Proper balance between classroom, laboratory and field instruction

(1) Planned end-of-project status and degree of achievement

Project and MATI staff report general satisfaction with the balance between classroom, laboratory and field instruction. Once again, however, the contribution of the Project to achievement of this end-of-project status has been minimal.

(2) Analysis

The balance referred to here, at least in terms of

quantity--time spent in classroom, laboratory and field teaching activities--is apparently adequate. The time to be spend on the different instruction methods is prescribed in the syllabus for a particular course and, thus, is handed down from the MinAg. The project staff technicians have had minimum input toward affecting the balance; mainly by work on advisory committees and at times by means of papers presented at conferences. On the other hand, the qualitative aspects of the teaching done in classroom, laboratory and the field are greatly improved because of the presence of the U.S. technicians. Because of the direction the Project has taken, the improvements in the field practicals and laboratory teaching methods introduced and used by the technicians have, for the most part, not been institutionalized. These improved methods will cease, for the most part, then, upon the departure of project personnel.

(3) Conclusions and recommendations

Balance between classroom, laboratory and field instruction has been determined by the MinAg staff for each course, with minimum input from project personnel. Where project technicians have been effective is in introducing methods and approaches to greatly improve the quality of instruction. However, since little of this improvement has been built into institutional capability, the effects of it will largely be removed from the MATIs at the termination of the Project. The evaluation team's recommendations are that:

- In so far as possible, the TanGov and AID/T should make a concerted effort to get from U.S. technicians their teaching notes, manuals, class handouts and other materials before Project termination.

- In all future projects of this type, U.S. field technicians should be assigned primary roles in institutional development, with the teaching role kept at the minimum needed to gain local experience.

e. In-service training courses for MinAg staff

(1) Planned end-of-project status and degree of achievement

The Agricultural Manpower Development Project had minimum impact on provision of in-service training courses to up-grade the skills of the MATI staff. The end-of-project status of regular in-service training programs at MATIs Ukiriguru and Mpwapwa has not been achieved.

(2) Analysis

British assistance has been provided since 1977 in the form of teaching methodology in-service training courses for new MATI tutors. Each MATI has been allotted three spaces in these annual, three-week courses. Returned participants have attempted to organize Saturday seminars for other tutors at their respective MATIs. At Mpwapwa and Ukiriguru, these in-service training seminars have been irregular and poorly attended because of lack of interest and because of other, more pressing Saturday morning duties (i.e., administering examinations).

In both project-supported MATIs, U.S. technical assistance personnel have either not been invited, or, at times, have chosen not to participate in the Saturday seminars. Because of their heavy teaching load (and their need to give examinations) this is understandable. One thing is certain, however, because of shortages of tutors, heavy teaching loads and poor guidance and leadership from the MDD, meaningful in-service training to upgrade the teaching skills of the MATI tutors is not taking place.

(3) Conclusions and recommendations

Regular, effective in-service training is not being carried out at MATIs Ukiriguru and Mpwapwa. The Project has failed to achieve this end-of-project status. Apparently, the staff at the MATIs and at the MDD have placed a relatively low priority on in-service training. The evaluation team recommends that:

- In-service training components of future projects should be developed jointly by the TanGov, AID/T and any participating contractor, and a detailed plan of action developed, including what level of inputs will be needed to achieve certain specified outputs.

f. Additional facilities and equipment in use

(1) Planned end-of-project status and degree of achievement

Because there is no specificity about this end-of-project status indicator, it is impossible to say what constitutes an acceptable level of achievement. Suffice it to say that this project has made a

considerable contribution to the provision of additional facilities and equipment.

(2) Analysis

The Agricultural Manpower Development Project has provided substantial help for the development of additional facilities at the two project MATIs. The libraries at Mpwapwa and Ukiriguru have been expanded and improved as a result of project inputs. A much larger number of more recent volumes and textbooks are in use at both libraries. A better appreciation of the library as a resource for tutors and students has developed.

A large amount of office and field equipment, shop tools, teaching aids and laboratory supplies and instruments is in use at the MATIs as a direct result of this project. Additional vehicles have been, or soon will be, turned over to the MATIs. Substantial benefits will be derived in the long term from the three staff houses built by the Project at Mpwapwa and the six houses built at Ukiriguru.

Some examples of improper purchases have been noted. The corn planter at Mpwapwa and excessive amounts of laboratory glassware at Ukiriguru are obvious examples. The farm wagons with non-standard sized tires and the rotary mowers which have failed because of faulty design at Ukiriguru, are further examples of poor use of project funds.

Some types of equipment were triple ordered at both MATIs Ukiriguru and Mpwapwa, once by the International Development Agency and twice

by this project. Much of this equipment (especially laboratory glassware, but other items as well) is not in use and is far in excess of the needs of the two MATIs. MATI Mpwapwa has begun to distribute these items to other MATIs, but MATI Ukiriguru has not.

Storage and accountability for project-supplied commodities at MATI Ukiriguru is judged to be very inadequate and could result in serious losses once the Project is terminated.

Also, because of the failure of the Project to develop the institutional capability at the two MATIs to manage and effectively use many of the commodities supplied, the usefulness of at least some of these items will be limited after Project termination. Sophisticated laboratory equipment, for example, in the hands of inexperienced tutors will soon be disfunctional. Project (and other donor) supplied visual aids such as projectors, without the local capability to do simple repairs, will become inoperable. Vehicles will remain idle because of insufficient recurrent funds for spare parts.

Once again, the major failure of this project--the inability to integrate the entire package of inputs to create strong, growing, self-sustaining institutions--is the basic reason for the situation described here.

(3) Conclusions and recommendations

The Project has made a good (and in some cases lasting; i.e., houses) contribution to MATIs Mpwapwa and Ukiriguru in terms of

additional facilities and equipment. This is offset, however, by the fact that many of the inputs will soon be lost or become inoperable because of the failure of the Project to create an appropriate, institutionalized atmosphere where these commodities will be properly used and cared for in the years ahead. The evaluation team recommends that:

- The TanGov should order an immediate audit of all project-supplied commodities at MATI Ukiriguru. On the basis of this audit, appropriate action should be taken to ensure full, personal accountability and proper storage and use of all commodities.

- The TanGov should remove all commodities surplus to reasonable needs (particularly glassware) from the two project-supported MATIs and redistribute these to other institutions.

- The Project Chief of Party should request the technicians at the MATIs to comment on the suitability of various types of equipment for Tanzanian conditions. This information should be provided to the MDD and filed at AID/T for the use of all future project managers, contractors, etc.

- AID/T should ensure that monies for commodity purchases are available for commodity purchases such as this one so that certain items can still be purchased by late-arriving technicians or after technicians have gained the experience needed to determine what commodities are most suitable.

3. <u>Overall discussion reference development of training activities and capabilities</u>

The preceeding sections review the conditions that indicate the achievement of this project purpose: to assist the TanGov to

develop its professional and sub-professional training activities and capabilities.

Of the ten objectively verifiable indicators in the logframe, it is the opinion of the evaluation team that seven either have not been achieved, or have been partially achieved, but without a significant project input. The other three are considered to have been partially achieved as the result of project inputs. By any standard, this is a less than satisfactory performance.

One underlying factor emerges as the primary reason this project achieved so little of this purpose: sight was lost of the fact that it was meant to establish two functioning, pilot model training institutions. The technical assistance at MinAg headquarters and at the MATIs, the commodities and, particularly, a necessary number of the participant trainees were all intended originally to support an institutional building program at Mpwapwa and Ukiriguru. Without this fundamental purpose, the Project made no sense and had no focus. Highly trained and experienced U.S. university professors, because of lack of counterparts and a general shortage of MATI tutors, found themselves teaching courses at the Vocational-Agriculture level instead of creating institutions that would continue after their departure. Returning participant trainees were posted to all manner of positions, many totally unrelated to the MATI system, instead of returning to one of the project MATIs to help in its development and to ensure the continuation of an institution building process. Such things as the development

of a career service for MATI tutors, regular in-service training programs, evaluation of student performance and development of improved curricula--these things which made sense when related to innovative institutional development--were essentially impossible of achievement outside an institution building context.

There are a number of reasons for this situation. First, although strongly implied, the pilot model institution building concept was not clearly spelled out in the original documentation. With subsequent revisions and amendments and probable failure of institutional memory in Washington and Dar es Salaam, the strong implications about the fundamental nature of the Project became diluted and lost. By the time the MinAg was faced with very serious needs for trained tutors to staff up the Agro-Vet certificate program, it felt completely free to take participants trained by this project for other, unrelated assignments. The AID/T and the contractor failed to get the MinAg to place a sufficient number of returned participants at Mpwapwa and at Ukiriguru for the purposes of this project to be achieved. From this point, the Project became a mixed bag of components with no central focus. No reasonable hope of project success could any longer be expected. Even annual and the mid-term evaluations failed to note that the Project lacked direction, that the participant training component had become almost entirely a basket training program and that high-powered technical assistance had been reduced to almost full-time classroom teaching of subjects and at levels well below their capability. No one, throughout

the life of this project, seems to have noticed that it had no critically focused, commonly agreed end-of-project purpose. In this sense, then, the Manpower Development Project was not managed; it just happened.

B. Expand the Supply of Highly Trained Agricultural Manpower

1. Key MinAg and parastatal staff expanded

a. Planned end-of-project status and degree of achievement

The planned end-of-project status was to have more and better qualified (i.e., U.S.-trained) Tanzanian staff in key MinAg and parastatal agencies in administrative, management and technical positions. By providing 61 participant trainees, 43 of whom have returned and been placed at government and parastatal agencies, this end-of-project status can be said to have been achieved, at least in a limited, quantitative sense.

b. Analysis

This project contained a large participant training component which directly contributed to the expansion of highly trained manpower in the country. Every trainee who returned could be considered an expansion by one of the trained manpower pool.

Some measure of how well these participants were trained for the specific assignments in which they were finally placed, however, is important. This and other more qualitative considerations are decidedly lacking as verifiable indicators of achievement of this project purpose.

There are, for example, instances of where participants trained under this project in highly technical fields have returned to take up strictly administrative posts for which they received no special training. It can be argued that such participants should not be considered "highly" trained for their present post.

Nevertheless, generally speaking, the participant training component of this project did make an important contribution to expansion of trained agricultural manpower. The returned participants are, for the most part, filling key posts, and it can be expected that over time they will provide substantial leadership for national agricultural development efforts. Reference is made to Annex 14 for a detailed description of the names of participants, their overseas study programs and eventual assignment.

If considered a basket training program, the participant training part of this project can be said to have been relatively successful. However, if the intent of the Project is taken as the development at MATIs Mpwapwa and Ukiriguru of strong, expanding institutional capability as training centers which would continue to expand the supply of highly trained manpower, the project failed. No special effort mas made to return to the project-supported MATIs the number of trained tutors needed to support (and continue after Project termination) such an institution building concept.

There are a number of problems, then, in trying to evaluate the Project's contribution to achievement of this end-of-project status.

These can be summarized briefly, as follows:

- Which are the "key" MinAg and parastatal agencies? Is the Sugar Development Corporation (to which one of the project participants was returned) considered such an agency?

- What constitutes "better qualified" as listed in the logframe? Does an advanced degree in Agronomy make one better qualified to be a MATI Principal?

- If most participants are selected for technical training, how can this be expected to provide better management and administrative staff?

- What are the baseline data by which this end-of-project status can be evaluated?

- In what specific, quantifiable way is this end-of-project status linked to the project goal?

- Is annual output of diploma or certificate students from the project-supported MATIs (or the whole MATI system) to be considered in measuring achievement of this end-of-project status?

These and other problems point up the virtually meaningless nature of this type of project status indicator and the difficulty of doing effective evaluation.

c. Conclusions and recommendations

As a basket training program, the Project has had a reasonable measure of success in providing more and better qualified staff to certain MinAg and parastatal agencies. In providing such staff (from returned participants or other sources) to the two project-supported MATIs, the Project has failed. Because of the impreciseness of this end-of-project status indicator and the absence of baseline

data, it is impossible to know exactly what the Project planned to achieve in any case. The team recommends that AID should:

- Design future projects with clear, quantified and qualified end-of-project status indicators and the necessary baseline data to accurately measure achievement. In this case, for example, a specific number of specifically trained participants to fill certain identified positions have been listed.

- Plan participant training to support and directly contribute toward achievement of the underlying project purpose. Here, for example, participants should have been provided to assist in the two project-supported MATIs, rather than be assigned to a large number of agencies indirectly related to the project thrusts.

- Basket training is not necessarily undesirable, but call it by its proper name. Do not try to obtain specific end results from a generalized, unfocused effort. Some hybrids are productive; this hybrid of specific and basket training was not.

2. Planning, management and operation of crop and livestock projects improved

a. Planned end-of-project status and degree of achievement

There is no reasonable way to determine whether the planning, management and operations of crop production and livestock projects are improved as a direct result of the participant training component of this project. It is a matter of degree, but there is no baseline data to measure from and nothing specific to measure.

b. Analysis

For the sizable amount of project inputs (in terms of

technical assistance, commodities, participant training), what level of accomplishment constitutes a successful end-of-project status? How does one measure improvements in planning (from the plan, or the results?), in management (from cost effectiveness of the operation, or popularity of the manager?), in operations (from the quantity, or the distribution of production?)?

Obviously, with no baseline data and no specificity as to what is to be measured, it is impossible to evaluate definitively such a generalized end-of-project status indicator. One could guess that because U.S. training had little to do with project planning and management, the projects that were planned, managed or implemented under the direction of returned participant trainees are little improved.

This part of the Project was intended to be a basket training effort. The link between training and the various suggested improvements was evidently believed to merit the effort even though the hypothesis could not ever by proven definitively in light of the weak project design.

c. Conclusions and recommendations

This end-of-project status indicator, because of lack of specificity, cannot be evaluated. The team recommends that:

- o AID/T should take steps to remove such unmeasurable indicators from all current projects and prevent their inclusion in future projects. Instead, specific indicators should be insisted upon which, together with baseline data, will indicate actual project results. This is not especially easy to do for a basket training component, but it can and should be done.

V. ACHIEVEMENT OF PROJECT OUTPUTS

A. Manpower

1. Trained students (annual output)

a. Planned magnitude of output and degree of achievement

The number of students graduated annually from the two project-supported MATIs at the start of the Project, and the planned and actual numbers graduated at Project termination are shown in Table 1.

b. Analysis

The number of students that can be trained at a MATI is fixed by available classroom, laboratory and dormitory space. Also, during the life of the Project, the entire MATI system was expanded and the number of available students shared out to the various institutions. Form IV students for the certificate program were particularly in short supply and for this, and possibly other reasons, the number of certificate graduates was reduced from about 520 in 1975 to 444 in 1979.

In some critical ways, then, the Project could not influence the total numbers of students available generally. Since the Project provided no inputs for buildings, etc., it could not increase beyond a certain limit the number of students at the project-supported MATIs.

Within these limits, however, it should have been seen as a responsibility of the Project, particularly the MDD, to see that a

Table 1: Annual output of students for MATIs Ukiriguru and Mpwapwa 1975 and 1980[1]

Time Period	MATI and Course			
	Ukiriguru		Mpwapwa	
	Certificate	Diploma	Certificate	Diploma
Start of Project (1975)	102	0	67	36
End of Project (planned)	125	40	110	36
End of Project (actual)	55	44	56	33

[1]Figures above show corrected start-of-project data (1975) and, thus, differ from logframe. Also, the Mpwapwa 1975 certificate students were doing their second year at Morogoro, and the figure shown is the number graduated from Morogoro. Shortly after the Project started, the second year certificate program was shifted to Mpwapwa. Figures in Mpwapwa diploma column are not annual, but biennial data.

sufficient number of students were assigned to MATIs Ukiriguru and Mpwapwa to fully justify the infusion of substantial project inputs at these two institutions. While diploma student numbers at the project-sponsored MATIs more or less reached the targeted output levels, certificate student numbers were not maintained at a sufficiently high level.

It should be noted, in any case, that project staff performed outstanding service in coping with the numbers of students; particularly at Mpwapwa where serious problems had to be faced at the time of the arrival of U.S. technicians, when a major shift was made in transferring the second year certificate program from Morogoro.

c. Conclusions and recommendations

MDD failed to provide the number of students needed at MATIs Ukiriguru and Mpwapwa so that planned annual certificate student output was not achieved. The team recommended that:

- Future projects of this type should include a firm agreement between the MinAg and AID/T regarding the minimum number of students required for project implementation.

2. Trained teaching staff

a. Planned magnitude of output and degree of achievement

The number of degree holding staff at the two project-supported MATIs and in the entire MATI system at the start of the Project, the planned output and the number at Project termination are shown in Table 2.

b. Analysis

A main objective of the Project was to select participant training candidates from MATIs Ukiriguru and Mpwapwa and station them back at these MATIs upon completion of their studies. As planned, the Project was a "package deal" whereby U.S. technicians were to fill in as tutors during the absence of the participants, who upon return would become the nucleus for the continuation of the institution building activities started by the project technicians. Of the fourteen participants selected from the two MATIs, only four have returned to and remained at these institutions (see Annex 14).

The MinAg's Manpower Development Division clearly contradicted the intent of the Project in the placement of participants trained by the Project. AID/T project managers, AID/T, and outside evaluators, and the WVU-NCATSU project staff failed to recognize the problem and to take necessary corrective action.

The evaluation of project purposes, Chapter IV, provides further discussion and recommendations regarding this point.

3. Trained TanGov and parastatal staff

a. Planned magnitude of output and degree of achievement

As one result of the participant training component of this project, it was planned to place 20 individuals with U.S. training in key food crops and livestock positions with the TanGov or parastatal agencies. By the time all participant trainees have returned

Table 2: Number of degree-holding staff, MATIs Ukiriguru, Mpwapwa and the MATI system, 1972 and 1980

Time Period	Location		
	Ukiriguru	Mpwapwa	MATI System
1972	5	6	30
End of Project (planned)	13	14	100+
End of Project (actual)	7[1]	9[1]	112[2]

[1]Two of these are returned participants of this project. The figures do not include U.S. technicians or their replacements who will be assigned to the two MATIs before departure of project technicians.

[2]Includes 10 degree holders at MDD.

to Tanzania, an estimate is that about 32 of the total number of 61 trained by this project will be assigned to positions outside the MATI system.

b. Analysis

Although this project was designed to provide support for two MATIs primarily, and then secondarily for the MATI system generally, a large proportion of the participant trainees is being placed completely outside the MATI system. As pointed out in other parts of this report, the Agricultural Manpower Development Project apparently lost its primary focus and became a basket training program. See the evaluation of project purposes, Chapter IV, for further discussion.

4. Overall discussion reference manpower output

In the provision of a large number of U.S. trained agricultural technicians, the AMDP made a substantial and lasting contribution to the increase of trained personnel in the MinAg and certain parastatal agencies. By the time all participant trainees return to their posts in Tanzania, the Project can be credited with having provided 37 B.Sc. degree holders, 19 M.Sc. degree holders, and 5 Ph.D. degree holders. These invididuals can be expected to make major long-term contributions to the nation's agricultural development programs.

Very little can be said to fault the Project in regard to the numbers of participants trained. The fact that most of the participants

were sent to the contract consortium universities (West Virginia University and North Carolina Agricultural and Technical State University) instead of to a broader selection of schools where, in some cases, more appropriate training could have been received, is dealt with in Chapters VI and VII of this report. That weakness of the participant training program not withstanding, however, the Project (and particularly the project COP), did an outstanding job of clearing and placing in U.S. universities in a relatively short time, the 61 project participant trainees.

If this project was meant to be nothing more than a general agricultural personnel participant training program, it could be judged a success, at least in the quantitative sense. In terms of the quality of the instruction received in the U.S., there are some examples of where participants received schooling that either lacked quality or of where there are doubts that the training received prepared the participant for his eventual assignment. See Chapter IV for a further discussion of this point.

This project, however, was not meant to be a basket training program. It did, in fact, provide substantial additional inputs, most of which were to be focused on the development of MATIs Ukiriguru and Mpwapwa as centers of excellence for training certificate and diploma-level agricultural students. As designed, then, 27 of the participant trainees (or other equivalent degree holders from non-project sources) were to be selected from and returned to these two project MATIs. Their

presence at Mpwapwa and Ukiriguru after U.S. training was an essential element in project strategy. As explained above, and in other parts of this report, the MinAg's MDD, AID/T and the contractor COP failed to keep to the intent of the Project in this regard. The number of returned participants (four, at present) assigned to the two MATIs has been totally inadequate for the institution building job envisioned and needed at Ukiriguru and Mpwapwa.

It can be concluded, then, that in provided U.S. training for 61 Tanzanian agriculturalists, the Project was a success. It must be considered less than successful, however, in view of the questions regarding the suitability of the U.S. training received by some participants, and because the MDD failed to provide a sufficient number of the returned participants (or other non-project degree holders) at the two MATIs the Project basically was designed to assist.

B. Quality of Training at Two MATIs

1. Revised curricula, teaching materials, in-service training

a. Planned magnitude of output and degree of achievement

The planned outputs were increased hours of instruction. more and improved teaching materials and regular in-service training programs in use at the two project MATIs. The magnitude of these outputs was never established. Instead, baseline data were to be collected by the contractor and used to establish targets,

b. Analysis

Baseline data were never collected, nor verifiable indicators of project achievement established for this project output, even after recommendations were made to do so by annual and mid-term (external) evaluations of the Project.

So, what have we got? A mixed bag of activities the Project was to carry out to improve the quality of instruction at the two MATIs and no yardstick by which to measure their effectiveness in doing so.

Apparently, somewhere along the line, the MDD, the contractor and the AID/T downgraded the importance of having revised curricula, improved lesson plans and more and better quality training materials in use at the MATIs.

The following point-by-point discussion is an attempt to 'get a handle on' the various output activities for improving instruction quality and to determine, without the benefit of baseline data, the magnitude of output achieved by the Project.

(1) Revised curricula; increased hours of instruction

Project technicians have contributed to improvement of the curricula as Coordinators of Studies. These positions were not filled at the time of departure of the first technicians who filled them, however, and the Project lost a great deal of its ability to influence curricula development, in-service training, etc., at that time.

Some examples of the types of improvement the U.S. technical team (particularly the Coordinators of Studies at the two MATIs) introduced are as follows:

- Complete plans for practicals were developed and handed in as opposed to the assessment schemes only required by the MDD. The MATI staff was oriented in and assisted through written guidelines, individual conferences, meetings and editing.

- Topic flow charts were introduced to the MATI system at Mpwapwa.

- In 1968, the Common Exam questions and model answers developed at MATI Mpwapwa , with a U.S. technician serving as Coordinator of Studies, served as a model of excellence for other MATIs, as an example of how the Coordinator of Studies should function.

- The tutor training schedule developed in 1976 at Mpwapwa suggested appropriate ideas and topics for all the MATIs.

Also, many project technicians contributed to development of improved curricula by their work on various curricula development committees and in some instances by presenting papers at the Annual Training Conferences. The project COP, working at the MDD level, also provided valuable ideas and in other ways assisted in developing improved curricula. The provision by the Project of a WVU-NCATSU team to study and to make recommendations for improved curricula probably helped, in a general sense, to improve curricula in use.

In spite of the above, however, the contractor staff and AID/T lacked the authority or other means to change or improve substantially the curricula in use at the MATIs. The length of courses and their

particular makeup in terms of hours of theory and practice were decided at the MDD. For the Agro-Vet certificate course, all MATIs follow a common syllabus which offers little opportunity for modification.

For further discussion and analysis of the curricula development activities of the Project, see Chapter IV concerning project purposes.

(2) Additional teaching and training materials

In this area, the project technicians could (and often did) make a very important contribution to the quality of instruction offered at the MATIs. The Project did provide planned inputs for this activity: the U.S. technicians themselves, a planned number of returned participant trainees, commodities, funds for supplies, etc. In many cases, the project technicians developed and used additional and improved lesson plans, classroom handouts, slide collections, plans for practicals and various manuals.

Unfortunately, this important project activity was done largely in an informal, unstructured way. No effective mechanism was established by the MDD or the contractor COP to organize the production, use or dissemination to other MATIs (or to other tutors at the project MATIs, for that matter) of improved teaching materials. A total of nine U.S. technicians have served at MATIs Mpwapwa and Ukiriguru, yet only now at this late date is an effort being made to gather and publish teaching materials being used. Several project U.S. technicians left Tanzania without leaving behind anything in the way of teaching notes, manuals

or other teaching materials and aids they might have developed. The evaluation team judges this lack of foresight on the part of the MDD and the contractor COP to be a serious failure of the Project.

(3) In-service training

The Project failed to establish regular, effective in-service training courses to improve teaching capabilities of tutors at MATIs Mpwapwa and Ukiriguru. See Chapter IV for further discussion and analysis.

c. Conclusions and recommendations

First off, improved curricula and establishment of in-service training programs, planned here as project outputs, also are included in the logframe as purpose end-of-project statuses. Further, this whole series of outputs, including development of better training materials, is completely devoid of qualitative or quantitative content. The baseline data called for in the project logframe as a first step in establishing targets was never collected.

Without doubt, the presence of experienced, dedicated U.S. technicians at the project MATIs contributed greatly to an improvement in quality of instruction provided. These key individuals, plus a large number of commodities provided by the Project (and other donors), as well as new buildings and facilities (particularly those provided by the International Development Agency, IDA) have resulted in substantial internal improvements and better quality teaching.

The main question, however, is whether such improvements have been made in an institutional sense and if, after Project termination, a truly improved level of instruction can be maintained.

The evaluation team, while recognizing the outstanding service of most project technicians, concludes that the project failed to truly institutionalize the capability of the MATIs to provide improved training in the years ahead. Because of extremely busy schedules, most of the project-supplied personnel failed to get at the core of the challenge: to organize and use the substantial resources of the Project to create at the two MATIs real institutional capability to provide high quality instruction. Project technicians concentrated energies on routine (or in many cases, even emergency) administrative tasks to the virtual exclusion of the overall project concept. The Project lacked an idea--it had no clear vision of what was possible, and so it had no larger purpose to champion. The team recommended that:

- In projects of this type, a careful monitoring and evaluation system should be established to ensure that the larger project purpose is not lost in the day-to-day administrative business of running the project.

- Purposes and outputs should be revised as necessary to reflect the true expectations of a project at various stages during implementation, rather than have project technicians go through the empty exercise of relating project inputs to clearly unreachable targets.

- Management should be provided the time and resources to contribute creative, innovative concepts to project implementation, instead of being completely overburdened with administrative details.

- Every project chief of party should have adequate and capable administrative assistance.

C. Other Planned Outputs

1. Permanent Career Service

2. Manpower development and in-service training for MinAg staff

The above outputs have been discussed fully in Chapter IV, Project Purposes, and no further comment is needed here. It should be noted, however, than an activity or action should not be listed both as a planned end-of-project status and an output.

3. Classroom instruction (MATIs)

a. Planned magnitude of output and degree of achievement

The Project had as a rough plan that six contract technicians would carry full teaching loads for a period of four years, and two others would carry at least half-time teaching loads for four years. Thus, out of a project planned total of 336 person months of teaching time, it is possible to calculate from project staffing patterns that the Project actually provided a total of approximately 284 person months (or approximately 84% of the Project target).[1]

b. Analysis

The shortfall in the achievement of this project output was caused by the inability of the WVU-NCATSU contractor to recruit

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[1] A similar analysis for planned person months of effort for the entire project is included at page 126 of this report.

in a timely fashion to fill vacancies as they occurred, and also by the failure of the Project to complete staff housing at the start of the Project, which delayed the arrival of the initial group of technicians.

All MATI project staff members shouldered a heavy teaching load during their assignments. As might be expected, the performance of the project-supplied U.S. instructors ranged from only fair (or perhaps even poor) to excellent. On the positive side, this project has provided exposure to first-rate teaching for a large number of students at the two project MATIs. Without doubt, long-lasting, positive impressions have been made by this exposure.

Further on, the qualitative aspects of the project-supplied teaching (which, by the way, was not considered important enough to include as part of the project output) is the question of the appropriateness of the teaching to the work situation faced by the MATI graduates.

The proper objective of the Project should not be to merely provide classroom instruction, but to provide the particular quality of instruction that best meets the needs of the students in terms of their future job assignments.

On this score, it is difficult to state unequivocally that the AMDP was successful. Obviously, good instruction was provided by at least some (probably a majority) of the U.S.-supplied technicians. But just how "good" was such instruction? In the academic sense, a teacher might do a really outstanding job of imparting the salient

facts of a particular subject; insist on drill and repetition; and even practical exercises until the students understand the essence and linkages of the material taught. Yet, even after such instruction during an entire two-year program, a student could quite easily still not be competent to deal with the realities of the "real world." It becomes a matter of directly relating what is taught to what a student will be called upon to do, plus the all important consideration of what assistance, guidance, support and backstopping a student will have when he is faced with the need to deal with real life situations.

The evaluation team has some reasons to believe that this project fell considerably short of the mark in preparing students for their future work assignments. Without going into a discussion of the basic philosophy of education, and whether or not formal, in-school training is , indeed, the most effective method for training people to deal with rather basic, rural development situations, the following points, at least, can be made about the quality of instruction provided by this project:

- Given the rather basic problems that need to be dealt with in the initial phases of getting agriculture moving in Tanzania (for example, land preparation, weed control, plant populations, use of improved seed, use of crop residues, rotations, crop or variety adaptability to different rainfall patterns, and the like) is it necessary, desirable or cost effective to teach students over a two-year period such things as basic soil science, agronomy, plant pathology, entomology, farm mechanics and all the rest of a full academic curriculum?

- Does this sort of training, in fact, educate a young person away from a desire to return to his village as a general extension worker and toward a career in an office or laboratory, with the concomitant desire to complete more advanced training?

- Is a student who is exposed to superior teachers, sophisticated laboratory and field equipment and the general academic atmosphere of the MATI truly being prepared to work on basic problems in a simple rural setting? Is it necessary, for example, to expect a student destined to work in a village to be capable in the use of a microscope? Is this germane to his or her job assignment which is to teach basic techniques of crop and livestock production? The need, surely, is for motivated, supported and practical extension workers. Even in the sophisticated agricultural regions of the U.S., how many county extension agents use a microscope? How many need to?

- At least in terms of the certificate program, the question comes down to this: how much has this project, by accepting and supporting the MATI approach to training, truly contributed to creation of a group of young agricultural professionals who either will or can work effectively at the village level to identify the needs of the people and spark action to meet these needs? Has the Project instead created a group of young professionals, who look forward to nothing more than the day they can leave the village?

- With more imagination and creativity, with a better sense of the level of the needs to be met, was it not possible to use the substantial resources of the Project to help the MDD design and implement a sharply focused, innovative, short, practical and village problem-solving oriented training project?

- If the project goal was, indeed, to help in the nation's drive toward food production self-sufficiency, why design a project that commits itself to support the ponderous, inefficient

MATI system by means of an equally heavy and ineffective WVU-NCATSU consortium managed system?

- A one or two-year project to develop pilot programs; creative, adaptable short courses where a specific group of key agricultural or animal husbandry practices are taught (and the minimum of theory to understand the need for these practices) to village extension workers would have been much more appropriate and directly linked to the nation's agricultural development needs. Such training is provided at some of the international research institutions. At the International Rice Research Institute in the Philippines, for example, a course has been worked out to convert a complete novice into a rice production "expert" in as short as two weeks.

c. Conclusions and recommendations

While the Project did, indeed, provide classroom instruction, a serious doubt remains whether what was taught (and the atmosphere in which it was taught) is in fact the best use of scarce development funds in the context of Tanzanian agriculture.

It is possible to conceive of other, more effective training program approaches, to provide a more practical and village situation-linked system for providing the village extension workers needed. See Chapter X, "Recommendations for Future AID-Financed, In-Country Training Projects," for further details. The team recommends that:

- AID/T and the Office of the Prime Minister and the MinAg's Manpower Development Division should explore the suitability and desirability of developing and implementing a jointly sponsored pilot project to provide innovative, practical,

short but intensive training courses for village extension workers. A short feasibility study should be conducted, including visits to various international research centers, to gather ideas and to make recommendations for such a project.

- AID/T should conduct an in-depth analysis of project proposals to accurately measure the cost and social effectiveness of the planned outputs at the proposed level of inputs.

4. Study for establishment of agricultural education program, Faculty of Agriculture and Forestry

a. Planned magnitude of output and degree of achievement

The above study was completed by a four-man consulting team from the WVU-NCATSU consortium in July 1975. The study resulted in the development of a new project which was approved in July 1978. Utah State University was selected as the contractor for the new project, and implementation is now underway.

b. Analysis

The study to determine the requirements for establishing an agricultural education program at the Faculty of Agriculture and Foresty (FAF) shows up in the 1976 Revised Project Paper as a purpose and an output of the Agricultural Manpower Development Project. This is obviously an oversight, since the study already was completed in July 1975. The 1976 logframe, in fact, contains a good deal of purpose and output descriptive material which would indicate not only that the study was completed, but that the recommendations that it

made had been incorporated into the revised 1976 Project Paper.

As it turned out, AID/W rejected the idea of making the assistance to the FAF part of the Agricultural Manpower Development Project. The whole concept of assistance to the University for agricultural education was separated from the AMDP, and a new project was developed and finally approved in July 1978.

Arguments can be made on either side about the advisability of incorporating this large add-on assistance package to the Project. The WVU-NCATSU contractor obviously felt it to be desirable and was able to convince AID/T of the rightness of the decision. As reported to the evaluation team, the contractor prepared the revised Project Paper of 1976 that brought the idea of assistance to the FAF into the AMDP. AID/W decided otherwise and insisted on the assistance to the FAF being a separate project.

The discussion above is included in this report to explain why certain activities in the logframe of this project were never implemented by the project staff. One thought comes out of this, however: Did use of project resources, such as funds for the study, and staff time (particularly of the COP) to develop proposals for such add-on activities detract from implementation of this project? These activities can be seen as attempts by the contractor to generate business in the sense of using resources of one project to make studies and develop proposals which (the contractor hopes) can be added to the existing project or result in a new project where the contractor has a considerable

competitive edge. Some of this is to be expected, perhaps, but if such activities get out of hand and substantial amounts of a project's resources are used to develop add-on or new projects, it should be stopped. The use of limited project funds for indirectly related studies, while monies for spare parts or other direct project requirements are closely husbanded, should not be permitted.

c. Conclusions and recommendations

The study for establishment of an agricultural education program at the FAF was completed in July 1975 by the WVU-NCATSU contractor consortium. The evaluation team raises the question of whether such studies, and other uses of one project's resources, to develop add-on or new projects, should be allowed, unless there is a direct, obvious relationship between the two project ideas and that they do, in fact, aim at a common objective. They recommended that:

- o AID/W and AID/T should carefully control the drawing away of resources from one project to develop add-on or new projects by contractors.

5. Agricultural manpower survey for use in planning training programs

a. Planned magnitude of output and degree of achievement

The survey is completed, but the report is not yet published.

b. Analysis

This is not an analysis of the agricultural manpower

survey, but rather some thoughts about the need for such a survey in the first place. The evaluation team feels that the best way to express these thoughts is in the form of the following questions:

- Was the need for a manpower survey clearly demonstrated? In other words, was the justification for the survey more than just the fact that the previous agricultural manpower survey was seven years old?

- Did the previous agricultural manpower survey conclusively contribute to improvement in the agricultural sector, and what are the chances the new survey will?

- Is this country's agricultural sector in such critical condition because of the lack of knowledge about agricultural manpower needs and supplies? Is the shortage of such knowledge of significant priority in the context of agricultural needs?

- Can this survey basically indicate anything more than what everyone already knows: the country is terribly short of trained agriculturalists? If you are filling a deep hole with a limited amount of stone, do you need to know precisely how deep is the hole?

- Should funds ($140,000) from the AMDP have been used for the survey? Did this represent a net loss from project funds? How specifically can an agricultural manpower survey conducted in 1979, the report of which will not be released until June 1980, contribute directly to the goals and purposes of this project that terminates in September 1980?

6. <u>Other studies and activities</u>

In addition to the agricultural manpower survey, the study for establishment of an agricultural education program at the Faculty of Agriculture and Forestry, and the curriculum development study (all

of which have been discussed in this chapter as in Chapter IV, "Project Purposes"), two additional studies/surveys were made by the Project. These are discussed below:

a. Farmer training study and project

In 1975 a four-man team conducted a survey and held discussions in Dar es Salaam to develop information for a proposal to establish a "farmer training wing" at each of the four MATIs (not including MATIs Mpwapwa and Ukiriguru of this project). The concept here is to station a U.S. technician at each of the MATIs to help formulate and supervise a "grass roots" approach to farmer training. The merits of this concept (which eventually became a separate project with WVU-NCATSU as the contractor) are not under discussion here. It is useful to explore, however, to what extent resources of this project were used to develop the new Farmers Training Project.

Funds for the initial survey consultant team came from the Agricultural Manpower Development Project. A certain amount of the COP's time was used in working with the consultants and in following up on the proposal that was developed. Also, after the project became a reality and a contract was signed with WVU-NCATSU for implementation services, the COP of the AMDP became, at the same time, the senior contractor official of the new project.

b. Library study

In 1976 a study of the Tanzanian agricultural library

services was conducted by the Director of Library Services of WVU. Funding for this study came from the Agricultural Manpower Development Project. As a result of the above study, a report suggesting ways to improve the library services was prepared.

Here, again, is another example of the use of project funds to conduct surveys and do studies leading to proposals for add-on or new projects. There is no serious doubt that a study and report on the agricultural library system is valuable. The question is whether such a study should be funded from this project. Are the hoped for results of the study truly and directly related to the goals and purposes of the AMDP?

(1) Conclusions and recommendations

- Limits should be placed on use of project funds for studies, reports, etc., which are not directly germane to the central purpose of the project. Contractors should not be permitted to use a project as a basket consulting program.

- Limits should be placed on the use of staff of one project in developing add-on or new project proposals so that the project being implemented does not suffer for the sake of some future project.

VI. EFFECTIVENESS AND APPROPRIATENESS OF PROJECT INPUTS

A. WVU-NCATSU Technical Personnel

1. Qualifications

In general, the qualifications of WVU-NCATSU personnel was commensurate with the requirements of the Project. Most, but not all, had developing country experience, mostly in African countries. All were academically qualified for their positions. Several of the personnel had extensive U.S. farming experience which was invaluable for many of the practical aspects of their work, including their own personal logistics requirements at the various project sites. At least one member of the technical team had a fair proficiency in Ki-Swahili before beginning work on the Project. Some other members of the team had learned a great deal of Ki-Swahili while working as part of the Project, but the others did not gain much additional language proficiency during their tours.

Several members of the team had extensive experience in teaching agricultural subjects in developing countries and/or the U.S. Others, however, had no previous teaching experience and no training in teaching methods or in developing teaching materials.

2. Performance

a. Chiefs of Party

There were two COPs during the life of the Project. The first served from 17 February 1975 until 1 August 1979. The second has served as COP since 1 August 1979 concurrently with serving as COP of another major implementation project as well.

Both COPs have had heavy administrative burdens well beyond that envisioned in the project design. As a result, much of their time has been spent carrying out time consuming administrative details rather than dealing with larger and more important substantive and managerial issues. This reduced their ability to think about and provide the larger project focus as advisors to the MDD, to their own team members, to the two MATIs and to AID/T. Their overall project leadership, guidance and management was less proficient as a result and project progress and direction suffered accordingly.

The COPs have done an excellent job of providing logistical and moral support for other members of the project team, including arranging for their housing. They have, within the limits imposed by the contract and associated AID/T and WVU procedures, provided equipment to the MATIs and other team members as required.

The COPs have been exclusively responsible for placing students in U.S. universities, and substantial amounts of effort were given

to this task by them. However, the results of this effort highlight one of the weaknesses in the performance of the COP. For example, all of the first 16 students placed in U.S. universities went to WVU and NCATSU, and this clustering of students at WVU and NCATSU continued during the life of the Project. This was not an intended result of the Project. It was brought about by the direct actions of the COP. The end result was that 48 (79%) of the 161 students funded by the Project were trained at WVU or NCATSU. Of the 55 students placed by the COPs, 48 (87%) were so trained.

The objective of the U.S. participant training component of the Project implicitly was to benefit Tanzania to the maximum possible extent. This wholesale direction of participant trainees to WVU and NCATSU surely did not achieve this result, and thus it was potently detrimental to both Tanzanian and AID/T objectives. It was also unprofessional on the part of the COP and, at least on the surface, a violation of the trust placed in him by the MinAg and AID.

This U.S. participant training component was the first for MDD and, while MDD officials were "very excited" about the chance to send students to the U.S. for training, they had virtually no idea of which U.S. universities could best meet each student's needs. As it turned out, there were problems with the adequacy of training at both WVU and NCATSU for certain students, a difficulty which could

undoubtedly be laid at the feet of the COP because of his control of the placement process.

Other areas where performance by the COPs faltered was in assisting in the development of curricula, providing help with MinAg in-service training, and generally upgrading the capability of the MDD to perform its training, managerial and administrative functions more proficiently. This is not a result of inadequacy or lack of desire on the part of the COPs. In fact, they made many appreciated contributions at the MDD level in these and many other areas. Rather, their performance seems to have suffered a short-fall for three reasons: First, their job descriptions as related in Project PIO/Ts and ProAgs were somewhat grandiose and therefore virtually impossible of achievement within the milieu and from the position in which they worked. They have been advisors, not decisionmakers. Their accomplishments have depended upon many MDD inputs and priorities, not merely their own. Second, they were often so busy with project administrative details that they could not bring concentrated effort to bear on the policy or advisory aspects of their work. Third, they sometimes achieved results in certain areas--e.g., in-service training--that lasted only a while, then slid back to the baseline condition again. Also, much of their success is not measurable by evaluators or even precisely known by the COPs.

Another area where COP performance has been checkered is that of relationships with AID/T. Various kinds of logistic, personnel and substantive problems arose during the Project that required difficult and unsatisfying decisions from the COP and AID/T. (The lack of clearly defined responsibilities and authority on the part of all project activity centers and the consequent inability and unwillingness of all action agencies to take responsibility for and move early to resolve certain issues contributed to the development of such problems.) As more such difficulties arose, which is inevitable in most projects, respect for each other appeared to whither, and working together became more difficult. Eventually, the relationship became cloudy enough that the end of normal tours of duty, which might not otherwise have resulted in personnel turnover, became valuable to both sides and were claimed as a natural conclusion for the relationship.

COP relationships with the MDD, Director of Manpower Development, MinAg (DMD) and Ukiriguru and Mpwapwa administrative and teaching staff and students were good throughout the Project.

b. Other technical staff

While no formal evaluation of the contractor's teaching staff was ever carried out, the performance of most, but not all,

of WVU-NCATSU's staff appears to have been very satisfactory. Within the parameters of their jobs as they understood them, the majority of the WVU-NCATSU staff carried out their responsibilities successfully and aggressively, often going well above and beyond their required scope of work in service to MATI staff and students. The recent activities of staff members working the Project at the time of the evaluation are shown in Annexes 9 through 12.

There were problems with the overall performance of a couple of technical expatriate staff. These difficulties became evident early in their tours of duty, but were never dealt with definitively. The resolution of this performance problem was not to hire the staff members for a second tour, and even this solution was not reached easily by WVU, MDD, or AID/T. The lack of clear lines of responsibility and authority among the action agencies contributed to this long term paralysis of project decision making and to the rather muddy ending that was eventually achieved.

Teaching was the primary role of expatriate staff members as understood by nearly everyone involved with the Project. They carried very heavy teaching loads most of the time and several also carried administrative responsibilities as deputy principals or heads of departments. MATI administrative and teaching staff, as well as students, thought nearly all of the expatriate technical project staff did exceptionally well in this area.

Although clearly intended as a project output, the development of new and improved curricula, classroom teaching materials, tutor course notes and similar outputs by the WVU-NCATSU technical staff was not strongly followed up on during the life of the Project. As the end of the Project has neared, however, much more attention has been focussed on this area. It is likely that the staff still working at the MATIs will develop some teaching materials for their respective courses before the Project ends on September 30, 1980. Most staff members who have already left the Project did not leave teaching materi 's behind.

There are several reasons why the above outputs have not been achieved by WVU-NCATSU staff. First, their assigned teaching and administrative loads have been heavy and have received their priority attention. Second, most did not understand from the beginning of their assignment that they were expected to produce such materials for use outside their own classroom. Third, the COP, MDD, AID/T and MATI administrations did not raise the development of such materials as a priority activity during the bulk of the Project. Fourth, earlier WVU-NCATSU staff did not produce such materials prior to their departure.

Many of the staff carried out or assisted with special projects during their tours of duty -- e.g., formation and advising of an agro-mech club, development of a dairy herd, upgrading of a library,

construction of a laboratory building. These were very much appreciated by the respective MATIs that benefitted from them.

The working relationships of the staff with their COP and with MDD, AID, and other team members were generally good. Problems did arise between certain contract team members at one MATI, however, which strained working relationships between many of the activity centers involved in the Project for a time. While the immediate problem was eventually solved, most persons involved with the Project feel working relationships are still influenced by the incident to the detriment of the overall Project.

The performance of the technical staff was weak in that they did not view their individual professional contributions in the context of the overall Project. The majority of the technical staff had only a sketchy idea about the focus of the Project and how they were contributing to it. As a result, they did not understand how their activities and performance affected total project success or how they might reshape their priorities to contribute more to overall project progress.

Some staff members had to devote a substantial amount of energy to sustaining themselves and, in many cases a family, some with young children. They sometimes lacked water for several days at a time; found common foods difficult, time consuming or impossible to obtain; and lived without many of the necessities and amenities

available in the U.S. or even in Dar es Salaam. They and their wives and children had become good at coping by the time of this evaluation, and it is to their credit that they grew to be jacks-of-all-trades, good planners and organizers, and willing to put up with unpleasant personal circumstances whenever they could not alter or control them. The Project benefitted greatly from this accomplishment.

3. Analysis

a. Administrative support

As envisioned in the 1973 PROP and the 1976 PP, the COP would not have extensive administrative duties. This did not turn out to be the case, however, and a great deal of the COP's time was diverted to administrative chores. Even MDD staff see the COP as saddled with the role of "glorified administrative assistant." In part this administrative burden resulted from the lack of administrative support personnel--either local or U.S.--for the COP. It was also required by the COPs being located in Dar es Salaam, the center of logistical support and communication for the rest of the project team, and by the absolute requirement of the COP to support his technical assistance team. Also, the nature of the Project was one of details: equipment ordering; paperwork for participant trainees; local currency expenditures and accounting; both WVU and AID forms and procedures; difficult personal logistics for project

team personnel (requiring trips to get flour, etc.), and so on. There was no way the COP could avoid these details and at times they became overwhelming.

The idea of a U.S. administrative assistant was floated in the 1976 Project Paper, but never approved, apparently because AID/T was in the process of adding a second General Services Officer (GSO) who would undertake additional support activities for the Project. The GSO was not added for many months, however, and when he was, the multiple tasks facing him were immense and AID/T administrative support of the Project continued to be weak. Local staff were finally hired to assist the COP at project expense in late 1978.

b. Support of technical project team personnel

The COPs spent much of their time meeting the personal and project needs of WVU-NCATSU team members. The logistics problems and geographically widespread locations of the two MATIs made this inevitable, but it was not adequately anticipated in planning the role of the COP.

Also, the COP may have done too well in supporting team members. They got so used to instant and effective responses that when the COP turned to other important substantive work and lowered the standard of team support for even a little while, the complaints came readily.

c. Participant training

Selection of participant trainees was the responsibility of the MDD; placement of participant trainees became the sole responsibility of the COP. Exactly how placement was achieved is not known, but it appears to have been through mostly informal channels. Time pressures, past student academic performance, close linkages between the COP and WVU-NCATSU and a host of other factors obviously influenced the student placement process. As noted above, the end result of such factors was that most of the students were placed at WVU and NCATSU.

The establishment of a clear system for student placement and the use of more resources for dealing with placement would have been a much better procedure. Ad hoc and informal processes have their place, but the procedures used in this case appear to have been given little attention by any action agency except WVU, with predictable results. It is important to break the link between university contractor and student placement in such programs. Otherwise the choice of university contractor for a training project that includes U.S. university training greatly limits the effectiveness of the participant training component by restricting student placement mostly to the contractor university. Also, while perhaps a minor point, clustering student placement under such a program at one or two universities greatly increases the importance and

status of those institutions with the elite of the developing country over time. While there are some good aspects to building a strong relationship betwene a U.S. university and a country, it can also serve as a constraint to other universities' involvement in meeting the needs of the developing country.

d. Overall project framework

As with many projects, the overall plan for the Agricultural Manpower Development Project faded from the forefront during the implementation stage. By the time of the final evaluation, WVU and NCATSU personnel were unfamiliar with the overall project design, including its specific goal, purposes and outputs. This did not make the efforts of the WVU-NCATSU inconsequential, but it did mean that they were not focused on achieving many of the intended project outputs. As a result, the priorities they gave to various activities were not always geared to the overall project design.

This lack of concrete and well understood focus on the part of everyone involved showed up in many areas of the Project, especially as indicated in the analysis of project purposes and outputs in Chapters IV and V. Overcoming the gradual drift of inputs and energies away from the overall project intent and concrete outputs and purposes is a constant task during project implementation.

It was not done in this Project, but could have paid large dividends. Scheduled COP/team meetings to review EOPS, etc. against baseline data and milestones is probably all that would have been required.

According to the WVU-AID contract, WVU was to make a Program Evaluation Review Technique (PERT) chart for the Project after signing the contract. Even a very simple version of a PERT chart, had it been followed over the life of the Project, would have kept the intent and framework of the Project alive for the COP and his team.

e. Action agency relationships

Working relationships between project participants caused enough difficulty during implementation to affect project progress. Regular communication in the form of frequent (e.g. quarterly) meetings between the AID Mission Director, the DMD and the COP may have helped in working out some of the problems.

f. Level of training of technical personnel

The Project called for personnel at the M.S. or Ph.D. level in technical specialties with some teaching experience. Given the level of training required, the academic requirement in several areas were thought by most participating technical personnel to be excessive. In Agro-Mech, for example, the content of the

courses required good vocational agriculture skills ("U.S. style") or even practical farm experience rather than engineering expertise. In all cases, a good background in practical applications and on-the-ground experience was critical to overcome the fact that most MATI students have had no real experience with the kind of modern agriculture being taught. Fortunately, the team members had such experience to supplement their academic training. To produce the best results, emphasis should be placed on such practical experience in all training programs similar to this one, rather than on well turned academic credentials.

g. Teaching experience

Teaching experience was emphasized in the terms of reference for the technical contractor personnel who were to work on the Project. Some team members did not have teaching experience, nor were they provided with teaching methods skills before beginning their work. Despite this differential in teaching experience, it did not seem to affect teaching or overall work performance. It may have influenced the kind of help offered to host country tutors. Such persons often need a sound methods background to be most effective and expatriate staff without such a background can do little to strengthen tutors' teaching capability.

h. Language

Ki-Swahili was not required of the contract team members, and very little language training (2 to 3 days) was offered under the contract. As a result, many team members did not learn Ki-Swahili and were unable to communicate effectively with a broad segment of society where they were located. While this did not greatly influence their performance of specific jobs at the MATI, it did reduce their overall effectiveness.

i. Flexibility

The WVU-NCATSU project team was not in control of many of the factors that affected their performance. Lack of needed equipment and planned for recurrent funds, disappointing performance on the part of a professional colleague, sudden changes in plans by MATI administrators and many other factors had to be worked around or overcome by the team members to achieve desired results. This quality of "flexibility" should be deliberately sought out in placing technical personnel in such positions, especially when they have had little or no international experience.

4. Conclusions and recommendations

a. Conclusions

- The administrative burden of the Project on the COP was greater than anticipated. Without substantial

support from AID/T or his own administrative staff, he was forced to deal with most administrative details himself, including some such as housing that were outside his scope of work. With the benefit of hindsight, it is clear that the COP should have been provided with an administrative assistant from the very inception of the contract team's involvement with the Project in Tanzania.

- Logistics and moral support for contract team members by the COP was excellent. It required more time and energy than anticipated, however, and inadequate resources were available from WVU-NCATSU and AID/T to rectify the situation. As a result, COP time and energy was devoted to the details of such support at the expense of other project objectives: given such circumstances this result is nearly always predictable.

- Too many participant trainees were placed at WVU-NCATSU. As a result, the short and long term benefits resulting from the participant trainee component of the Project were less than could have been achieved. The COP should have insisted upon a system for placing participant trainees that included inputs from MDD and explicitly matched student training needs with high quality university programs clearly capable of meeting those needs.

- The overall focus and framework of the Project was not emphasized enough during project implementation. As a result, critical inputs were not used to achieve planned outputs and purposes and the basic project intent slipped away from most project participants early in the implementation stage.

- Poor working relationships between some individuals and action agencies implementing the Project hindered progress during implementation.

- The academic credentials of WVU-NCATSU team members was emphasized too much in recruitment and practical, hands-on experience was not emphasized enough. This is especially true in light of the failure to

substantially build up the overall quality of the two MATIs to the point where they could potentially use the skill banks provided by highly qualified degree holder expatriates.

- Flexibility on the part of WVU-NCATSU team members was a critical factor affecting their performance and achievement.

- Teaching experience on the part of WVU-NCATSU team members was not critical to their success as tutors. However, lack of background in teaching methods by some team members may have weakened their ability to contribute to the performance of local MATI tutors and students who became MATI tutors.

- Ki-Swahili language capability was not essential to the performance or success of WVU-NCATSU team members, but lack of language skills did weaken their overall effectiveness in contributing to project objectives.

b. Recommendations

- Administrative support should be emphasized in designing and implementing projects in Tanzania. Adequate financial and human resources should be allocated to AID/T or the contractor for administering projects. Provision of an administrative assistant for COPs of major projects should be given very serious consideration.

- Enough financial and human resources should be allocated to implementation projects to assure that support of contractor personnel will not detract from other project priorities.

- In similar future projects clear procedures for placement of participant trainees should be developed that match student needs with the best university situation attainable. Host country government involvement in such procedures should be required.

- WVU-NCATSU should be requested by AID/T to provide one MDD staff member with a detailed four week working tour of AID/W, USDA, and World Bank training offices to obtain information about: 1) preferred U.S. university programs in all areas of training covered by the Agricultural Manpower Development Project, 2) short courses and in-service training courses and procedures applicable to MDD needs, and 3) student placement procedures and systems for both 1) and 2). This working tour should be initiated immediately and supported with current project funds allocated to WVU-NCATSU.

- Upon the return of the MDD staff member, the COP should work with her or him to bring about a functional U.S. participant trainee placement capability within MDD before September 30, 1980. At a minimum the capability would include 1) immediate access to information about all university programs and short courses identified during the study tour as preferred in the areas of training rendered under this Project and 2) competence in communicating with U.S. universities and other institutions about student placement on both an informal and formal basis.

- A mechanism for consistently reviewing a project in light of its overall plan and focus should be required of each contractor by USAID. The mechanism should assist the COP in 1) keeping each individual project team participant aware of the overall project design and how her/his inputs and activities fit into it, and 2) adjusting individual priorities to better achieve desired progress toward project outputs and purposes. The AID/T project officer should assure the mechanism is used by participating in or being apprised of the result of its use.

- Scheduled quarterly meetings should be held between the AID Mission Director, the senior government official responsible for the project, and the COP for each major implementation project. Participants would discuss project progress and problems, especially difficulties and friction between action agencies and individuals involved with the project.

- Emphasis should be placed on a team members' ability to provide needed training and other contributions in future training projects, rather than to their academic qualifications. Host country involvement in the interview and selection of team members should be encouraged.

- In similar future projects, thorough teaching methods training should be required of project team members to enable them to train trainees and future tutors effectively.

- One month of intensive Ki-Swahili or other appropriate language training should be provided to all team members who consistently work with a broad range of local people in Tanzania.

B. Commodities

1. Appropriateness and sufficiency

The equipment ordered for the Project was generally appropriate to the training needs of the MATIs. There were many items—lab equipment, library materials, teaching aids, etc.—that were especially valuable as means of increasing general knowledge and specific skills. As noted in section seven below, however, it is doubtful that many of the new

skills based upon the Project equipment package can be applied to the problems of the agricultural sector; the equipment and technology available at the MATI are seldom available in posts to which MATI graduates are assigned.

Both WVU-NCATSU and MATI staff felt that some of the items purchased were not particularly appropriate. Initial transport vehicles were American Jeeps and, later, Chevrolet pickup trucks. Both are very difficult to maintain in Tanzania because the maintenance capability and spare parts system is heavily oriented toward Landrover and Peugeot equipment. Because this posed such a great problem, a waiver of the buy-American requirement was obtained and later vehicles ordered for the Project were Landrovers. MATI staff reported minor problems such as microscopes that were too simple for desired lab work. The evaluation team noted several examples of equipment items that were standard American farm items, but of little use in Tanzania. A glaring, but isolated example of inappropriateness cited by everyone was a four-row corn planter which was too large for the tractors supplied and generally unnecessary at the MATI site. It had never been used, except for student practicals. It could have readily been converted to two useful double row planters, however, although no one had ever done so.

Spare parts for nearly all equipment was a problem. This stemmed

from the fact that the equipment was U.S. and lacked in-country supply lines and from not being able to have just the right spare part on hand when something needed repair.

U.S. technical personnel sometimes desired equipment in addition to that supplied for their teaching and special projects work later on in the Project. The majority of the funding for equipment (USAID loan funds) had been expended early in the Project, however, and additional equipment orders were not always possible from WVU contract funds in the quantities needed. The WVU contract had only $28,000 of "equipment" funds in it for nine people over six years.

There was often a lack of enough consumables to enable the equipment to be used by all students or as frequently as desired by tutors. Welding rods, film, etc., were often in short supply. This was mostly a recurrent budget problem, in that most consumables were MATI responsibility. In some cases, however, consumable items were ordered with the equipment; larger amounts of most of these consumables would have been useful.

2. Quantity

The quantity of equipment ordered was generally approximate. There were numerous cases where 10 more of one item and 12 less of another would have been better for MATI training purposes. This might revert to just the opposite case next year, however, depending upon a tutor's emphasis, number of students, etc. In general, it did not

seem to be a major problem.

Cases of triple ordering some equipment and doubling up orders on other supplies did occur during the Project because of lack of control of equipment expenditure rated during funding allocation periods and lack of coordination of support from this project and a mostly complementary IDA project.

AID and IDA both supplied the two project MATIs with a full complement of lab glassware and other items. Then the COP reordered this and other equipment already purchased for the MATI again after being notified by USAID that substantial project equipment loan funds (reportedly $75,000) would be lost to the Project if not used within "the next 48 hours." Given the time limitation, his only option was to duplicate past invoices in making up the new order. This overlap in ordering project equipment provided MATIs Ukiriguru and Mpwapwa with many more items of certain equipment than will be needed for several years.

Transport provided by the Project was solely for expatriate technical staff until turned over to the MATI at their departure or when replaced by a new vehicle. MATI vehicles were to be provided by the TanGov. Transport was very thin at both MATIs at the time of the final evaluation, however, and administrators of both MATIs and in MDD felt that additional transport provided <u>to the MATI</u> by the Project would have been extremely useful. Without adequate transport, they point out, students cannot get to more distant field practicals, food procurement

for the students is difficult, and so on. Under these circumstances, the quality of project transport provided WVU-NCATSU staff was viewed with longing by MATI personnel; in fact, it was often requested (and provided) for use on special MATI business and emergencies.

The transport situation at the two MATIs was not so dire when the Project was begun. IDA had just provided buses for student movement and MinAg vehicles were more plentiful. Since then, some of the buses have become inoperable and TanGov vehicles have not been replaced with regularity.

3. Ordering procedures and timeliness of arrival

The bulk of project equipment was purchased with USAID loan funds which were separate from the WVU-NCATSU technical assistance contract. A specialized and experienced company in the U.S. was selected by WVU and USAID to handle these equipment purchases according to USAID procedures. Experience with the company was only marginally satisfactory, partly because of communication problems and partly as a result of the company's ineptitude. Despite such problems the equipment ordering process was generally successful, but slow. Arrival of the equipment meshed with the requirements of WVU-NCATSU technical personnel, however, because of their late arrival in Tanzania.

Smaller and later orders of equipment (under the technical assistance costs of the Project) were received at various times. These were purchased with WVU-NCATSU contract funds and depended on WVU

backstopping; the bureaucratic nature of the WVU system and lack of logistical support for the stateside WVU project director made the arrival date of these orders uncertain at best. The time periods between ordering and receiving equipment were sometimes astoundingly long, even by Tanzanian standards.

4. Maintenance and use

Maintenance requirements for the equipment ordered varied from the complex requirements of a Landrover to the simple requirements of a glass beaker. In general, the simpler items were well maintained; whereas vehicles, tractors, film projectors and other more complex equipment was not well maintained (except for those items directly under the control of WVU-NCATSU team members).

Maintenance problems that did occur were caused by three basic factors:

- lack of adequate spare parts;
- lack of preventive maintenance (and improper use); and
- lack of repair skills and tools.

A major contributing factor to maintenance difficulties was lack of recurrent funds which limited overall maintenance capability.

Substantial effort was devoted to equipment maintenance training efforts by most of the WUV-NCATSU staff during their tours. This enhanced maintenance capability for items ranging from tractors to prepared microscope slides at the two MATIs and increased student

familiarity with maintenance of many different items of equipment provided under the Project. Exactly what effect the departure of WVU-NCATSU personnel will have on overall equipment maintenance is not clear; for specific items such as vehicles and tractors, however, it is likely to result in lower maintenance standards.

The spare parts packages for a number of project equipment items, including those assigned to WVU-NCATSU personnel, have become depleted during the life of the Project. Unless corrected, this will lead to substantial maintenance problems soon after the WVU-NCATSU team departs and to inadequate or non-use of project-supplied equipment.

Use of the equipment provided was generally good during the life of the Project. A few items of equipment were not used at all--e.g., the four row corn planter--and some were seldom used. Others, such as vehicles, were used extensively. After being turned over by the WVU-NCATSU team, project vehicles at both MATIs were sometimes misused and abused.

Much of the use of equipment that is not common in Tanzania was at the instigation of WVU-NCATSU team members. Tanzanian tutors are not familiar with the equipment and, in many cases, are not using it now. It is doubtful that this equipment will be used much when the WVU-NCATSU team leaves the MATIs.

5. Location and control

The equipment supplied by the Project is located in the central

store and at departmental and operational locations throughout the two MATIs. The evaluation team physically inspected much, but not nearly all, of the equipment to determine its location at both MATIs. In general, it concluded that equipment is physically present, is located at the most appropriate site at each MATI for meeting its intended use, and is accessible to the tutors and students it was intended to support.

The Devres evaluation team reviewed the equipment control systems at both MATIs. It also spot checked a few individual equipment items within the system to see if the information delivered, corresponded with actual equipment location, condition and use.

The Mpwapwa MATI scored well; the records were well kept and the control system for project (and other MATI) equipment was accurate in all but a few circumstances. Most importantly, the person who had signed for the equipment seemed to be discernible via storekeeper records at all times.

MATI Ukiriguru scored badly on the records review and spot check test. As nearly as the evaluation team could ascertain via physical inspection and interviews, all project equipment is located at the MATI. However, the MATI's storekeeper records are general and incomplete and cannot be used to make a precise equipment check without a physical inventory. Nearly all project equipment (and other equipment) has been transferred to persons in the various departments some time in the past. (The central store is virtually empty.) Once this transfer

is made, the department becomes responsible for the equipment and its control. Numerous individuals had signed for equipment in the past, but the storekeeper could not recognize their signatures. He could only indicate the department where he thought the equipment should be according to its description. The evaluation team requested a list of project equipment from the MATI Ukiriguru administration; it was never provided because of the "difficulties" involved.

MATI Ukiriguru administrators did not like the physical control system used by WVU-NCATSU for providing project supplies to the MATI. The equipment was received in Dar es Salaam (where one shipment usually included items for the two MATIs), by the COP, who took a physical inventory of it, repacked it for each of the two MATIs, and shipped it by whatever means he could find to a WVU-NCATSU team member at Ukiriguru or Mpwapwa. The team member usually opened and inventoried the material, then checked it into the MATI's central store, often item by item.

MATI Ukiriguru staff felt that the equipment, (1) should have been delivered directly to them from Dar es Salaam, and (2) should at least arrive at the central store unopened. They were concerned that WVU-NCATSU team members might be taking items, such as calculators, etc., from incoming shipments for their own use before checking the remainder of the equipment received into the central store. Sometimes, they say, no packing lists or issue vouchers accompanied the equipment brought to them from Dar es Salaam. While the MATI could limit its responsibility

to what items it did receive, the store keeper was reluctant to do so because there was no way he could cross check what Dar es Salaam records implied the MATI had received.

The evaluation team did not find reasons to believe that equipment has been removed from the Project; it does note, however, that there is not an effective control and record keeping system for the equipment at the MATI. Since no one individual is made responsible for the equipment, it could be lost through pilferage, etc., or because it is misplaced. Also, the system for providing new equipment to the MATIs should have been better defined and operated in a way that enabled both WVU-NCATSU and the MATIs to completely fulfill their responsibilities.

6. General condition of equipment

Almost all of the equipment supplied is still functional and its general condition is good. The condition of vehicles, tractors and other complicated items is not as good as that for simple or less well used items.

7. Effectiveness and degree of contribution

The effectiveness of the equipment in contributing to project results was good. It enabled students and tutors to become familiar with and able to use a wider variety of equipment, especially in practical ways. Neither the technology embodied in some of the equipment nor the technological systems which the equipment is intended to

complement are well known to many Tanzanians. Thus, the equipment provided by the Project (with expatriate tutors to enhance its productivity in the initial stages) helped to open up new areas of knowledge and competence in many ways and for many project participants. It was especially important as a motivator of practical experience. MATI tutors and students place great emphasis on "technology." In this context, the existence of modern training equipment is a powerful motivator for using it in practicals, etc.

In some cases, the equipment enabled more precision in learning nd problem diagnosis than would otherwise be possible. Microscopes, for example, enabled students to identify specific animal diseases, whereas without them their diagnosis would depend on analysis of gross symptoms. It also enabled much more efficiency in teaching, as in the case of projectors or models of tractor parts.

A side contribution of much of the equipment was more efficient and effective operation of the MATI itself. The paper copy machine, calf buckets, tractors and many other items contributed in this way.

The degree of contribution made by project equipment to project outputs and purposes was substantial; the presence of WVU-NCATSU team members greatly enhanced its impact. When these team members leave, it is likely that the equipment will contribute less to these goals, primarily because there has been no systematic program to assure that Tanzanian tutors become familiar with and utilize all the available

equipment in their work.

While project equipment has contributed to the skills of students, it probably has not contributed in a major way to the goal of food self-sufficiency. Once they leave the MATI, most certificate and many diploma students will not have access to or reason to use a wide variety of the equipment available to them at the MATI in their work. Thus, much of the learning built upon and supported by the equipment package will be unrelated to the circumstances they face in their real world jobs.

8. Conclusions and recommendations

a. Conclusions

- Project equipment was generally appropriate to the training needs as defined for the two MATIs; it is less relevant to the project goal and the future employment requirements of students than desired, however, because similar equipment is seldom available for use by the majority of MATI graduates in their assigned posts.

- The quantity of equipment supplied was generally adequate, although double and even triple ordering resulted in surpluses of some items. These surplus materials should have been redistributed to other MATIs, but most have not been reallocated to date.

- Ordering and timeliness of arrival of most equipment under the AID loan portion of the Project turned out to be generally satisfactory only because the arrival of WVU-NCATSU team members was long delayed. Equipment ordering through WVU in support of WVU-NCATSU team members was generally satisfactory as to both procedure and timeliness of arrival.

- Equipment maintenance was satisfactory, although complicated items were unuseable for long periods due to spare parts supply and other maintenance-related problems.

- Use of project equipment has been satisfactory to date, a fact which is attributable to the presence of WVU-NCATSU team members. Once the team members depart, it is quite likely that much of the equipment will be used less frequently.

- Project equipment is physically present at the two MATIs, and it is located so as to be accessible to and used by tutors and students. Responsibility for and exercise of effective control of the equipment is good at Mpwapwa and poor at Ukiriguru.

- Most of the equipment is still functional and the condition of most items is good.

- The equipment has been effective in contributing to the desired outputs and purposes of the Project. Once WVU-NCATSU team members leave, however, this effectiveness will fall off, primarily because little effort has been made to institutionalize its use by tutors in the MATI.

- The degree of contribution of the equipment component to the project goal of increasing food self-sufficiency (via trained manpower) is probably much less than envisioned by project designers. The skills and knowledge built upon the equipment package at the MATI are not very relevant in many of the jobs taken by MATI graduates because of the lack of the very equipment that the skills and knowledge are applied to or depend upon.

b. <u>Recommendations</u>

- The appropriateness of equipment for training should be considered in future programs, not only in light of what new information equipment can help impart to the students, but also in

terms of whether knowledge and skills required and supported by the equipment can be used effectively by students in their future posts. WVU-NCATSU technicians should provide detailed comments on the full equipment package used in the Project along with the above lines before September 30, 1980.

- Consumables necessary to make equipment effective for training purposes should be provided by the Project in adequate quantities to enable desired project results to be achieved. If agreed recurrent fund expenditures are inadequate or cannot be guaranteed, adequate consumables should be supplied with project funds.

- In similar projects, better control of equipment expenditures should be assured to avoid last minute orders before funding authorizations expire. If such expenditure controls cannot be achieved, serious consideration should be given to not spending them precipitously simply because they are available.

- MDD and the COP should take immediate action to reallocate all excess project equipment at Mpwapwa and Ukiriguru to other MATIs where it can be effectively utilized. This should be achieved before September 30, 1980.

- In cases where equipment procurement and supply is an integral and important component of a project, AID/W and AID/T should require outside contractors to explain exactly how they will procure equipment under their contract, if awarded, and should carefully examine the past procurement and supply performance of such contractors or their agents as a part of contract award procedures.

- AID/T, AID/REDSO (Regional Economic Development Services Office), and AID/W should assess the capability of several U.S. equipment procurement and forwarding agents to identify those with special competence and good performance records in East Africa and Tanzania. AID/T should encourage or even require project contractors to utilize such capabilities, rather than depending upon

their own backstopping, wherever this appears to be in the interest of USAID and the host government.

- In similar training projects, a supply of training materials on annual basis during the life of the project should be provided, in addition to the major equipment package ordered at the beginning of implementation. This annual traunch of training materials should be managed to provide project team members with an on-going selection of the equipment as needed for their work.

- Remaining WVU-NCATSU technicians should immediately turn over all direct maintenance activities and maintenance management responsibilities to Tanzanian personnel. They should assure that detailed maintenance schedules and systems are in place and understood by these personnel and that adequate spare parts for project equipment are in place before September 30, 1980. AID/T should require WVU to be certain that spare parts packages for all project-supplied equipment, and especailly that to be turned over to the MATIs upon the team's departure, are adequate by the time the Project ends on September 30, 1980.

- WVU-NCATSU staff should carefully review the use of all project equipment with appropriate personnel at the MATIs, including the use of any teaching or training materials associated with the equipment before September 30, 1980. This activity should include a review of all equipment supplied by the Project so MATI tutors and administrators are fully aware of all the equipment available to them.

- The system of equipment control at MATI Ukiriguru should be strengthened immediately, beginning with an audit of all storekeeper operations. A physical inventory of all project equipment should be conducted and responsibility for its safekeeping and use should be assigned to specific individuals. Adequate procedures (and supporting records) for physical control of the equipment should be developed at both department stores and the central store before the Project ends.

- Adequate procedures (and supporting records) for physical control of MATI vehicles by top MATI administrators should be developed at both MATI Ukiriguru and Mpwapwa by MDD. Given the serious shortage of transport at all MATIs, MATI vehicles should be made the direct responsibility of each MATI principal; misuse or abuse of any vehicle should result in appropriate penalties being assessed against those involved and the principal.

- In similar future projects, much more attention should be given to institutionalizing the use of the equipment provided. As a part of this process, adaptations of the equipment or its use, as well as development of similar equipment from local materials wherever possible, should be given serious attention.

C. Participant Training

1. Selection of participant trainees

The MDD had full responsibility for selecting participant trainees and used an elaborate system to identify potential candidates. Nomination for further training depended entirely upon action by a candidate's superiors. No one could personally apply for training. A small group from among all nominated candidates was called for written exams and an interview by MDD, after which final selections of participant trainees were made by MDD. As nearly as the Devres evaluation team could determine, the participant trainees were not selected for training to return to a specific post. Nor is it clear that they were selected to best support the Project upon return to Tanzania.

The MDD system worked well in providing the trainees. It depended upon many factors other than merit, however, and it was impossible for the

evaluation team to determine whether the best qualified and most capable candidates were selected. The nomination of candidates by their superiors could have resulted in favoritism, but it is not clear that it did. Allowing students to apply directly for training on their own initiative, however, would have helped assure that highly qualified and motivated candidates were considered.

2. Choices of areas of study and university programs

Reasons behind the choice of areas of study for selected students were not clear in many cases, even to participant trainees themselves. Participants were usually told what they would study.

Placement of students at U.S. universities has been discussed elsewhere in this chapter. A system for placing students in U.S. universities should have been developed and MDD should have participated in the placement process. Another area where improvement was needed was in communicating with students selected on the basis of the written exams and interviews about when and where they would go to school and what they would study. Students were usually told that they had been selected, but several months often passed without further communication. Then, to make matters worse, participant trainees were sometimes given only a few days' notice (sometimes one day) to report to MDD in Dar es Salaam for exit processing to study in the U.S. For those with families and other obligations, this created unnecessary hardship.

Processing of students for placement in U.S. universities was especially weak, both in Dar es Salaam and at the universities in the U.S. In Dar es Salaam, meetings of a few hours at best were held with departing students at MDD; these dealt almost exclusively with essential logistic matters. No time was spent in discussing individual student programs, U.S. culture, or in providing detailed information about the local area where the student was going. No advanced reading was suggested or assigned.

On the U.S. side, students felt alternatively appreciated and helped and bewildered. Most were welcomed, passed on to the foreign student advisor, and promptly left to their own devices. For the most part, those who got good major professors did well, while others had more trouble. Although most of the students were at WVU or NCATSU, they felt no special link to the project administrator at the two institutions except in cases where the administrators intervened in student programs in the name of the Project or when problems got large enough that the stateside project administrators had to get involved. Individual participant trainees did not identify these WVU and NCATSU administrators as project persons to whom they could go for a sympathetic hearing when their study programs began to go awry.

3. Adequacy of training

The adequacy of training for participant trainees was generally satisfactory. Some difficulty arose in making this judgment, however,

for three reasons. First, students were often not being trained for specific assignments. In this situation, adequacy simply means they received the same standard content and level of every other student in their respective program at the same time. Second, adequacy and relevance are related and the relevance of the student's training to Tanzania in general and to their specific job requirements in particular could not be tested by the evaluation team. Third, adequacy as used here is a relative term. An adequate student program in one university may not be as adequate as the same program in another. Five of the 61 students trained were able to assure greater adequacy in their programs by carrying out field research in Tanzania during their training.

Apart from the general adequacy of student training, there were numerous specific cases at WVU and NCATSU in which the training was definitely inadequate. At one point this required the help of the Embassy of Tanzania in Washington, D.C. These problems arose primarily because of poor student placement. In the case of one agricultural engineering student at NCATSU, the difficulties were so enormous that the student studied at three schools and cumulated almost enough extra and unapplied hours to get another degree. Despite this, he did not receive his NCATSU diploma until months after graduation. By then the university had forgotten he graduated with honors, and it has still not sent the requisite diploma.

4. Relationship to overall project strategy

The relationship of participant training to the overall intent of the Project was not well maintained during the selection, placement and training process. Students were not selected for return to specific posts, they were not placed in the best programs available for meeting identified needs, and their programs of study sometimes were not tailored to specific requirements. This lack of clarity on the input side made assignment of returning students to tasks other than those supporting the major thrust of the Project much easier. The training, however, has undoubtedly had an impact on the capability of returning students to contribute to the project goal, even if most were not assigned directly in support of the Project as originally envisioned.

5. Conclusions and recommendations

a. Conclusions

- Insufficient attention was given in selecting participant trainees to the project strategy. Selection for training to return to a specific post would have made the relationship between training inputs and project intent clearer and longer lasting.

- Basing the selection of participant trainees solely upon the recommendation of their superiors is likely to screen out highly qualified candidates from further training. Allowing student initiated applications would complement this system.

- A student placement system with MDD involvement would have avoided many of the problems that later arose and provided more benefit from the participant trainee component.

- Conscientious attempts by stateside project administrators to monitor the adequacy and content of training at WVU and NCATSU would have benefited all project action agencies and participants. Given the concentration of students at WVU and NCATSU, a monitoring trip by MDD officials could also have paid large dividends.

b. Recommendations

- In future training projects, particular attention should be given to the direct linkage between selection, placement and the training received by participant trainees and the end results sought by the project. Selection of trainees to come back to specified positions should be used to establish this linkage whenever possible.

- Selection of candidates for U.S. training should be based on merit as much as possible. Consideration of candidates should not be restricted to those nominated by their superiors. Nominations should be broadened to include student initiated applications and other means of assuring that highly qualified candidates receive consideration.

- An adequate student placement system should be established that includes MDD input (along the lines recommended in part A of this chapter).

- Participant training should be monitored by the host country agency responsible for the project and by the responsible contractor with funds designated in the project; program content, student satisfaction and adequacy of the overall program should be considered and actions necessary to improve each student's situation should be taken promptly by MDD and the contractor whenever warranted.

D. USAID

1. Funding

AID was to supply a total of $3.748 million for the Project, of which $390,000 was a loan commodity purchase and for housing construction and $3.358 million was for technical assistance, participant training, training materials as planned, although the evaluation team did not review the expenditures in detail. The initial contract level was altered via 15 amendments: authorized expenditures for WVU-NCATSU were $4.448 million at the time of the terminal evaluation. Estimated total expenditures by the end of the Project were $3.991 million, leaving a possible surplus of $456,000 when the contract expires on September 30, 1980. AID's funding of the Project was more than adequate, therefore, primarily because the WVU-NCATSU consortium did not provide the total number of person years of technical assistance originally envisioned.

In retrospect, the line item technical assistance budget used to implement the Project was weak in several areas. Transportation in-country, supplies and equipment expenditures in support of the project team and other line items were too low. AID/T should have assured that the start-up budget was as realistic as possible on a line item basis before beginning implementation and should have urged WVU-NCATSU to reallocate funds between line items in the budget during implementation to better meet critical project objectives. Without this initial guidance and subsequent monitoring, the Project remained under unnecessary budget constraints that diminished project success.

Both AID/W and AID/T had serious difficulties monitoring project expenditures. At times, neither USAID or WVU knew whether certain expenditures had been formally authorized. There continues to be some question as to the total amount of money authorized and available for the Project. These problems have resulted from several factors. There were many additions and deletions to the basic project prepared and approved by numerous AID/W and AID/T personnel. Several PP studies, some planned and some unplanned, were included within the Project, and attempts were made to convert them into project add-ons. AID/W said "no" to these attempts, but the combining and recombining of project components and budgetary numbers left project participants confused about authorized levels of project funding and whether certain expenditures had been approved or not.

Another factor contributing to the confusion was the continuous staff turnover in both AID/W and AID/T. WVU was also reticent or unable to fully document its budgetary status at certain points. WVU seemed to be of the opinion that since it had been authorized a certain contract amount, it could spend that amount even though it was not using it on nine field technicians as planned. AID/W and AID/T were constantly faced with new WVU ideas about how to spend the "extra" money, some of which it approved. This had the effect of making the Project a basket consulting contract; several add-on studies were undertaken by WVU personnel at the request of the Director of Manpower Development. Some of the project expenditures that resulted from these

and other changes apparently were agreed to, more or less, informally and without adequate documentation by AID/W, AID/T or WVU.

It is not clear to the evaluation team that anything useful could be learned from attempting to unscramble the Gordian knot created by the above situation. A post project audit of WVU may help assure that WVU has or will establish high quality contract financial management procedures for future project implementation work. A close look at the AID/T and AID/W procedure used in handling this project may point out ways that the financial management of both could be improved in technical and program terms. However, there is very little institutional memory of this project because of AID/T and AID/W personnel turnover. Attempts to clarify project expenditure decisions would depend on the "paper trail" which is already known to be weak at certain points. Such attempts are unlikely to be worth the effort they require, especially in light of the valuable lessons that can be learned from examination of other aspects of the Project.

2. Personnel

AID/T provided a designated project "Manager" (the title was later changed to Project Officer) for the Project at all times. It also provided some GSO (General Service Officer) support, although the exact level to be supplied by AID/T was never specified.

The AID/T Project Manager/Officer involvement in the Project, while always significant, was never adequate, but it did improve

substantially from early 1978 onward. As noted in Chapter VII below, project site visits were seldom made by these officers and, for the most part, their input was relevant only to the COP. High AID/T personnel turnover, lack of experience on the part of Project Officers, inadequate AID/T transport and poor working relationships between Project Officers and the COP minimized the contribution of AID/T personnel to the Project.

3. Logistical support

AID/T's logistic support to the Project varied greatly from time to time, but it was generally inadequate. Lack of resources, bureaucratic problems, and a host of other factors made the GSO-WVU/COP relationship difficult at best, and the Project suffered as a result. The litany of problems faced in constructing housing for WVU-NCATSU team members, for example, is documented in the COP's annual project reports and AID/T files. This was a GSO responsibility; its failure of accomplishment on time and the very poor quality of the completed houses affected the timing of the entire project and the morale of nearly everyone associated with it.

4. Conclusions and recommendations

a. Conclusions

- USAID funding for the Project was more than adequate, although this was mostly the result of WVU-NCATSU being unable to supply the number of technical assistance personnel planned.

- The original project budget was weak at several points and should have been altered during contract negotiations or during the life of the Project to better contribute to project achievement.

- AID/T, AID/W and WVU approval, monitoring and control of project expenditures was weak; some project activities were altered, added or deleted on an informal basis resulting in substantial confusion about expenditure authorizations and total project funding levels.

- AID/T personnel were always assigned to the Project despite high turnover rates in the Mission, but their level of input was generally inadequate. They seldom visited the project site(s) and were not effective in assuring that project inputs were used to support the overall project strategy.

- AID/T's level of GSO input varied substantially over the life of the Project, but was not adequate in an overall sense.

b. Recommendations

- AID/T should assure that project budgets are adequate on a line-by-line basis before and during the life of a project; changes in critical line item levels should be insisted upon, and changes in non-critical line items should be encouraged.

- In similar future projects, AID/T should develop expenditure guidelines--e.g., project expenditure per student as compared to MATI expenditure per student, U.S. training costs per student, etc.,--to monitor and evaluate initial project budgets and subsequent alterations.

- AID/T should review the remaining project budget on the basis of this evaluation and provide WVU-NCATSU with detailed guidance on how to use available project funds to complete the Project most satisfactorily. If necessary, AID/W assistance should be requested in clarifying what funds remain in WVU's budget and WVU's plans for their use in completing the Project.

- In future similar projects, AID/T should emphasize budget monitoring and control as a means to achieve overall project strategy and goals.

- AID/T should insist upon adequate in-house logistic resources to support its overall project load or upon sufficient funding to enable contractors to meet their own logistic requirements.

E. TanGov

1. Funding

The MinAg was to provide funds to the Project as follows:

- Recurrent expenditures at MATIs Ukiriguru and Mpwapwa of 10,000 shillings per student per year; and

- Trust Fund contributions equivalent to Tanzania salaries for each expatriate provided by USAID.

The first item was not fully provided by the MinAg; the second item was provided.

MinAg recurrent expenditures at the two MATIs fell well below the agreed figure of 10,000 shillings per student per year during each year of the Project. During the year 1978, for example, 4,420 shillings and 7,101 shillings per student per year were provided at Ukiriguru and Mpwapwa respectively (see Annex 20).[1]

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[1] For comparison purposes, the following recurrent expenditure rates per student per year were reached at other MATIs for the year 1978: Tengeru, Shs. 8,196; Nyegezi, Shs. 7,229; Ilonga, Shs. 10,256; Tumbi, Shs. 6,855. MATI Mpwapwa received the lowest and MATI Ilonga the highest allocations per student. The average received per student for all MATIs was Shs. 8,001 (see Annex 20).

Recurrent expenditures at MATIs depend upon the overall budget received by MDD from MinAg. Thus, the allocation of total funds to MATIs is outside MDD's direct control. Within the total MDD budget, separate MATI allocations are left to the DMD. As shown in footnote 1, (p. 100) MATIs Ukiriguru and Mpwapwa received less than many other MATIs. Reasons for this allocation pattern are legion. However, the pattern has been consistent during the life of the contract, and despite signed annual ProAgs indicating the 10,000 shilling per student obligation of the MinAg, AID/T apparently never urged the TanGov to meet the agreed recurrent expenditure target for the two MATIs. As a result, both MDD and AID/T allowed low budget figures for the two MATIs to become the norm rather than the exception. This low level of recurrent funding detrimentally affected the Project many ways, as indicated throughout this report.

2. Personnel

MDD clearly was to provide participant trainees, and implicitly was to provide MATI students sufficient to reach the targeted output of certificate and diploma graduates. (It also agreed to provide enough highly trained staff to assure that two-thirds of the tutors in each MATI were degree holders, but this is treated as an output in this report.) It provided the first input, but did not fully supply the second.

As pointed out in Chapter V, student intake at both MATIs actually

decreased substantially during the Project for several reasons. This raised the cost of the Project per student and lowered overall project impact. Had AID/T insisted that the number of students in Ukiriguru and Mpwapwa remain high, it is quite likely that this could have been arranged by MDD.

3. Conclusions and recommendations

a. Conclusions

- MDD was unable or unwilling to meet its recurrent budget obligations under the ProAg. AID/T should have urged that the obligation be met or sought to increase project expenditures to offset the lower than expected support of the Project at the MATI level in critical areas.

- MDD consistently did not intake the number of students in the two MATIs planned for in the Project. AID/T and WVU-NCATSU should have urged MDD to provide the two MATIs with their planned complement of students each year.

- MDD satisfactorily provided trust fund contributions as agreed in the ProAgs.

b. Recommendations

- In future similar contracts, AID/T should monitor agreed TanGov project contributions and urge compliance when shortfalls occur, especially when they are critical to project success. In the case of recurrent expenditures in Tanzania, AID should either insist that agreed project support levels are met, or provide for substantial local currency funding to overcome the bottleneck created by its absence.

- In future similar projects, AID/T should include provision of the needed number of students, trainees, etc., at supported institutions in the ProAg as an obligation of the TanGov; such an obligation should be taken seriously by both sides and monitored by AID/T.

VII. PROJECT IMPLEMENTATION AND MANAGEMENT

A. WVU-NCATSU

1. Home office leadership and support

WVU home office leadership and support of the Project was barely satisfactory. Although much project management went on at WVU in Morgantown, West Virginia, rather than in the field, WVU in Morgantown apparently accepted little or no responsibility for evaluating and controlling the program aspects of its contract. Because of this lack of overall project control by senior WVU officials, all conceptual guidance for the Project was effectively abandoned to the COP and no mechanisms or crosschecks within the WVU-NCATSU system were worked out to monitor his judgement or performance in this regard.

Nearly all COPs in major implementation projects are extremely busy people, faced with myriads of operational details. Such was the case in this Project, especially in light of the lack of administrative support provided for the COP. Given such circumstances, it is too much to depend solely on the COP to be the conceptualizer, logistics manager and chief liaison official for the Project. USAID, in contracting with any institution and paying its senior management substantial sums (as it did here), deserves and should get what it pays for -- top level management's deep involvement in and responsibility for the Project.

Of particular relevance in this case is the fact that despite MinAg and MDD failure to intake enough students, place enough degree holders, or provide agreed recurrent funding at MATIs Ukiriguru or Mpwapwa to meet project output magnitudes, the most senior level officials at WVU did not raise these issues with appropriate parties. They were either unaware of the status of their project, uninterested, or both. Whatever the reasons, such lapses on the part of top level WVU management illustrate WVU Morgantown's lack of overall project control and the poor conceptual leadership and support provided for the Project.

The management of most of the financial and logistic aspects of the contract in Morgantown was weak as well. Significant delays in project activities were caused by slow responses to financial and logistic requests and because of difficulty in communicating real problems and needs to decision makers at WVU.

The above results are perhaps understandable when one notes that WVU does not concentrate a significant proportion of its energies on management and support of international development projects and that its primary interest is not to have a more effective system for accomplishing such management and support tasks. It is a university, and its management, financial and logistic systems are designed to support local activities, not to support project teams thousands of miles away. WVU must also work in conjunction with

a state bureaucracy designed to "control", not to enable flexibility and rapid response time to a COP's pleas from the field. Finally, management resources available to this Project at WVU were thin. In combination these factors resulted in poor direction, control, and logistic support for the Project from Morgantown.

NCATSU had no direct contract administration responsibility, but was required to provide certain home office backup support from its field staff members. These appear to have been provided satisfactorily. Some NCATSU officials apparently took a special interest in the project participant trainees at NCATSU; while difficulty arose with the quality of the training available at NCATSU in some areas, the evaluation team found that students appreciated the personal support they had been given at NCATSU.

There were other bright spots; WVU and NCATSU home office staff visited the Project regularly and senior university officials also visited on more than one occasion. WVU's long association with East Africa also helped undergird the Project in several ways and especially in making participant trainees at WVU feel that their professors understood Tanzania and their own problems.

2. In-country leadership and administrative support

The Project received substantial and effective in-country leadership from the COP and from each member of the WVU-NCATSU team

in all or some part of their activities. The COP failed, however, to keep the Project strategy firmly in mind and to guide MDD, his own team members and the two MATIs as best he could according to that strategy. Many project activities therefore went awry and were not seen as part of a whole. WVU-NCATSU team members suffered as a result; many of them wanted to do more institution building, etc. than their teaching loads would allow or than MATI administrators would request. Some hard headed strategy sessions early on probably could have corrected these and other aspects of the Project, at least to a substantial degree. As it was, the leadership provided was directed to the various parts of the Project instead of to the whole.

Administrative and logistic support in the field was as excellent as the COP could make it given existing constraints (of which there were many). The COP concentrated substantial resources in this area and was very concerned about lack of AID/T and AID/W support on the administrative and logistic side. This concentration of effort was probably necessary under the circumstances, and it pleased WVU-NCATSU and MATI administrators greatly. It did, however, reduce the effort that could be devoted to other project tasks by the COP and other team members.

3. Supply of field staff

The WVU-NCATSU consortium's most serious flaw was its inability to recruit and field the U.S. technical staff required by the Project. A total of 464 person months in Tanzania was envisioned by the USAID-WVU contract;[1] as shown in Figure 2, by the end of the Project only 380 person months (82%) will be provided.

Most of the problem is attributable to WVU and NCATSU. They were unwilling or unable to assign their fulltime staff to the Project, and their performance in recruiting off-campus for Project staff was very poor. When WVU-NCATSU did forward prospective candidates, they were often turned down by AID/T or the TanGov. The exact problem is not clear, but two factors were important. First, the contract was awarded without specific permanant staff being committed to the Project by WVU-NCATSU. Second, both WVU and NCATSU seemed to have used slow and ineffectual recruiting techniques such as university newsletters instead of personal contact with existing technical assistance personnel networks and the "old-boy" system.

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[1]An additional 67 person months for a U.S. administrative assistant was also provided in the contract. If this person had been included in the above figure, total person months would be 531, of which WVU-NCATSU will have provided 336 as expatriate personnel and 24 as local administrative assistants by September 30, 1980, or 76% of the person months planned.

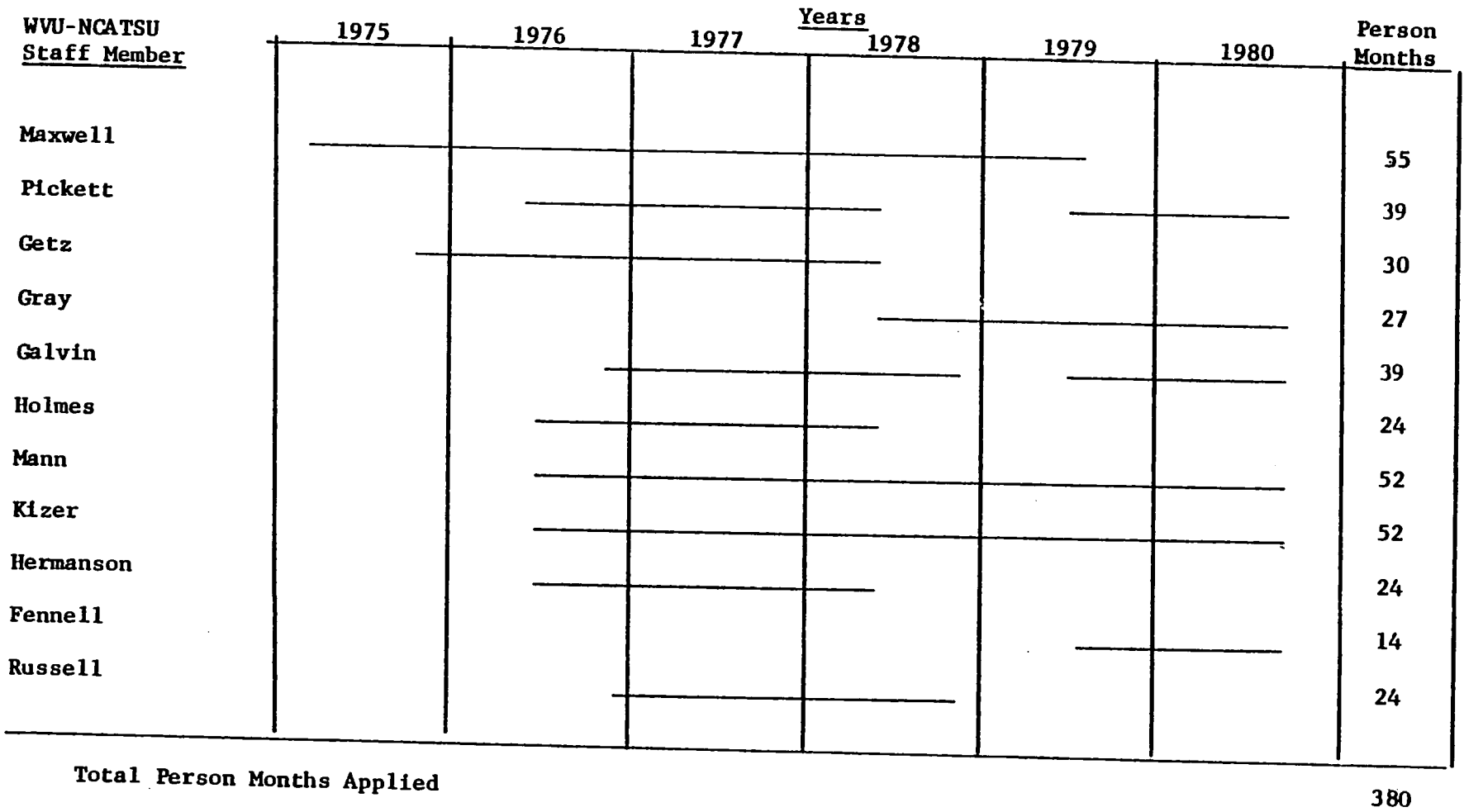

Figure 2. -- Person Months Applied to Project by Long-term WVU-NCATSU Staff

It has been suggested that the initial delay in house contruction made it impossible to recruit; this was surely a complicating factor, but it had nothing to do with the serious recruitment difficulties experienced in 1978 and subsequent years.

4. Allocation and use of resources

The WVU-NCATSU team's allocation and use of project inputs was concentrated very heavily in a few areas--especially teaching, special studies, equipment procurement and distribution, and participant training. Numerous other project areas received short shrift--especially baseline data development, curricula revision, revised lesson plans and new teaching materials, in-service training and evaluation of manpower training effectiveness.

There were many reasons for allocating and using resources in one way rather than another and the evaluation team does not question the day to day decisions made in this regard. In looking at the entire mosaic created by these day to day decisions, however, it is quite apparent that the design intended to guide the Project slipped out of focus, perhaps because of the constant pressures of the moment.

Several particular points deserve mentioning in this regard. First, five studies were carried out under this Project, three as add-ons. While these efforts arguably were nicely related to the overall project, the evaluation team believes they detrimentally

affected it. None of the studies were directly necessary to the success of the Project. Because of the great interest in using them to develop new follow-on projects for the WVU-NCATSU consortium, they absorbed more project resources than would normally have been expected. The flavor of this is evident in all COP annual reports; especially in 1978 when the COP reported he was doing substantial amounts of groundwork for the Farmer Training Project. Because the contract had not been signed then, this effort was obviously at the direct expense of the Agricultural Manpower Development Project, which by that time was already reduced to a cluster of loosely related pieces. In retrospect, it would have been better for AID/T to have run these studies from outside the Project, leaving WVU-NCATSU in-country staff to concentrate primarily on the Project and to assist the study teams only in a liaison capacity.

WVU-NCATSU did not develop Project baseline data. Several reasons for this are apparent to the evaluation team, and other reasons long since forgotten by Project participants probably contributed to this failure as well. The WVU-NCATSU project staff did not know about the baseline requirement. Initially, at least, it seems to have escaped their attention; this was especially true of the team members and may have been the case for the COP.

Everyone in the Project had other priorities. Teaching, conduct of the five special studies, logistics, participant training,

equipment and other areas simply overwhelmed the need to develop baseline data in terms of the importance attributed to them.

AID/T did not push for baseline data development by WVU-NCATSU or MDD until implementation was far along. AID/T personnel had their own problems and gave baseline data less priority than other matters.

WVU-NCATSU concentrated on delivering inputs; nearly all COP annual reports show that the COP thought about and assessed project progress mostly in terms of inputs--e.g., the team had taught many hours, equipment was ordered and arrived, participant trainees were sent, curriculum committees were chaired and studies were done. The need for baseline material so as to be able to assess project performance in terms of outputs did not come up very often if at all.

There were substantial confusion at the two MATIs during the first part of project implementation, especially at Mpwapwa. The curriculum was changed, buildings were built, students were moved, and numerous Tanzanian staff transfers occurred. These changes required extra effort by the WVU-NCATSU team and made baseline data more difficult to think about and develop.

5. Special constraints affecting project implementation

Several constraints affected WVU-NCATSU implementation and management of the contract. First, the delay in building

staff housing slowed the introduction of expatriate tutors at the two MATIs. Second, lack of administrative and logistic support for the COP on the WVU-NCATSU team, by WVU, and by AID/T made Project start-up and implementation more difficult. Third, lack of the full complement of WVU-NCATSU personnel during the latter half of the Project reduced input levels considerably. Fourth, TanGov failure to provide agreed recurrent budget funds, adequate student intake, and appropriate degree holder tutors for the two project MATIs reduced program effectiveness in numerous ways. Fifth, friction between some project participants made working relationships between WVU-NCATSU and AID/T less productive.

6. Follow-up on special problems

WVU-NCATSU's follow-up on special problems was sometimes excellent, as in the case of development of teaching materials and sometimes poor, as in the case of baseline data. In the former, as the new COP became aware that this important project output was not going to be met, he pushed hard to assure that these materials would be produced and distributed. There still is some danger, however, that WVU-NCATSU end-of-project budget woes will reduce the extent to which these materials can be reproduced.

In the case of baseline data, as with long-term technical personnel recruitment, WVU-NCATSU seemed to be incapable of following up either rapidly or adequately.

7. Procurement, supply and repair

As discussed fully in Chapter VI on inputs, WVU's performance in procuring and supplying equipment and consumables and in making repairs was split down the middle. WVU in Morgantown performed haltingly, whereas the WVU-NCATSU in-country team performed very well.

8. Relationships with Tanzanian staff

WVU-NCATSU relationships with Tanzanian staff at all sites associated with the Project were excellent. Only in the case of Ukiriguru were there any problems at all, and they related to professional performance of specific team members, more than to personal relationships.

9. Conclusions and recommendations

a. Conclusions

- o WVU's home office leadership and support was barely adequate. Failure to assure project focus, to supply required technical field personnel, and provide strong logistics support were especially damaging to project accomplishment.

- o WVU-NCATSU's in-country leadership and support was effective in all but two critical respects: it failed to retain a clear focus of the overall Project and to guide resource use accordingly and to build healthy, productive working relationships with AID/T.

- WVU-NCATSU's allocation and use of project resources concentrated too heavily on some areas and too lightly on others. Its use of resources for five "spin-off" studies and its direction of most participant trainees to WVU and NCATSU for their training diminished the benefits that could have been derived had overall project goals been more clearly kept in mind.

- Numerous important constraints affected WVU-NCATSU's effectiveness in implementing and managing their portion of the Project. These included staff house construction delays, lack of administrative and logistical support by WVU in the U.S. and by AID/T, lack of the expatriate tutors planned for, inadequate recurrent budget expenditures, and friction between WVU-NCATSU and AID/T staff.

- WVU-NCATSU follow-up on identified problems was excellent in some uses and very poor in others.

- WVU-NCATSU procurement, supply and repair activities were excellent in Tanzania but poor in Morgantown.

- WVU-NCATSU relationship with Tanzanian staff was excellent at all project related locations.

b. Recommendations

- In like projects involving an outside contractor, AID should assure that senior management at the home office of the contractor institution is responsible for not only budget, but also program aspects of the Project and that the Project is implemented according to a design and implementation plan agreed to by all parties.

- AID/T should monitor all training projects to assure that resources are not excessively concentrated on some aspects of the projects to the exclusion of others. This is especially important where both training and institution building are included as part of the same project.

- AID/T project officers should identify any constraints that result from nonfulfillment of project obligations and problem areas requiring follow-up by contractors and other parties to the Broject and should push vigorously to assure effective action is taken with respect to each one.

- AID/T should request WVU to provide sufficient funds to produce all teaching materials prepared by WVU-NCATSU personnel in sufficient copies to enable their dissemination and use throughout the MATI system.

B. USAID

1. Introduction

Both AID/T and AID/W played important roles in all aspects of the Agricultural Manpower Development Project. Numerous AID individuals were involved and many of these made important contributions to the successes achieved by the Project.

In general, AID/T's management and implementation activity in support of the Project was judged by the Evaluation Team barely to be adequate. There were some points at which it was exceptionally good; others can be noted where AID/T's performance was unsatisfactory. The areas discussed below illustrate both.

2. Project design

As indicated earlier in this report, the design of this Project was weak in several respects and some aspects of project implementation exacerbated these weaknesses or further undermined

the strength of the overall project design. AID/T took no action with respect to either problem throughout most of the implementation stage. One AID/W staff member did criticize implementation of the Project on conceptual grounds, but by then it was too late to make significant corrections.

The mid-term evaluation of the Project was especially deficient in noting overall design flaws and implementation problems that were undermining the initial project concept. Had AID/T been more aware of the Project's design and implementation weaknesses at that time, the mid-term evaluation could have been used to alter at least some of the design aspects of the Project and many of the implementation problems could have been corrected as well.

AID/T's later project evaluations began to come to grips with these problems; the recommendations made were never carried out, however, although strong efforts were made by AID/T to do so.

3. Management, monitoring and communication

USAID's management, monitoring and communication with respect to the Project were weak during all but the last year or so of implementation. Evidence available indicates the conceptual framework and major focus of the Project were not clear to some AID/T project officers; they took little or no action to correct various situations that showed WVU-NCATSU and MDD were not implementing the Project in a manner consistent with the overall project design.

It is possible, even likely, however, that AID/T project officers were unaware of many of the basic problems with project implementation. They did little in the way of discussing or clarifying the Project's overall intent with WVU-NCATSU, MDD or MATI administrative staff. Only small amounts of time were spent by them at MATIs Ukiriguru or Mpwapwa. When there, they did not conduct routine in-depth analyses of project components and activities (except during the latter evaluations of the Project).

When difficulties were clearly defined, AID/T project officers did not take definitive corrective actions or raise and pursue issues in a way that encouraged or required others to take such action. Put another way, AID/T exercised very little control over project implementation activities, even when the allocation or use of inputs and outputs was not appropriate in the light of project needs or did not satisfy ProAgs or contract obligations. Many examples of areas in which early and persistent AID/T guidance was called for have been cited earlier in this report. They include, but are not limited to, areas such as:

- creation of teaching materials
- conduct of in-service training
- development of baseline data
- placement of participant trainees in U.S. universities

- assignment of returning trainees to MATIs Ukiriguru and Mpwapwa
- intake of students at Ukiriguru and Mpwapwa
- need for removal of a few project-supplied U.S. tutors

It is possible that substantial consideration was given to these and other matters and that corrective actions were attempted; little evidence exists to support such a view. Or, because of changes in the total context of the Project--such as rapid decentralization--AID/T may have viewed project activities in a broader frame of reference and concluded that certain issues could not be resolved (e.g., recurrent funding for the two MATIs). AID/T may also have decided that resolution of these issues so as to support the Project would not be the best result for the overall MATI system or the agricultural sector (e.g., intake of more students and placement of more returned participant trainees at the two MATIs). There is no evidence that AID/T ever made overt decisions along these lines, but lack of effort to deal with such issues definitively could imply such conclusions.

The involvement of top level Mission personnel with MDD and WVU-NCATSU project participants was not extensive. Serious trouble-shooting efforts (including a visit to WVU in Morgantown by the Mission Director) were made, however, to resolve major problems such as WVU-NCATSU's failure to provide required expatriate staff.

The feeling that the Project had basic problems increased in the latter half of the implementation stage, and AID/T applied more evaluation effort and monitoring input at that time. For project success to have been maximized at that late date, however, in-depth attention and very firm action at the senior AID/T level would have been required. Whether this level of input was possible in the light of other Mission priorities is unclear. It was not provided directly to this Project, but attempts were made to apply the lessons being learned from this Project to other related training projects which could be improved more readily.

AID/T's communication with other parties involved in the Project was inadequate and sometimes too formal. For example, the mid-term evaluation was forwarded to MDD by letter; the requested MDD response to the evaluation's recommendations was received by AID/T many months later. Communication with the COP was at some periods stilted because of poor working relationships caused by personality problems.

4. Administrative and logistic support

The administrative and logistic support to be provided for the Project by AID/T was never clearly defined between the action agencies; it varied depending on AID/T personnel availability, personalities and various interpretations given to contracts, regulations and other policy and procedural instruments. For the most

part then, the AID/T and WVU-NCATSU administrative and logistic support relationship had to be defined and redefined as implementation proceeded. This arrangement built a potential source of friction and misunderstanding into the Project.

As project implementation proceeded, AID/T administrative and logistic support for the Project faltered, at least as to what was expected by WVU-NCATSU. Delays in house construction, bureaucratic procedures that made it difficult or impossible to meet project needs, lack of sufficient overall AID/T GSO capacity, poor AID/T transport capability, and a variety of other factors contributed to the total set of problems faced by the COP and made project implementation more difficult. It also tarnished COP-AID/T working relationships. The attitude of being nonsupportive of WVU-NCATSU in this key area developed at AID/T; in turn the view that AID/T was incapable of high quality performance developed at WVU-NCATSU.

AID/T's performance in this area appears to have resulted from many problems outside the immediate control of the Mission. It lacked adequate GSO capacity and years passed before AID/W was able to provide appropriate personnel. It did not have enough transport. There was rapid turnover of personnel throughout the Mission. Several other major projects were also on-going or in various stages of start-up. Several of the Project's logistic

problems were not readily amenable to solutions by AID/T alone, but depended upon AID/W, equipment suppliers, construction contractors, TanGov agencies and others.

A solution to the problem required at least three things to take place: 1) provision of adequate GSO capacity at the Mission; 2) a clear definition of the AID/T administrative and logistic support that would be provided to the Project; 3) the smoothing out of working relationships between AID/T and WVU-NCATSU. None of these was ever accomplished to the satisfaction of both parties until near the end of the Project.

5. Funding

USAID funding of the Project was satisfactory and has proceeded as planned during the life of the Project. Numerous amendments were made to the WVU-NCATSU contract, with the net result being an authorized level of expenditure of $4.447 million. AID/T and WVU-NCATSU seem to be agreed on the amount of funds required to complete the Project. These will result in total project costs for the technical assistance and participant training components of about $3.992 million.

As noted earlier in this report, some difficulty arose during the life of the Project in keeping track of expenditures WVU-NCATSU had been authorized to incur by AID/T or AID/W in carrying out certain activities.

AID/T did not develop expenditure ratios in terms of total funding per student or cost per year of U.S. training as guidelines for the Project. Such ratios, had they been developed, would have helped highlight the rapid decreases in cost effectiveness resulting from shortfalls in student intake at the two MATIs and the magnitude of the loss suffered by the two MATIs from the shortfall in reaching planned degree holder status. They would still be useful in comparing the costs of this project with the costs of other means for achieving similar results and with the costs of other projects.

6. Constraints

AID/T faced two major constraints that affected its performance in dealing with this project. It had frequent turnover in its personnel, a problem which it is still experiencing to some degree. It also was critically short of transport to support the activities of its project officer(s).

7. Working relationships

As mentioned above, AID/T's working relationship with WVU-NCATSU was not good at times. AID/T's working relationship with MDD and MATI personnel also could have been improved. AID/T does not seem to have cultivated in-depth contacts with a wide range of MDD and MATI personnel during the first part of the Project; much

communication was through letters, etc., rather than personal contact.

8. Project termination plans

AID/T is beginning to plan for an effective wind down of the Project. Attention should be given to assuring that USAID inputs will be left in a context where they will be used and most likely to benefit MinAg, MDD and the two MATIs over a long period. Several recommendations along these lines are made elsewhere in this report.

9. Conclusions and Recommendations

a. Conclusions

- AID/T's performance in its various management and implementation roles barely was adequate, although it improved substantially in the last year of the Project. Project officers should have monitored the Project carefully enough to provide valuable and needed guidance to all action agencies; they should have supported the initial project design or altered it when implementation activities did not proceed as planned.

- In-depth involvement would have been required by senior AID/T officials at a fairly early stage to satisfactorily alter either the implementation plan or, in lieu thereof, the project design.

- AID/T project officer visits to the project sites were too infrequent and mostly nonsubstantive in nature.

- AID/T's lack of clarity as to what administrative and logistic support it would provide for the Project and its variable performance in providing such support reduced project progress.

- AID/T's rapid turnover of personnel and lack of transport for its staff during implementation constrained its effectiveness in supporting the Project.

- AID/T's funding of the Project has been satisfactory in all respects.

- AID/T's working relationships with WVU-NCATSU while not always satisfactory during implementation, have been good during the latter part of the Project; AID/T working relationships at all levels of the TanGov could have been improved.

- AID/T's plans for and monitoring of the wind-up phase of the Project are both satisfactory, although several actions must still be taken to obtain maximum results from the resources still available for use in the Project.

b. Recommendations

- AID/T project officers should accept more responsibility for continuous monitoring and review of like projects in terms of both design and implementation. Frequent project site visits for substantial reviews of project activities in light of the existing design and implementation plan should be conducted. In-depth involvement of senior AID/T officials in ad hoc project reviews should be available to project officers on an as needed basis; these officials should be on notice about potential major problems with projects at all times.

- AID/T should reach clear agreement with outside contractors as to what administrative and logistic support it will provide and then provide it, competently and cheerfully. Whatever necessary administrative and logistic support is not provided by AID/T should be included in full in the contractor's budget.

- AID/T constraints, reference: personnel turnover and transport, should be given priority attention in AID/W to improve overall Mission and specific project performance.

C. TanGov

1. Introduction

According to the PROP, the implementation and management of this Project was the primary responsibility of the MinAg, MDD. WVU-NCATSU personnel served as advisors to MDD or their respective MATIs and as individuals with specific tasks, guided by MDD and MATI administrators.

MDD (used throughout this section in lieu of MinAg and TanGov) and the two MATIs carried out their implementation and management roles satisfactorily in some areas, but unsatisfactorily in others. As noted throughout this section, the aspect of MDD performance that the evaluation team judged to be most unsatisfactory involved failure to manage and implement the Project according to the design and implementation plan as agreed to by all action agencies. There were obviously matters of judgement involved, however, with respect to all MDD management decisions that influenced project implementation; AID/T and WVU-NCATSU were involved in discussing and taking certain of these decisions, but not involved in others.

Given the circumstances as viewed by MDD, decisions made that affected, but did not support the interest of the Project, were more or less required by the larger problems the decisions were intended to effect. Thus, when total MATI student intake fell, the shortfall

was allocated fairly equally to all MATIs. When participant trainees returned, their premium skills were spread throughout the expanding MATI system to meet critical manpower shortages rather than clustered at MATIs Ukiriguru and Mpwapwa. The decision to undertake the library study was seen as a way to benefit MinAg and the entire agriculture sector. For the most part, that such decisions detrimentally affected the Project as originally conceived and agreed to, dissipated project inputs substantially more than planned or decreased project cost effectiveness were merely "considerations" in MDD's much larger decision matrix.

2. HQ leadership and back-up support

MDD headquarters is the hub of the MATI system; major decisions, and many minor ones, affecting the MATIs are taken by the MDD. In this sense, MDD leadership and actions were critical to project success.

MDD leadership in managing and implementing the Project was satisfactory in most respects. MDD did not give the proper priority to Project wellbeing in that it neither sustained the overall Project concept nor managed the inputs supplied by AID to achieve specific "Project" results. These aspects of management and implementation were relegated to the COP on a day to day basis while MDD carried out its basic policy and MATI system responsibilities -- overall curriculum development, personnel training and placement,

in-service training development, annual funding allocations and so forth.

In meeting these general responsibilities, the MDD did draw upon the COP for advice and as a source of funding and consultants for special studies as planned for in the Project. However, in most areas the MDD did not have control over COP performance--e.g., provision of a full complement of expatriate staff for the Project; provision of short term curriculum consultants, etc.

MDD leadership and support for the Project, then, was satisfactory in relation to its use and direction of project resources for general headquarters operations, even though the outputs desired were not achieved. For example, it did bring participant trainees into headquarters and assign them to challenging and relevant jobs that were of direct benefit to the MATI system and overall project purpose. It also requested a curriculum development study for use at headquarters level; it developed new diploma curricula for various MATIs and began the process of revising the Agro-Vet certificate syllabus.

MDD leadership for the Project at the MATI level was, however, unsatisfactory. It did not guide project implementation so as to build much stronger MATIs at Ukiriguru and Mpwapwa; intake of students at the two MATIs was inadequate to make full use of the technical

expatriate personnel posted there; participant trainees were not posted at the two MATIs in requisite numbers; the full complement of WVU-NCATSU staff was not insisted upon; WVU-NCATSU tutors were assigned such heavy teaching loads that they had little time for important institution building activities, and so on.

The primary result was to separate the three basic components of the Project instead of integrating them to build institutional capacity at the two MATIs. Equipment was supplied (and fairly well integrated into the MATI programs), expatriate tutors served primarily to help fill the void left when Tanzanian tutors went to U.S. universities, and the COP advised MDD on general MATI issues (most of which were relevant to, but not specifically concerned with, the two MATIs.)

MDD had little contact with or authority over WVU-NCATSU personnel at the two MATIs. Among other results, this made it difficult for MDD to deal with the problem of poor performance on the part of expatriate tutors when it arose.

3. MATI leadership and support

Administrators at MATIs Ukiriguru and Mpwapwa had substantial responsibility for providing day to day leadership and support to the Project, especially via their nominal control over the activities of WVU-NCATSU personnel stationed at the MATIs. While

they were able to be only partly effective in carrying out this role for numerous reasons, their performance was judged by the evaluation team to be satisfactory. Three points deserve particular mention.

First, the MATIs were deeply influenced by MDD decisions--recurrent funds made available, total tutors assigned, transport available, curricula assigned, etc. These decisions and many more were the province of MDD, but they curbed or made possible MATI support of the Project, depending on what decision MDD made.

Second, MATI administrators were generally uninformed about the total scope and intent of the Project. They saw it primarily as the provision of 1) equipment, 2) teachers and 3) opportunities for participant training; the linkages between these and the other project components were not clear to them. This lack of knowledge made it difficult to expect them to be fully supportive of the total Project.

Third, MATI administrators were not truly in control of the Project components at the MATIs. They made teaching assignments to expatriate staff with MDD guidance, but they did not evaluate their performance. Often they did not have a curriculum vitae on the WVU-NCATSU staff members, let alone a normal staff tutor file. They usually accepted responsibility for equipment they did not order, but they depended upon expatriate staff to integrate it into the program and to use it. They communicated with MDD, but WVU-NCATSU

personnel communicated with the COP; as a result the expatriate staff often knew more about activities relating to the Project than the MATI administrator did. This lack of communication, knowledge, and control made it difficult for MATI administrators to provide effective leadership and support.

4. Supply of staff

MDD's supply of staff in support of the Project at both headquarters and at the two MATIs was satisfactory in some respects, but MATI administrators were consistently assigned in support of the Project, some having been participant trainees under the Project. As already mentioned, headquarters staff assignments were adequate and of high quality. The number of tutors planned for at the two MATIs was not consistently supplied; at the time of this terminal evaluation, both MATIs were seriously understaffed in several areas. Also, few returning participant trainees were assigned to the two MATIs as tutors.

The Project did not call for counterparts to WVU-NCATSU personnel in a specific sense. None were assigned until late in the Project, and they had not taken up their positions actively at the time the evaluation team conducted its field interviews. Thus, while plans exist to relieve WVU-NCATSU tutors of at least some of their teaching responsibility during the last few months of the

Project, this must be achieved soon if any of their work is to be institutionalized in the form of widely applicable teaching materials, equipment maintenance schedules, etc.

5. Allocation of project resources

MDD allocated substantial project resources to some areas and very few to others. For reasons already mentioned, most WVU-NCATSU field staff were given heavy teaching loads. This helped meet the problem created by tutor shortages, but left little time for these staff members to do in-service training or create teaching materials. They were able, however, to do a great deal to improve the nature and content of "practicals" in certain areas at the two MATIs because of this heavy teaching involvement. The WVU-NCATSU staff who served as Deputy Principals of the two MATIs because of their administrative position were able to do more to influence the institutional capacities of the two MATIs. These positions were not filled during the second half of the Project, however, so that at least some of the progress initially achieved was lost.

Allocation of project resources at MDD headquarters was satisfactory. The COP did an exceptional job of advising on many issues of importance to the overall MATI system, some of which were relevant to the two MATIs. Several specific project concerns, however, such

as baseline data development, in-service training, and manpower performance measures were either abandoned or given insufficient priority in the allocation of the time and energy of the COP and MDD staff.

The resource allocation and the problems that did arise can be attributed to many factors. Of special significance, however, is that MDD at both headquarters and MATI levels tended to emphasize and evaluate project activities in terms of inputs rather than outputs. WVU-NCATSU were working very hard and overloaded with teaching; participant trainee selection and placement was elaborate and time consuming; equipment ordering and supply was fraught with problems and difficult of achievement; the curriculum development study required substantial time and effort by MDD headquarters staff. All these activities and many more taxed the time and resources of project participants and many examples of exceptional performance by each person involved in carrying them out can be cited. They are input activities, however, and allocation of resources to them vis-a-vis other activities should depend on the output achieved in light of the entire Project. A clear focus on all outputs being sought and achieved may have resulted in a different allocation of resources to various project activities.

6. Follow-up on identified problems

MDD follow-up on identified problems was barely satisfactory; it was clearly inadequate in some cases. Examples of lack of MDD follow-up from the mid-term project evaluation above include failure to:

- o develop and implement a high quality systemwide in-service program for new tutors without teaching experience;
- o expand MATI activities to give students more village level contact and feedback;
- o provide additional levels of recurrent budget support to the MATI system (especially MATIs Ukiriguru and Mpwapwa);
- o exercise more discretion in assignment of participant. trainees to U.S. universities to assure the best of training opportunities (together with WVU-NCATSU).

Other examples can be noted in examining annual evaluation reports and other documents.

There were undoubtedly many reasons why identified problems were not aggressively followed-up and solved by MDD. That an evaluation team suggests an action, for example, is not reason enough to carry it out blindly. MDD was unable, for the most part, to provide additional recurrent funds for the entire MATI system because it did not control the total budget it received from the MinAg. In other cases, however, such as the development of in-service training programs and increased student exposure to village agriculture,

the MDD could have taken action and did not. This lack of follow-up, whatever its justification, reduced overall project progress and effectiveness.

7. Procurement supply and repair

MDD's role in procurement, supply and repair was generally satisfactory given the recurrent funding constraints affecting the two MATIs during the Project. However, the lack of ability to provide consumables needed to utilize project-supplied equipment and to obtain spare parts and repair such equipment will be exacerbated at the two MATIs when WVU-NCATSU personnel depart. MDD and WVU-NCATSU should work together to resolve this problem before the Project ends on September 30, 1980.

8. Specific constraints

MDD project implementation activities were affected by several significant constraints. The most important were:

- lack of adequate recurrent funds from MinAg;
- absence of a substantial number of MATI personnel due to the Project participant training program and to other participant training programs as well;
- shortage of Form IV and other qualified students for MATI training;
- shortage of highly trained administrators and tutors for the expanded certificate curricula and the growing number of MATIs;

- inability of WVU-NCATSU to provide the agreed complement of expatriate staff at the two MATIs;

- inability to control or improve the linkages between MATI training, research and extension.

9. Working relationships

MDD working relationships with WVU-NCATSU and AID/T were fair to excellent.

10. Conclusions and recommendations

a. Conclusions

- MDD management and implementation of the Project was satisfactory in some areas, but unsatisfactory in others. Its major failure was that it managed project inputs to contribute to overall MDD needs rather than to the specific outputs intended by the project design.

- MDD leadership and support of the Project at the headquarters level was adequate; it drew upon the COP for advice and assistance and otherwise attempted to make progress in most areas included within the project design.

- MDD leadership and support for the Project at the two MATIs was unsatisfactory, primarily because it did not utilize project inputs to strengthen Ukiriguru and Mpwapwa to the greatest degree possible or to institutionalize the impact of benefits these two MATIs did receive during the life of the Project.

- MATI leadership and support for the Project was generally satisfactory within the constraints affecting the performance of MATI administrators.

- MDD supply of staff in support of the Project at headquarters and the two MATIs was satisfactory in some, but not all, respects. Remaining WVU-NCATSU staff at the MATIs have still not been relieved of their heavy teaching loads, and the degree of progress that can be made in institutionalizing the benefits of the Project continues to wane as a result.

- MDD allocated too many project resources to some activities and not enough to others, resulting in less total project achievement than planned. Some project resources were allocated to activities that were of marginal benefit to the Project as designed--e.g., the library study--although these activities could be seen to be relevant to agricultural manpower development in a much larger context.

- MDD follow-up on identified problems during project implementation was barely satisfactory. Project progress in many areas suffered as a result.

- MDD procurement, supply and repair activities related to project equipment was generally satisfactory, but continues to be constrained by lack of recurrent funds. Unless solved, this constraint will greatly diminish the on-going usefulness of project supplied equipment.

- MDD management and implementation of the Project was affected by numerous constraints, especially lack of recurrent funds.

- MDD working relationships with WVU-NCATSU and USAID were fair to excellent.

b. <u>Recommendations</u>

- Future training projects should be managed and implemented by the TanGov as "projects;" project inputs should not be allocated to meet the broader needs of the agency involved unless all parties to the Project agree ahead of time.

- In similar projects, allocation of project inputs and outputs should be agreed to ahead of time by all parties as part of a detailed implementation plan and monitored carefully by all action agencies, especially AID/T.

- AID/T should assure that the resources to be supplied and actions to be taken on behalf of a project by the TanGov are forthcoming; or, in the alternative, that specific reasons for their absence are specified and alternative resources and actions to offset an impact on the project are agreed to and undertaken.

- In future similar projects, TanGov actions necessary to assure project success--e.g., in this case student intake at the two MATIs--should be specified in ProAgs, rather than merely implied.

- AID/T, WVU-NCATSU and MDD at the highest levels should agree to specific actions (and a timetable for such actions) necessary to maximize the impact of the resources still available to the Project between now and September 30, 1980.

VIII. UNPLANNED CAUSES AND EFFECTS OF PROJECT

Throughout the life of this project unexpected, unplanned factors have produced important changes in its scope, direction, effectiveness and perceived purpose. These unplanned causes and effects have been discussed in appropriate chapters of this report. They are grouped here and summarized for easier reference.

A. Unplanned Causes

1. Failure to understand and work toward the Project's goal

Because of initial unclear documentation, later revisions and add-on activities, the Project was never completely clear about its central meaning. Faulty project design and loose planning at the start of the Project and at various times as it was modified resulted in a project with no central focus, no clear-cut objective, for which the substantial inputs provided were to be the means for achievement. The Agricultural Manpower Development Project concentrated on the means--the sheer administration of its complex parts (made even more difficult by poor support for the COP)--rather than the end; achievement in terms of a greatly improved, functioning training capability at MATI's Mpwapwa and Ukiriguru, and to a much lesser extent throughout the entire MATI system.

2. Uncoordinated and poor management

As planned, this project was to be guided by MDD, AID/T, WVU-NCATSU personnel in the U.S. and the COP in Dar es Salaam. These agencies did not function together effectively to provide the quality of management needed for project success. In the first place this leadership group failed to grasp, or at least agree on and articulate the basic objectives of the Project, except in general terms or by reference to the logfram which did not clearly spell out the objectives. As managers this group failed to recognize that the project goals and purposes were in need of tightening and revision Project management satisfied itself that to implement, to send people for training, order up supplies and do all the other hundreds of things needing to be done, was in itself good management. Even in this strictly administrative management sense, the various parties failed to coordinate their contributions adequately. Eventually, in certain cases, distrust and hostility developed. This was not the kind of management needed for such a large, complex project.

3. Overloading of teaching and administrative duties and limited institutional development of MATIs

One unplanned cause of this project was to overload the U.S. technicians with administrative (the COP especially) and teaching duties. These excessive demands on their time and energies were a major reason the planned institution building activities were slighted.

4. Insufficient students assigned to MATIs Mpwapwa and Ukiriguru

Here the MDD failed to take necessary action to have a sufficient number of students assigned to the two Project-supported MATIs. The number was insufficient in view of the Project's planned targets and the substantial project assistance being concentrated at these two MATIs.

5. Assignment of manpower trained by the Project

The MDD (and WVU-NCATSU and AID/T in their failure to influence the MDD) failed to see the link between Project-trained participants and the need to assign a suitable number of these trainees to the two Project-supported MATIs if, by the end of the Project, institutional capability was to be developed.

6. Slow assignment of expatriate staff

The contractor failed to fill vacancies rapidly which resulted in positions at the MATIs remaining unfilled for long periods of time; reduced project achievement was the result.

7. Insufficient recurring funds

The TanGov failed (to some extent because of the Uganda-Tanzania war) to produce the levels of recurrent budget funding needed for adequate support and operations at the two project-supported MATIs. The lack of funds severely restricted project activities.

8. Use of project resources for purposes not directly related to project targets

There was a continuous attempt by WVU-NCATSU (and frequent approval by AID) to use project funds and personnel (particularly the COP) to conduct or monitor studies, etc. which in some cases led to new projects. The evaluation team judges the effect of this unplanned cause to be a reduction in the achievement levels of the Project.

9. Lack of Tanzanian counterpart personnel

Insufficient qualified local staff to adequately serve as counterparts to the Project U.S. technicians resulted in diminished achievement, particularly in terms of development of viable institutions at MATIs Mpwapwa and Ukiriguru.

10. Lack of suitable linkages between research and training

Because of very weak connections between research institutions and the MATIs, training provided to MATI diploma and certificate students often lacked current, locally adapted technological content. The weakness of the research stations in developing such technology, even if the linkages did exist, was a further unplanned cause which resulted in diminished quality of the training provided at the MATIs.

11. Lack of strong linkages between training and extension

Only weak links exist between the training institutions and the extension service which is the employer of the bulk of the certificate students graduated. Students at the MATIs, therefore, are trained without benefit of feedback or a systematic way to evaluate and design the specific, practical course material to teach the skills they will need on the job.

12. Lack of technological and other support system

Training at the MATIs is done in a vacuum; that is, even if done well, the training itself can have only limited direct impact on rural development because of the serious lack of technological, transportation, input supplying, marketing and other systems. These unplanned causes directly affected project achievement.

13. Changed TanGov priorities and policies

Significant changes in policies relating to the number and types of village extension workers needed, as a result of the nation's decentralization process, affected the Project. The MATI system's accommodation to these new policies had to be worked out. Appropriate new curricula and teaching materials were needed and methods had to be developed to train the masses of village extension workers (the Bwana Shambas) called for by the new policies. These

changes caused a slow down in the Project-supported activities to improve the quality of institution at MATIs Mpwapwa and Ukiriguru.

B. Unplanned Effects

1. Creation of spin-off projects and activities

The Agricultural Manpower Development Project was used as a vehicle for certain studies and reports which in some cases led to development of discrete, new projects. Studies and surveys were conducted on curriculum development, agricultural library services, national agricultural manpower requirements, agricultural education at the Faculty of Agriculture and Forestry, and farmer training activities at the MATIs. The latter two studies resulted in two separate AID/T projects.

2. Tension over commodities use, transport, etc.

Tension developed because of the project-supplied vehicles (for use of the expatriate staff only) at the MATIs. The shipment of project commodities directly to U.S. technicians at the MATIs caused further strains on the working and perhaps personal relationships at that level.

3. Unrelatedness of training to students' job assignment

In some cases participant trainees received special technical training which did not make them better fitted for

administrative posts to which they were assigned. Also, students doing the certificate course at the MATIs may in fact, have been educated away from the village-centered responsibilities they will have as extension workers.

4. General, basket participant training

Although a portion of the participant training component of this project was designed to provide U.S. trained specialists for the MinAg and parastatal agencies, the majority of trainees were expected (planned) to return to the MATI system and particularly to the two project MATIs. For various reasons this did not occur and, at least to a larger extent than planned, the effect has been a more generalized, unplanned basket participant training program.

5. Excess equipment and supplies

Excess, and in some cases unsuitable, equipment and supplies were provided by the Project to MATIs Mpwapwa and Ukiriguru. This resulted from unclear budget allocation procedures which forced hurried last minute purchases or (as in the case of unsuitable equipment such as the rotary mowers) poor management and control during the identification and ordering of particular commodity items.

IX. THE PROJECT AND WOMEN

A. Discussion

In Tanzania women do much if not most of the work on the small, subsistence farms. This situation has been exacerbated by the move away from subsistence agriculture toward wage earning employment by men. In traditional Tanzanian society women are relegated to positions clearly inferior in status to men. This expresses itself in social, economic and political inequality, particularly in rural areas.[1]

The Reynolds report indicates that in spite of deeply ingrained attitudes about the status of women in society, the official TanGov policy is equality of opportunity between the sexes. While the legal constraints are removed, the move toward truly equal opportunities for women will be slow, particularly among the extremely traditional, rural population.

In terms of the Agricultural Manpower Development Project, no particular discrimination is evident. At the MDD, three of the

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[1] Based on D.R. Reynolds, "An Appraisal of Rural Women in Tanzania," REDSO/EA, December 1975; included in the 1973 PROP as an Annex.

17 professional staff are women and all indications are that this number will increase when suitably qualified graduates are available. At the MATI level, MATI Mpwapwa can be taken as a more or less typical example of the numbers of women students being enrolled in the MATI courses. Here out of a total of approximately 127 students in the current certificate program, 21 are women. In the diploma course, there are 5 women in a class of 33 (See Annex 31 for female enrollment figures at all MATIs).

An important consideration in evaluating numbers of females enrolled in the MATI system is that women coming out of Form IV less frequently list agriculture as their first choice for career purposes than do men. In Tanzania it is traditional for women to go into fields such as health or education rather than agriculture. This cultural attitude serves as a screening of students by sex at the start of their professional lives.

There is some feeling, at least on the part of certain extension officers, that women should not be assigned to villages as extension workers (Bwana Shambas). At the current intake levels of females into the certificate programs, however, this is not considered a problem since other employment opportunities are available for women graduates. Women diploma graduates are more acceptable within the extension system, perhaps because such students enter the service

at a higher, specialist level where technical competence evidently overcomes traditional conservatism.

Out of a total of 61 participant trainees sent for U.S. studies under this program, 8 are women. While no particular effort was made to consider females for training, there was no evident move to prevent qualified, interested women from entering the program.

B. Conclusions and Recommendations

1. Conclusions

The Agricultural Manpower Project has neither discriminated against nor greatly encouraged female participation. Tanzanian cultural patterns and stated government policies are slowly balancing out to provide increased professional status for qualified women. This project, operated within this context, was neither overly conservative nor decidedly innovative in its support for women. Because of long-standing cultural patterns, women by and large have not shown a strong preference for agriculture related professions.

2. Recommendations

Projects of this type should actively support the aspirations of women and should, wherever possible, establish annually increasing targets for women students, tutors and administrators.

X. RECOMMENDATIONS FOR FUTURE AID-FINANCED IN-COUNTRY TRAINING PROJECTS

Many of the recommendations included in the previous chapters of this report have direct application to future projects. Here the Devres evaluation team feels it is only necessary to add some general, narrative comments that might be useful to future training project designers and managers.

The Devres impression of the MATI training effort is that it is distinctly designed for long-term results. It is thorough, but it is also cumbersome and nonspecific; in particular, it is not highly focused on immediate problems and solutions that will affect food self sufficiency and other goals. This does not imply that MATI training efforts are unproductive. Over time, they will provide a general cadre of persons well grounded in agricultural fundamentals. To make that grounding effective in solving Tanzania's food and related problems, however, will take years and will be very expensive.

The MATI effort could, and Devres believes it should, be supplemented with several other approaches directed at making an <u>immediate</u> impact on Tanzania's most pressing agricultural problems at the village level.

Two AID/T efforts already point the way. The farming systems concept (and derivatives) is essential in order to determine exactly how to remove critical constraints to increased agricultural output and related rural income problems. Research, training and activities in rural villages must be linked closely, as is indicated at several points in this evaluation report. People working to improve village agriculture must have answers, and their answers must show immediate positive results when applied. The Training for Rural Development Project is another solid effort in the right direction. Approaches to village people must fully account for the attitudes, values and pressing concerns of villagers. And village people must eventually come to be in charge of their own development process if it is to be a sustaining one.

Other approaches and ideas are noted in the remainder of this chapter. The first, which is considered briefly below, picks up on the already well established Bwana Shamba idea and indicates some ways it could be made more effective via training. A series of brief suggestions are then included to indicate other ideas for future AID-financed training projects in Tanzania.

The TanGov has launched a massive effort to provide a trained extension worker (Bwana Shamba) at the village level throughout the country. This policy decision recognizes the vital need to

create in the villages a corps of qualified "change agents" who will be directly involved in identifying the needs of the villagers and who, because of their training, can help the rural people to meet these needs. This, then, is one of the final links in the government's chain of assistance for increasing the productivity and the living standards of the millions of small farmers in Tanzania. Obviously, this village extension worker has a key role to play in national development.

The challenge is to give this village extension worker the right kind of training and the necessary support to function effectively. Such a person does not have to be sophisticated or know from books (or even practical experience) all the latest bits and pieces of modern agricultural technology. To be effective, he (since most will be men) does not even need to know too much about many different farm subjects. All he really needs to know are the basic elements of crop and livestock production — these he needs to master completely from practical, in-the-field experience. If this extension worker can immediately and consistently be productive in the field he will readily gain the respect of the people he works with, and he will, because of his confidence in his existing practical knowledge, be motivated to increase his skills and competencies. If properly rewarded and supported, this kind of extension worker is "worth his salt."

The first consideration in developing this kind of extension workers is his/her selection. The potential trainee should be sufficiently alert to be able to absorb the minimum theory to be taught. He should be practical and have some leadership potential. Trainees for such a program should not be discriminated against on the basis of age or sex (although in the Tanzanian cultural context, men are preferred for these positions). The prime selection factor for students to enter a training program for village extension workers should be their desire to work at the village level. For this reason they will probably not be the very brightest, most highly motivated students since these will be mainly interested in upward mobility professions requiring academic studies.

Given adequate selection, what kind of training is needed? In a word, practical. The entire focus of the training should be on the basic, practical elements of crop and livestock production. Take maize, for example. Students should be thoroughly capable of doing (and understanding) every cultural operation. They should learn by actually doing everything from land preparation using traditional methods, proper planting of correct plant populations, hand methods of weed control, insect control and methods to reduce bird damage, fertilization practices using local organic materials where possible and better harvesting and crop storage methods. Because of the high costs of fertilizers and pesticides, students

should be taught the benefits of green manuring, intercropping with legumes, crop rotations, and farm waste composting. No more than 10-15% of their time should be spent in classroom discussions of some of the theory behind the practices taught.

This, then, could be the model of the type of training to be given to a village extension worker. Development of the in-the-field capabilities for just a few of the major crops, coupled with some basic livestock management practices (feeding, using local foodstuffs; breeding; health) could be possible in a six-month's course designed to coincide with the rainy season.

The center where the training is conducted should focus on the practical and not attempt to develop an academic look or atmosphere. Simple, clean classrooms, dormitories and recreation areas will be needed; but workshops, storerooms and the fields themselves will be of greatest importance. One absolutely essential element will be the school farm, where students under the guidance of experienced practical crop and livestock production tutors and a first class farm manager, will learn basic agriculture.

Shortage of time prevents a more detailed description of this proposed approach for training village extension workers. (See page 68 of this report for additional details.) Further analyses could provide suggestions for initiation of this kind of practical

training, at least at one center on a pilot model basis. More discussion is needed of technology packages suitable for the training courses, linkages to on-going agricultural research, possible expatriate and local staff requirements, follow-up and support for graduates of such a training program, (including refresher short courses), village extension workers' handbooks, the teaching of basic extension techniques, community crop and livestock production campaigns, etc. Several of the more general ideas that follow relate to these important areas.

- Training in Tanzania should concentrate directly on providing skills needed to solve critical agricultural, health, housing, and related needs in villages, towns and cities. In each specific area of concern the real problems must be identified and solutions that work under field conditions must be formulated. These problems and their solutions must be the central core of the training effort.

- Much of the training in Tanzania should be simplified to concentrate on solving central problems, whether in agriculture, health or other areas. The comments above regarding Bwana Shamba training serve as an example. Short, explicit skill and knowledge training that produces results in the field should be emphasized.

- Programs should concentrate on institutional improvement as well as training; they should identify central needs and build both individual <u>and</u> institutional capability to resolve them.

- Training in Tanzania should concentrate mostly on producing very short term pay-offs visible both to the person trained and to those he serves. As soon as information and skills are attained, they should be put to work producing such pay-offs.

- Every training project should include substantial resources for careful monitoring, evaluation, feedback and adjustment according to the results. If substantial results are not achieved on the ground the project should be altered or terminated.

- Training for rural development and similar areas must be designed to account for the upward mobility aspirations of those being trained. To be certain that those trained are used to further project purposes one can train more than the actual number needed by the project, and take special care in the selection of trainees or be certain that the career resulting from the training meets both project needs and an individual's desire for personal advancement.

- Training for rural development should reach established change agents in village and other relevant areas, as well as younger persons who have not yet attained such status.

- Training <u>must</u> be backed up with an integrated resource package that makes its use productive in the milieu where trainees must work when their learning is over. If this is not possible, the training should be made commensurate with the degree of support that can be guaranteed.

- Training for agriculture and rural development should involve numerous <u>small</u> efforts of a pilot nature designed to reduce specific constraints. These should be innovative, flexible, simple and fully supported; their impact on the problems being dealt with should be carefully measured and anything that does not work should be abandoned ruthlessly. Those efforts that do meet critical needs under field conditions should be further tested and pursued. Key ideas for such projects should be garnered globally, perhaps by sending trained Tanzanians to observe projects in other countries -- International Rice Research Institute, Sarvodya Movement, Turkish Development Foundation, etc.

- Implementation of training projects should be based on <u>individuals</u> rather than contractors. A new type of

AID/W contract that allowed the selection of a contractor (with or without competition) after which AID/T and the contractor could work together to select persons to participate in the project, would pay great dividends. It would allow AID/T to select innovative and capable contractors and to bring a wide array of good people together under one umbrella to meet specific training requirements.

ANNEX 1

Terms of Reference for Terminal Evaluation of Agricultural Manpower Development Project

Background

The Tanzania - Agricultural Manpower Project began in 1974 with the objectives of assisting the Tanzanian Government (TanGov) to strenthen the institutional training capability of the Ministry of Agriculture Training Institute (MATIs) and expanding Tanzania's supply of trained agricultural manpower. Activities were concentrated at three sites: MATI Mpwapwa, MATI Ukiriguru, and the Division of Manpower Development (DMD) of the Ministry of Agriculture which administers the MATI system. Activities included long term participant training, technical assistance, and the provision of vehicles, equipment, and teaching aids. Also, an agricultural manpower study was completed in January, 1980 to estimate agriculture sector manpower needs to 1986. The project is scheduled to terminate September 30, 1980. In compliance with the project paper a final evaluation on project impact is scheduled for April, 1980.

Background materials for the project include: Prop, Prop Amendment, and other relevant design documentation; the Project Appraisal Report (1975-1977); the April, 1978 mid-project external evaluation entitled "Evaluation of Tanzania Agricultural Manpower Project;" the August, 1979 Project Evaluation Summary; the contract between AID and the implementation contractor, West Virginia University, contract amendments, and contractor progress reports between 1975 and 1978; the Agricultural Manpower Survey of March, 1980; and, the Project Paper for Tanzania project, 621-0149, "Training for Rural Development."

A final external evaluation of the project is now necessary.

I. Title

Tanzania - Agricultural Manpower Project - 621-0119.

II. Objectives

The Contractor shall provide technical assistance to USAID/Tanzania for a terminal evaluation of the Agricultural Manpower Project, 621-0119, and prepare a final report setting forth its finding and reasons therefor.

III. Statement of Work

The Contractor shall serve as a technical resource to USAID/Tanzania in conducting a terminal 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 objectives and outputs the Contractor shall establish:

1. project objectives and verifiable indicators as stated in the 1976 revised project paper and log frame;

2. actual project outputs; and,

3. degree to which actual outputs compare with objectives and indicators.

B. C ncerning participant training the Contractor shall:

1. interview returned participants and/or knowledgeable Tan/ Gov staff concerning the adequacy of the training received at North Carolina Agricultural and Technical University (NCA & TU) and West Virginia University (WVU);

2. establish the extent to which returned participants are functioning in positions related to their area of training;

3. establish the extent to which returned participants are functioning in positions within the MATI system; and,

4. establish the extent to which returned participants are functioning in positions at MATIs Ukiriguru and Mpwapwa.

C. Concerning MATIs Mpwapwa and Ukiriguru the Contractor shall meet with principals, staff, U.S. technicians, returned participants, and students to establish:

1. description of the MATI system, coursework, student admissions, job placement, and related matters;

2. past and current problems in staffing and equipment maintenance and operation;

3. extent to which the MATIs both did benefit and did not benefit from project inputs; and,

4. complaints and comments about specific project elements such as contract team performance, supplies of commodities, DMD support and related matters.

D. Concerning commodities the Contractor shall list items purchased with contract funds, their current locations, condition, and use. The list will include, but not be limited tc, the following specific information:

1. Name of item (and model number where applicable);

2. project site where item is located;

3. total number of an item at a particular site;

4. indication that item is or is not in use and the reason unused items are unused; and

5. general condition of each item.

E. Concerning implementation-Contractor supplied technical assistance-the evaluation Contractor shall:

1. meet with all U.S. field technicians and the chief of Party (COP);

2. investigate field technicians' opinions concerning performance of WVU/NCA & TU backstopping and of USAID project implementation support;

3. investigate field technicians' opinions concerning the MATI system and its problems;

4. investigate field technicians' opinions concerning degree to which they both have and have not contributed to strengthening the MATI training capability, and the reasons for these opinions;

5. establish reasons for the failure to initiate the collection of baseline data regarding MATI training programs as prescribed in the project paper;

6. solicit field technicians' recommendations for future AID-financed in-country training projects;

7. establish the effectiveness with which individual team members have performed their respective job functions;

8. list field technicians who have worked on project sites and the length of their service at any given site; and,

9. establish the extent to which positions specified in the contract were not filled.

F. Concerning the Division of Manpower Development (DMD), Ministry of Agriculture, the Contractor shall meet with the Director of the Division and his staff to establish:

1. the functions and responsibilities of the DMD, and its role vis-a-vis the project;

2. reasons for the failure to initiate an in-service training program for Ministry of Agriculture staff, as directed in the project paper;

3. DMD opinions concerning the project, including, but not limited to: the degree to which the project both has and has not contributed to the MATI system; the performance of U.S. technical personnel; the performance of USAID; the performance of the MATIs from the DMD perspective; and, recommendations for future AID-financed in-country training projects;

4. the current status of the curriculum development unit of the DMD, and the current status and future plans for curriculum development; and

5. TanGov constraints that impeded implementation and achievement of objectives.

G. Concerning the Agriculture Manpower Study the Contractor shall examine closely data analysis, discussions, and conclusions of the study and establish:

1. the extent to which the study is a sufficiently complete assessment of agriculture sector training needs; and

2. implications for Phase II of the Training for Rural Development Project (Phase I is Tanzania project 621-0149).

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

1. write a thorough analysis of its findings concerning all the above set forth project components; and

2. based on this analysis write conclusive responses to the following questions:

a. why was no effort made to fully initiate implementation of certain project objectives?, and

b. of those objectives which were implemented, what have been the problems that have impeded implementation of those objectives?;

c. what have been the impact and efforts, both planned and unplanned, of this project?;

d. how effectively have USAID, DMD, and the contractor fulfilled their respective implementation responsibilities?; and,

e. based on the above analysis and contractor-derived implications of the manpower study, what recommendations can the team make for Phase II of the Training for Rural Development Project and its project paper?

IV. Reports

1. Four days prior to departure from Dar es Salaam the technicians shall submit to USAID/Tanzania a draft of the evaluation report for Mission review. If the Mission so requests, the technicians shall revise the draft. They will leave one copy of the final draft report with the Mission and within three weeks from their departure from Dar es Salaam, they will submit two copies of the report to AFR/DR/EAP for final reproduction and distribution.

2. One copy of the final report shall be furnished to Mr. Maury Brown, DS/DIU, Room 509B, SA-14, Agency for International Development, Washington, D. C. 20523.

V. Relationships and Responsibilities

The Contractor's designees are responsible to the USAID/Tanzania Mission Director, or his designee, for reporting. The AID/W liaison officials are AFR/DR/EAP, J. Wolff, and AFR/EA, B. Kline.

VI. Term of Performance

The desired starting date is April 7, 1980 and the estimated completion date is May 8, 1980.

VII. Duty Post

The Contractor's technicians shall work primarily in Dar es Salaam, Tanzania.

VIII. Access to Classified Information

No access to classified information will be required by Contractor's technicians.

IX. Work Week

A six-day work week is authorized without premium pay.

X. Logistic Support

While in Tanzania, the Contractor shall be responsible for typing and any necessary reproduction of the draft copies of the final report. The Mission can provide office space, equipment, and transportation only on a limited, irregular basis.

ANNEX 2

Itinerary of Devres Evaluation Team

April, 1980

9th	Team obtained information on Project from AID/W and begin review and analysis in Devres Offices, Washington, D.C.
10th	Continued review of Project materials
11th	Team met at Devres for final briefing and travel arrangements.
13th	Team departed for Tanzania
15th	Team arrived Dar es Salaam
16th	Met with USAID Director, Deputy Director, Agricultural Development Officer, Evaluation Officer, Project Officer at USAID.
17th	Met and interviewed Project Chief of Party. Chief Training Officer, Agricultural Curriculum Supervisor at DMD.
18th	At hotel, read background reports,documents.
19th	Traveled by car to MATI Mpwapwa
20th	Met with Project Technicians stationed at MATI Mpwapwa
21st	Met with Principal, staff Academic Committee,returned participants, diploma students, visited practical classes, and toured facilities at MATI Mpwapwa.
22nd	Traveled by car to MATI Ilonga. Met with Principal and selected staff. Remained overnight at Mikumi.
23rd	Traveled by car to Dar es Salaam
24th	Traveled by plane to Mwanza, then to MATI Ukiriguru; met with Principal, Coordinator of Studies and Project Technicians.

25th	Continued meetings and discussions with Principal, Coordinator of Studies, Senior Staff, Tutors, former students, Diploma Students and Project Technicians at MATI Ukiriguru; visited classes, labs and toured facilities.
26th	Continued meetings at MATI Ukiriguru. Returned to Dar es Salaam by plane.
27th	Began drafting report
28th	Met with Mission Director, ADO, Project Officer, design officer and evaluation officer at AID/T; continued drafting report.
29th	Met with DMD, COP at MinAg; continued drafting report.
30th	Met with CTO, CPO, COP at Min Ag; continued drafting report.

<u>May, 1980</u>

1-4	Continued drafting report in Dar es Salaam
5th	Met with Project Officer; continued drafting report.
6-7th	Continued drafting report; turned in working version to AID/T for review.
8th	Met with MinAg officials for oral debriefing
9th	Met with AID/T officials for oral debriefing
10th	Completed final draft of report
11th	Team departed Tanzania
13-30th	Team and Devres staff prepared final report at Devres in Washington, D.C.

ANNEX 3

List of People Met in Tanzania

J. Bukuku, Lab Technician, Animal Science Department
MATI Mpwapwa

D.J. Dadi, Diploma Student, MATI Mpwapwa

Rose Marie Depp, Project Design Officer, AID/T

Maurice Fennell, Tutor, Soil Science/Land Use, MATI Ukiriguru
(WVU-NCATSU)

Michael Fushs-Carsch, Agricultural Development Officer, AID/T

Thomas Galvin, (and wife, Hazel) Tutor, MATI Mpwapwa
(WVU-NCATSU)

Robert Gilson, Evaluation Officer, AID/T

Richard Gray (and Wife, Marsha) Tutor, MATI Mpwapwa
(Wvu-NCATSU)

J.R. Guku, Diploma Student, MATI Mpwapwa

Mr. Hiza, Laboratory Technician, MATI Ilonga

A.P. Ilole, Head, Extension Department, MATI Mpwapwa

T.S. Itegereize, Principal, MATI Kasulu

A.S. Kabatange, Coordinator of Studies, MATI Mpwapwa

J.K. Kabyemera, Diploma Student, MATI Ukiriguru

P.N. Kasase, Diploma Student, MATI Mpwapwa

L.K. Kashasha, Curriculum Development Officer, MATI Ilonga

I. Kaswa, Storekeeper, MATI Ukiriguru

M.A. Kasyeta, Tutor, Agronomy, MATI Mpwapwa

Peter Katyega, Director, Lievstock Research Institute, Mpwapwa

E.H. Kipende, Head, Crop Science Department, MATI Ukiriguru

Michael Kizer (and Wife Cheryl, Sons Matthew and Eric), Tutor, MATI Ukiriguru (WVU-NCATSU)

Marion Kohashi, Project Officer, AID/T

George Lulandala, Curriculum Supervisor, MDD

S.G. Lyimo, Diploma Student, MATI Ukiriguru

M.J. Maggena, Tutor, Crop Science, MATI Ukiriguru

B.N. Makwaia, Tutor, Agro-Mechanics, MATI Nyegezi

John Mann (and Wife Kathy) Tutor, Crop Production, MATI Ukiriguru (WVU - NCATSU)

J. Marandu, Head, Economics and Extension Department, MATI Ukiriguru

J. Z. Masaoe, Diploma Student, MATI Ukiriguru

G. M. Masigara, Tutor, Crop Science, MATI Ukiriguru

A. Massawe, Diploma Student, MATI Mpwapwa

Mrs. N.A. Masumba, Head Crop Science Department, MATI Mpwapwa

H.D. Mbota, Head, Human Nutrition Department, MATI Mpwapwa

G. B. Mbusule, Acting Principal, MATI Ukiriguru

O.S. Mbuya, Diploma Student, MATI Ukiriguru

Mr. Mchechu, DMD

Mr. Mende, Chief Planning Officer, MDD

T.B. Mnyema, Tutor, Land Use, MATI Ukiriguru

B.P. Mpinga, Storekeeper, MATI Mpwapwa

A. Mshana, Head, Agro-Mech Department, MATI Mpwapwa

M.B. Mwakangwale, Diploma Student, MATI Ukiriguru

R. Mwonga, Diploma Student, MATI Mpwapwa

L.J. Mzeru, Head, Farm Economics Department, MATI Mpwapwa

M.Z. Nagana, Diploma Student, MATI Mpwapwa

H.A. Ndunguru, Tutor, animal Science, MATI Ilonga

J.B. Ndunguru, Principal, MATI Mpwapwa

E.M. Ngaiza, Acting Deputy Principal, MATI Ukiriguru

E.S. Ngulwi, Diploma Student, MATI Mpwapwa

C. Nzanga, Diploma Student, MATI Mpwapwa

Lloyd Pickett, COP, WVU-NCATSU

Barry Riley, Deputy Director, AID/T

W. P. Rwamugira, Research Assistant, Crop Research Center Ukiriguru

R.N. Rwasa, Chief Training Officer, MDD

A.H. Senyagwa, Principal, MATI Ilonga

M.E. Shayo, Head, Animal Science Department, MATI Mpwapwa

C.V. Shembilu, Diploma Student, MATI Mpwapwa

Howard L. Steverson, Director, AID/T

W. Uiso, Tutor, Range Management, MATI Mpwapwa

E. Vanga, Diploma Student, MATI Mpwapwa

E. Wakuganda, Head, Land Use Department, MATI Mpwapwa

Christopher Majija, Librarian, MATI Mpwapwa

W. Witsenburg, Tutor, Food Science and Technology, MATI Ilonga

ANNEX

1973 PROP LOGFRAME

Project Title & Number: Agricultural Human Development, 621-11-190.119

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Program or Sector Goal: The broad objective to which this project contributes:	Measures of goal achievement		Assumptions for achieving goal targets.
Assist the Government of Tanzania (GOT) achieve its objectives of increased net foreign exchange from food crops and livestock by farmers and herders.	1. Imports of food crops and livestock products are reduced. 2. Production of food crops, livestock and livestock products are increased. 3. Household, processed food crops and livestock products are available in additional supply and properly gathered and distributed to meet national demand.	1. Tanzania agricultural statistics 2. Various and international foreign trade statistics 3. Survey statistics of sales of major food and livestock products by concerned parastatals. 4. Survey data bases on purchases of major food crops, livestock, and livestock products by concerned parastatals.	The Tanzania economy is conducive to support the food crop/livestock subsectors. Essential financial, manpower and policy issues will be resolved by the Tanzania GOT to provide a reasonable environment for increased productivity of food crops and livestock by Tanzanian producers.

(Note: This project will have a [illegible] and [illegible] goal, linked monetarily with [illegible] for the agricultural sector.)

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PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK (PURPOSE)

Project Title & Number: Agricultural Manpower Development, 621-11-190-119

Project Purpose	Conditions That Will Indicate Purpose Has Been Achieved (End of Project Status)	Means of Verification	Important Assumptions
1. To assist the Tanzov in the overall development of its entire sub-professional and professional agricultural training programs/activities.	1(a) The Tanzov has established a professional career system for the administrative and technical staffs of the NATI systems. (b) Regular in-service training program underway. (c) The Tanzov will have favorably responded to the recommendations of the AID funded Requirements Analysis on University level training for training of agricultural teachers.	1(a-b) Records of the NATI's MinAg records. Professional evaluations of: (1) Teaching/training; (2) Performance of NATI graduates; (3) MinAg food crops/livestock production programs. (c) The University has developed improved training for students graduating as agricultural teachers as professionally evaluated.	
2. To assist the MinAg strengthen two existing (Ukiriguru and Mpwapwa) diploma/certificate institutions by developing practical, applied and operational training capability focusing on junior and intermediate level staff who are expected, over time, to provide manpower/technical and management skills for the Tanzov food crop and livestock production programs/projects and operations.	2. The two existing institutes will have: (a) New and improved curricula in use. (b) Approximately 2/3's of the teaching positions filled with B.S. degree holding (or higher) personnel. (c) Adequate laboratory and field space provided for student needs. (d) Proper balance achieved between classroom, laboratory and field teaching. (e) In-service technical and administrative training courses being used to provide MinAg staff with specific skills. (f) Annual budgets adequate to support/maintain facilities.	2(a-f) See above.	Budget support for capital and recurrent costs will be provided per PROP Section, Tanzov Contributions. Tanzov production programs/projects will utilize project trained manpower. The Tanzov will effectively coordinate inputs.

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PROJECT DESIGN SUMMARY - LOGICAL FRAMEWORK (PURPOSE) - continued

Project Purpose	Conditions That Will Indicate Purpose Has Been Achieved (End of Project Status)	Means of Verification	Important Assumptions
3. To provide participant training assistance to the Tadjoy in selected areas of agricultural manpower training to meet needs of the MinAg and parastatals for management and technical skills in positions closely related to and involved in food crop or livestock production.	3(a) Key MinAg and parastatal agencies have better qualified administrative, management and technical staff. Fewer senior positions are vacant or filled by expatriates. Planning, management and operations of crop production and livestock projects are improved.	3(a) MinAg and parastatal records. Professional evaluations of crop/livestock production programs/projects.	

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Project Title & Number: Agricultural Manpower Develop

Narrative Summary	Objectively Veri			ations
Outputs:	Magnitudes of Ou			
1. Manpower				
(a) Trained Students (annual output)				aors will con- their efforts.
	1(a) Ukiriguru			
	HATI			recurrent bud- provided by the
	Certificate	100	125	
	Diploma	0	40	-- vide suitable staff for training at the proper time to accomplish the phased training schedule.
	Mpwapwa			
	HATI			
	Certificate	110	(No	
	Diploma	36	change)	
(b) Teaching Staff	(b) Degree holding staff at Ukiriguru raised from 5 in 1972 to 13 in 1980. Degree holding staff at Mpwapwa raised from 6 in 1972 to 14 in 1980. Degree holding staff in entire HATI system raised from 10 in 1972 to over 60 in 1980.			
(c) Trained Tanzov and paraestatal staff	(c) 15 individuals in key food crops/livestock positions with U.S. training.			
2. Facilities	See Annex III, Preliminary Agricultural Manpower Dist (Commodities) for detail.			2. See above. USAID records.

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PROJECT DESIGN SUMMARY - LOGICAL FRAMEWORK (OUTPUTS) - continued

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
3. Quality of Training at Two HATI's (a) Revised curricula, lesson plans, training materials (b) In-service training courses (c) Requirements analysis of establishing AgEd program at Faculty of Agriculture, University of Dar es Salaam	3(a-b) Baseline data to be collected by contractor and used to establish targets. Changes should be in areas of increased hours of instruction, additional laboratory/field instruction, additional teaching/training materials, regular in-service training courses, etc. (c) Study completed.	3(a-b-c) HATI/MinAg records. Professional evaluation.	
4. Other (a) Permanent career service for teaching and administrative staff of HATI's (b) Manpower development and training programs for MinAg staff (c) Classroom instruction	4(a) In force. (b) Number and types of courses to be determined by contract staff. (c) Courses and hours to be determined by Senior Contract Staff. Expect 6 contract members to carry full teaching loads for a period of 4 years. Two others to carry at least 1/2 time teaching load for 5 years.	4(a-b) MinAg records. (c) HATI records. Contract staff records and reports.	

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PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK (INPUTS)

Project Title & Number: Agricultural Manpower Development, 621-11-190-119

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Inputs: 1. U.S. Technical Assistance Personnel (a) D.M. Project Manager (1) 6 years (b) Contract Chief of Party (1) 6 years Special Asst. (1) Ntsapwa 6 years Special Asst. (1) Ukiriguru 6 years Instructor/ Trainers (2) Ntsapwa Instructor/ Trainers (4) Ukiriguru (c) Requirements Analysis Team 2 men, 4 months each 2. Commodities 6 vehicles, and parts 3. Evaluation	Implementation Target (Type and Quantity) Implementation targets, time frame and discussions are included in PROP section on U.S. inputs.	AID Project Agreements and PIO/T's. Project Implementation Plans. Project Evaluations. TanGov and other donor records.	Adequate TanGov recurrent budget resources.

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PROJECT DESIGN SUMMARY - LOGICAL FRAMEWORK (LOGFRAME) - continued

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Inputs:			
4. Local Costs Project support and in-service training costs.			
5. Participant Training			
6. Agricultural Project Support Loan II Equipment - $255,000 Construction - 135,000 Total - $390,000			
7. (a) Tudav personnel, financial and logistic support; 5,660 (b) IRRD, NYDIC and DANAID assistance, 11,600 1/			

1/ Includes support for MATI system, Agricultural Research and Farms Training Centers.

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ANNEX 5

1976 PP LOGFRAME

Project Title & Number: Agricultural Manpower Development (621-0119)

Life of Project: From FY 73 to FY 80
Total U.S. Funding
Date Prepared:

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes: To achieve self-sufficiency in food crop and livestock agricultural subsectors	Measures of Goal Achievement: 1. Imports of food crops and livestock meat products will be essentially reduced to zero by 198-. 2 Domestically produced food crops and livestock meat products will be available inexpensively, and properly marketed and distributed to meet national demand by 198-.	Customs service statistics Minag and Commerce Min. Reports	Assumptions for achieving goal targets: Tanzanian food preferences remain constant Ag sector emphasis on self-sufficienty will remain high.
Project Purpose: To provide better trained and more highly qualified manpower in the food crops and livestock subsectors.	Conditions that will indicate purpose has been achieved: End of project status: 1. Certificate & diploma level curriculum in use in the MATI for food crops at Ukiriguru and in the MATI for livestock at Mpwapwa, by 198-. 2. ___inservice training programs by 198-. 3 ___of MATI teaching & admin staff upgraded to B.S. degree by 198-. 4 Annual grads at Ukiriguru MATI of 125 certificates and 40 diplomates by 198-. (See other side)	MATI reports " " " " " "	Assumptions for achieving purpose: Qual. manpower available for training Trained people return to posts for which trained Adequate TanGov and donor financial support continues
Outputs: 1. Revised or newly developed courses. 2. New physical facilities at MATIs at Ukiriguru and Mpwapwa 3. In-service trng progs estab'd 4. Trained teaching and admin staff at MATIs 5. Personnel system estab'd for MATI	Magnitude of Outputs: 1. ___new courses by 198-. 2. Physical plant by 1975 to accomodate students to be planned certificate and diploma holders by 198-. 4. 80 BS & MS holder trained in US for MATIs 3. ___in-svc trng progs estab'd by ---- 5. 456 diploma holders & 1410 cert holders by 1981 from Ukiriguru and Mpapua assigned to positions in food crops & livestock.	UDSM catalog site inspection Minag & RDD report	Assumptions for achieving outputs: TanGov will pass act to estab career system for MATIs Qual. candidates for trng will be avail.
Inputs:	Implementation Target (Type and Quantity):	USAID records	Assumptions for providing inputs:

EOPS (cont'd) (from other side)

	M.O.V.
5. Annual grads at Mwapwa of 110 certificates and 36 diplomates by 198-.	MATI records
6. ___supportive services personnel in food crops and livestock sub-sectors assigned to MinAg, Regional, Disctrict, parastatal posts, by 198-.	MinAg records RED records
7. Support services personnel upgraded in competence to level satisfactory to MinAg by 198-.	site visits
8. MinAg established career system for teaching and administrative personnel of MATIs (with tenure and salaries stated) by 198-.	MinAg personnel system
9. Faculty of Agric. of Univ. of Dar es Salaam will have increased capabilities for agric. educ. & extension services as shown by (doubling) of professional staff by 198-.	UDSM records

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PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

file - A.S. Manyonue

ANEX D

Project Title: AGRICULTURAL MANPOWER DEVELOPMENT

Life of Project: From FY 1974 to FY 1981
Total U.S. Funding $7.9 million
Date Prepared: 7/25/76

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes: To assist the Government of Tanzania (TanGov) achieve its objectives of increased self-sufficiency in the food crops and livestock agricultural subsectors. (NOTE: This project will address a main constraint to this goal, trained managerial and technical manpower for the agricultural sector.)	Measures of Goal Achievement: 1. Imports of food crops and livestock products are reduced. 2. Production of food crops, livestock and livestock products are increased. 3. Domestically produced food crops and livestock meat products are available in sufficient supply and properly marketed and distributed to meet national demand.	1. TanGov agricultural statistics. 2. TanGov and international foreign trade statistics. 3. TanGov statistics of sales of major food and livestock products by concerned parastatals. 4. TanGov statistics on purchases of major food crops, livestock, and livestock products by concerned parastatals.	Assumptions for achieving goal targets: The TanGov continues to emphasize support to the food crop/livestock subsectors. Essential financial, manpower and policy issues will be resolved by the TanGov so as to provide a permissive environment for increased productivity of food crops and livestock by Tanzanian producers.

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PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title: AGRICULTURAL MANPOWER DEV-LOPM-NT

Life of Project: ANEX B
From FY 1974 to FY 1983
Total U. S. Funding $7.9 million
Date Prepared: 7/5/72

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Purpose: 1. To assist the TanGov in developing its professional and sub-professional training activities and capabilities. 2. To expand the supply of highly trained agricultural manpower.	Conditions that will indicate purpose has been achieved: End of project status. 1.A. MinAg Headquarters a. The TanGov has established a professional career system for the administrative and technical staffs of the MATI system. b. Regular in-service training programs underway. c. A system of evaluating agricultural manpower effectiveness will be in use with the results feeding into the further improvement of training programs. d. Future trained agricultural manpower needs have been identified with training underway or planned to meet the needs. 1.B. Ukiriguru & Mpwapwa MATIs a. New and improved curricula in use. b. Approx. 2/3's of the teaching positions filled with B.S. degree holding (or higher) personnel. c. Adequate laboratory and field space provided for student needs. d. Proper balance achieved between classroom, laboratory and field teaching. e. In-service technical & administrative training courses being used to provide MinAg staff with specific skills. f. Additional facilities and equipment in use.	1.1. MinAg records and contractor reports. 1.B. MATI records, on-site inspections, contractor reports and professional evaluations of: a. Teaching/training. b. Performance of MATI graduates. 1.C. University of Dar es Salaam records, on-site inspections, contractor reports and expert evaluation.	Assumptions for achieving purpose: TanGov will be able to provide necessary capital and recurrent costs. TanGov will effectively coordinate inputs. TanGov projects/programs will effectively utilize project trained manpower.

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AID 1020-28 (7-71)
SUPPLEMENT I

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: AGRICULTURAL MANPOWER DEVELOPMENT

Life of Project:
From FY 1974 to FY 1983
Total U.S. Funding $7.9 million
Date Prepared: 7/25/76

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Purpose:	Conditions that will indicate purpose has been achieved: End of project status.		Assumptions for achieving purpose:
	1.C. Faculty of Agriculture and Forestry at Morogoro, University of Dar es Salaam a. Functioning Department of Agric. Education & Extension b. Revised agricultural education and extension syllabus in use. c. A significant number of Faculty of Agriculture and Forestry staff members with U.S. training in agricultural education, agricultural extension, rural sociology, or related fields. d. Functioning Center for Continuing Education in Agriculture. e. Refresher courses for professional agriculturalists being provided. f. Adequate facilities and equipment available, including classroom space and an audio-visual and teaching material section.		
	2a. Key MinAg and parastatal agencies have better qualified administrative, management and technical staff. More Tanzanians occupying senior positions. 2b. Planning, management and operations of crop production and livestock projects are improved.	2. MinAg and parastatal records. Professional evaluations of crop/livestock production programs/projects.	

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AID 1023-23 (9-71)
SUPPLEMENT 1

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: AGRICULTURAL MANPOWER DEVELOPMENT

Life of Project:
From FY 1975 to FY 1983
Total U.S. Funding $7.9 million
Date Prepared: 7/25/76

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs:	**Magnitude of Outputs:**		**Assumptions for achieving outputs:**
1. Manpower a. Trained Students (annual output) b. Trained Teaching Staff c. Trained TanGov and parastatal staff	1.a. Ukiriguru MATI Certificate: Begin Status 100, Current Status 115, End of Proj. Status 125 Diploma: Begin Status 0, Current Status 0, End of Proj. Status 40 Mpwapwa MATI Certificate: Begin Status 110, Current Status 110, End of Proj. Status 110 Diploma: Begin Status 36, Current Status 36, End of Proj. Status 36 Faculty of Ag/Forestry B.Sc. Degree (Ag Ed/Ext.): Begin Status –, Current Status 0, End of Proj. Status 20 Students from other ag. spec. receiving instruction & course work in agric. education & extension: Begin Status –, Current Status 0, End of Proj. Status 76 1.b. Degree holding staff at Ukiriguru raised from 5 in 1972 to 13 in 1980. Degree holding staff at Mpwapwa raised from 6 in 1972 to 14 in 1980. Degree holding staff in entire MATI system raised from 30 in 1972 to over 100 in 1980. Faculty of Agriculture and Forestry staff with U.S. grad. degrees in areas relevant to agricultural education and extension raised from 22 in 1976 to 38 in 1980.	1.a.b.c. MATI/MinAg/U-DSM records. TanGov records. Professional evaluation.	The TanGov and all donors will continue to coordinate their efforts, support and inputs.
2. Quality of Training at Two MATIs a. Revised curricula, lesson plans, training materials. b. In-service training courses.	2.a.b. MATI records, plans.		Required capital and r current budget support will be provided by the Tan Gov.
3. Scope of Training in the Faculty of Agriculture & Forestry a. Revised curricula, particularly for agricultural education/extension students. b. Functioning Center for Continuing Education in Agriculture.	3.a.b.c. MATI/MinAg records Professional evaluation.		The TanGov will provide suitable staff for training at the proper time to accomplish the phased training schedule.
4. Other a. Permanent career service for teaching and administrative staff of MATIs. b. Manpower development and training programs for MinAg staff. c. Classroom instruction (MATIs). d. Requirements analysis of establishing Agricultural Education program at Faculty of Agriculture and Forestry, U of DSM.	4.a.b. MinAg records. 4.c. MATI records. Contract staff records and reports.		

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PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title: AGRICULTURAL MANPOWER DEVELOPMENT

Life of Project:
From FY 1977 to FY 1982
Total U.S. Funding 37.9 million
Date Prepared. 7/25/76

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs:	Magnitude of Outputs:		Assumptions for providing outputs:
e. Agricultural manpower survey for use in planning training programs.	1.c. 20 individuals in key food crops/livestock positions with U.S. training. 2.a.b. Baseline data to be collected by contractor and used to establish targets. Changes should be in areas of increased hours of instruction, additional laboratory/field instruction, additional teaching/training materials, regular in-service training courses, etc. 3.a. Up to 30 lecture hours on principles of extension education. Up to 50 lecture hours on the administration and supervision of programs of agricultural education and extension. Additional practicals in extension, agricultural education and agricultural production. Other changes as determined by project staff. 3.b. in place and in use. 3.c. Precise numbers and courses to be determined. Estimated that at least 700 individuals will receive an average of 2 weeks training.		

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AID 1020-28 (9-71)
SUPPLEMENT 1

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: AGRICULTURAL MANPOWER DEVELOPMENT

Life of Project:
From FY 1974 to FY 1983
Total U.S. Funding $7.9 Million
Date Prepared: 7/25/76

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Inputs:	Implementation Target (Type and Quantity)		Assumptions for providing inputs:
1. AID Grant a. U.S. Technical Assistance Personnel[1/] (1) D.H. Project Manager (1) 8 yrs (2) MinAg/MATI Staff (a) Contract Chief of Party 7-2/3 years (b) Special Asst. (1) Mpuapua 4 years (c) Special Asst. (1) Ukiriguru 4 years (d) Instructor/Trainers (2) Mpuapua 4 years each (e) Instructor/Trainers (4) Ukiriguru 4 years each (f) American Admin Assistant 5½ years (3) Requirements Analysis Team 4 men one month each (4) Staff for the Dept. of Agric. Education & Extension UDSM (a) Agricultural Education Specialist 4 years (b) Agricultural Extension/Rural Sociology Specialist - 4 yrs. (c) Agricultural teaching materials and audio visual aids Specialist - 5 years (d) Extension-Education Specialist & Director of Center for Continuing Education in Agriculture 4¼ yrs (5) Consultants (22 staff months)	(1) Funding not included. (2) $3,299,000 (3) (Est. $ 20,000 included above (4) $1,349,000 (5) $132,000	AID Project Agreements and PIO/T's. Project Implementation Plans. Project Evaluations. TanGov and other donor records.	1. Adequate TanGov recurrent budget resources. 2. Properly qualified contract staff can be located in a timely manner. 3. Personnel are available for training. 4. AID management is adequate.

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AID 1020-25 (7-70)
SUPPLEMENT 1

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: AGRICULTURAL MANPOWER DEVELOPMENT

Life of Project:
From FY 1974 to FY 1983
Total U.S. Funding 27.0 million
Date Prepared: 7/25/76

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs:	Magnitude of Outputs: 4.a. In force. b. Number and types of courses to be determined by contract staff. c. Courses and hours to be determined by Senior Contract Staff. Expect 6 contract masters to carry full teaching loads for a period of 4 years. Two others to carry at least half-time teaching load for 4 years. d. Report completed. e. Results available for planning.		Assumptions for achieving outputs:

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PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1974 to FY 1980
Total U. S. Funding $7.9 million
Date Prepared: 7/25/76

Project Title: AGRICULTURAL MANPOWER DEVELOPMENT

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Inputs:	Implementation Target (Type and Quantity)		Assumptions for providing inputs.
b. Commodities			
(1) 13 Landrovers and 1 bus	(1) $158,000		
(2) Audio-visual aids, teaching equipment & misc.	(2) $ 54,000		
c. Participants			
(1) MinAg, HATIs & other agric. institutions - 60	(1) $1,190,000		
(2) Faculty of Agriculture and Forestry - 20	(2) $ 428,000		
d. Other Costs			
(1) Evaluation of MinAg/HATIs	(1) $ 25,000		
(2) Evaluation of Faculty of Agriculture & Forestry, Dept. of Agricultural Education and MinAg/HATIs	(2) $ 35,000		
(3) Facilities at Faculty of Agriculture			
(a) Building of 800 sq. mo. for the Department of Agric. Education & Extension and the Center for Continuing Education in Agric. - Included will be lecture rooms, seminar rooms, an audio visual laboratory, offices and storage.			
(b) a hostel for 50 students			
(c) 4 senior staff houses	(3) $ 870,000		
(4) Misc. such as invitational travel, supplemental household furniture, certain teaching materials, etc.	(4) $ 234,000		
e. Inflation & Contingency	$ 141,000		
TOTAL AID GRANT	$7,915,000		

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AID 1020-28 (5-71)
SUPPLEMENT 1

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 1974 to FY 1983
Total U.S. Funding $7.9 million
Date Prepared: 2/15/76

Project Title & Number: AGRICULTURAL MANPOWER DEVELOPMENT

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS Implementation Target (Type and Quantity)	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS Assumptions for providing inputs:
Inputs:			
2. AID Loan (not part of this project) Agricultural Project Support Loan II			
(1) Equipment (teaching)	$ 310,000		
(2) Construction (9 houses)	$ 135,000		
TOTAL AID LOAN	$ 445,000		
3. Tan.Gov			
a. Minag/MATIs			
(1) Recurrent budget for operation of MATIs	(1) $3,570,000		
(2) Trust Fund contribution	(2) $ 105,000		
(3) Participant airfare & salaries	(3) $ 132,000		
Sub-Total	$3,807,000		
b. U-DSM/FAF			
(1) Recurrent Budget	(1) $ 502,000		
(2) Participant Support	(2) $ 80,000		
(3) Centralized Services	(3) $ 286,000		
(4) Land Facilities	(4) $ 40,000		
(5) Training Fees	(5) $ 195,000		
(6) Trust Fund contribution	(6) $ 45,000		
Sub-Total	$1,148,000		
TOTAL	$4,955,000		
4. Other Inputs Related to but Not Part of Project			
a. AID Agricultural Sector Loan I (Improvements in MINAG Training Facilities)	$1,000,000		
b. IDA Loan for facility construc. in MATI system ($839,000 for Uxirigwru and Mpwapwa)	$1,839,000		
c. NORDIC AID to MATI System - facilities & technical assistance (all to Mbeya)	$2,586,000		

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ANNEX 6

BASELINE INFORMATION

A. Inadequacy of Baseline Data

Extension baseline or pre-project data was required for nearly all measures of goal achievement, end of project status (EOPS) areas and magnitude of output indicators to definitively evaluate Project progress. This information ranged from food crop and livestock import data for Tanzania to available teaching/training materials at the two MATIS. It included not only quantitative, but qualitative information as well. For example, while the log frame suggests only numbers of graduates as a test of project success, the quality, effectiveness and content of their training and student satisfaction, achievement levels and job performance are also relevant qualitative (and quantitative) indicators of Project results. Similar measures of in-service training and numerous other Project results could be used to evaluate the Project. To be used effectively, however, these indicators require a baseline.

In fact, only sparse and quantitative baseline data (number of teachers, number of students, number of degree holders, etc.) was available for evaluation of the Project. Much of the baseline data that was available was not related to project inputs. This made a definitive evaluation of Project results difficult. Moreover, the very short amount of time available for the final evaluation effort made it impossible to develope needed baseline data even in cases where past records might contain it. Because there was a clear danger that existing log frame indicators and available information to support them could lead to a superficial evaluation of the Project, an attempt was made to identify other possible measures of Project progress before beginning

detailed evaluation work. A synopsis of that effort is included in the following section.

B. Suggested Measures of Project Success

1. Goal

While the indicators of goal achievement are closely linked to the desired goal in the PP, it is highly questionable whether achievement of the Project's outputs and purposes could make a significant contribution to achievement of the goal by the time of the final evaluation. Moreover, it was generally known before the evaluation began that the goal had not been achieved to any major degree and that the measures of goal achievement would berify such a conclusion. (Chapters IV and V provide further elaboration). As a result the Evaluation Team decided not only to analyze the aggregate data suggested by the verifyable indicators included in the log frame but also to attempt to note in quantitative or qualitative terms any specific local food or livestock production, marketing or distribution impact resulting from the activities of manpower trained by the Project at the two MATIS or at U.S. universities (participant trainees). Such micro results, although not sufficient to achieve all fo the desired goal now, would suggest the possibility of Project contributions to goal attainment over a longer time frame and in terms of spread effects.

2. Purposes

EOPS could be determined in most cases. Without baseline data (and without adequate time to construct one), however, it would be impossible to determine the specific degree of achievement realized as a result of the Project in the case of each indicator. Moreover, analysis of the Project design

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and early conversations about the Project in Tanzania raised questions as to whether the hypothesized linkages included in the log frame 1) would result from the Project if it was implemented as designed, and 2) were sought in actual Project implementation. If one or both were not true, the verifiable indicators could be independent of the Project. This would make many of the log frame indicators mostly irrelevant, even though the actual contribution made by the Project might still make it a success.

Thus, to provide a definitive and high quality evaluation it was necessary to determine 1) the extent of which the Project caused purposes to be achieved (as defined by each designated EOPS in the log frame) and 2) the degree of achievement realized.

Another problem in completing a quality evaluation of the Project was also evident from the initial analysis of the Project design. The EOPS described for many areas was devoid of qualitative content. For example, the EOPS "regular in-service training programs underway" requires more than noting such efforts are being undertaken. The quality, content, effectiveness and appropriateness of in-service training are also necessary components of a proper project evaluation.

To deal with these potential problem areas, it was decided to seek both qualitative and quantitative information via interviews, observation and examination of documents within the time available to the Evaluation Team to develop the following:

- The intent, direction and actual impact of project activities with respect to each EOPS area.
- Baseline information in each EOPS (e.g., what in-service training programs were underway when the project started; what was their content; etc.)

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- The degree of improvement over baseline conditions for each EOPS area that could be attributed to Project outputs.

- The quality and effectiveness of the change made in each EOPS area as a result of the Project

3. Outputs

Evaluating the outputs resulting from the Project presented the same basic problems described above for Project purposes. An additional problem was that in sme cases the log frame included essentially the same indicators for determining achievement of both purposes and outputs. (e.g., number of tutors in the two MATIS with B.S. degrees).

Again, the Evaluation Team decided to try to determine the actual linkage between Project inputs and outputs as defined by the magnitudes suggested as indicators, to uncover whatever baseline information one could in the time available, and to determine the degree and quality of change in the magnitude of the outputs attributable to the Project by interviews, observation, and analysis of readily available documents.

For example, to evaluate the Project output of "trained students," the number of persons trained annually by the Ukiriguru and Mpwapwa MATIS compared to the baseline number is one measure. The project per se had little to do with any such increase, however, and the increase alone is not especially helpful anyway.

It should be coupled with some verification of the effectiveness and usefulness of the training to be most germane. The students' views of the benefits of the training, of whether they were trained well for their jobs, and the views of others as to their job competence are measures that could be used.

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Even these are difficult to apply in this case because the Project contributed only a small part of the training of MATI students, and most MATI students were not trained for a specific job. Moreover, not instruments were at hand to assess the impact of the training on student job performance, nor to determine whether students affacted by the Project are more or less effective than those who graduated prior to the Project or from MATIS where no special assistance has been given. Nevertheless, seeking information along these lines, no matter how spotty, was helpful in making the evaluation. Similar information was sought for purposes of evaluating the trained teaching staff and trained Tan Gov and parastatal staff outputs of the Project.

As another example, evaluation of the quality of training at the two MATIS assisted by the Project could be partly achieved by 1) examining curricula, lesson plans, field and lab instruction, training materials and in-service training courses developed directly as a result of the Project, 2) reviewing or discussing the activities and materials in Mpwapwa and Ukiriguru that existed prior to the Project initiation, and 3) reviewing and discussing similar activities and materials in a MATI that had not received assistance. Conversations with students and tutors about the quality of the training in various MATIS also helped.

C. Conclusions and Recommendations

1. Conclusions

- Baseline information was not emphasized during the identification, design, or implementation stage of the Project. As a result almost no baseline data were developed. (This lack of pre-project information made all Project

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evaluation efforts more difficult and less effective than desired.)

- Past Project evaluations emphasized developing additional baseline data, especially in the area of improving the quality of instruction at the Ukiriguru and Mpwapwa MATTS. These recommendations were never carried out. Of all the key action agencies in the Project, only AID/T made any effort to assure that they were followed up and these efforts were not effective.

- Baseline data was required in many more areas than any evaluation recommended in order to assure successful Project monitoring and a definitive final Project evaluation.

- Development of baseline information was not included as a part of the AID WVU contract or as a part of the AID Tan Gov Pro Ag in any year. Partly as a result, no party to the Project felt a clear obligation to give priority to the creation of baseline data. (WVU-NCATSU technical personnel, MATT administrative staff, and MDD staff all denied knowledge of the need to develop baseline information, even though its development was mentioned in both the 1973 PROP and 1976 PP log frames.)

- Attempting to build baseline data early in the life of the Project — especially during the design stage and at the beginning of implementation — would have helped clarify many of the weaknesses in the design of the Project. Had such problems been identified early, it is possible that the Project would have been redirected and managed so as to be more effective in producing desired results.

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2. Recommendations

- Much more emphasis should be given to developing baseline data for manpower training projects such as this one, especially during the project identification and design stages. Terms of reference should require the creation of baseline data during both stages, and participating action agencies should be given explicit responsibilities regarding its development. Even if all necessary information cannot be created during these stages of project formulation, it should be included as a required output of the project during the early part of the implement action phase.

- Where baseline data are to be developed as a part of project implementation, they should be explicitly included in both AID-contractor contracts and AID - Government Pro Ags. and one or more action agencies should be given clear responsibility for this development.

- Training projects should be rigorously monitored by all action agencies in light of baseline data and the EOPS and output magnitudes desired at the end of the project. Formal and informal project reviews, for example, should be undertaken using milestones, etc. based upon baseline data and desired project results.

- Recommendations made during the life of the Project to develop baseline information should be followed up by the appropriate action agencies.

ANNEX 7

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PROJECT DESIGN

A. Logical Framework Analysis[1]

1. Introduction

The initial design of the Agricultural Manpower Development Project was weak in one fundamental respect. It was grounded on the hypothesis that manpower trained in the MATI system and in U.S. universities would remove the "critical" manpower constraint hindering the achievement of food self sufficiency. This hypothesis was unlikely at the time the project was designed and is especially doubtful today for three basic reasons.

First, the training received at MATIS and U.S. universities is ineffective because it is largely 1) unrelated to the actual problems of Tanzanian farmers, food processors and other, and 2) theoretical and unapplied in actual field situations.

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[1] There are at least two log frames for the Agricultural Manpower Development Project. One is from the 1973 PROP (Annex). And another is from the 1976 PP (Annex). The Project design illustrated by the 1973 version, while very similar to the 1976 log frame, is somewhat stronger in several respects and especially in terms of Project purposes. Moreover, the Project design spelled out in the PROP is much clearer than the restructured version presented in the PP. The terms of reference called for use of the 1976 PP and log frame in making this evaluation; various of the project participants also seemed to be more familiar with the 1976 version. Therefore, this analysis focuses on the 1976 log frame.

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Second, even the nascent potential of MATI and U.S. training to contribute to food self sufficiency cannot be realized until trained people can flow into a system in which there is effective interaction between Tan Gov policy, farm, processsing and marketing problems, research and extension; such interaction does not yet exist in Tanzania.

Third, the Projet was not designed to provide enough trained agricultural manpower to be significant in affecting the goal of food self sufficiency, even if the training was relevant and the above mentioned interaction existed.

This weakness is the result of a failure in Project design, not of poor implementatim or maragement.

Once the Project was launched in a contert where it could have little impact on overall training content and numbers of students graduated and where most of the factors needed to actually improve food production and marketing were not known or available, even superlative implementation could not reduce the critical manpower constraint very much.

2. Linkages

The hypotheses or linkages between inputs, outputs, purposes and goal in the Project design were generally weak. As already indicated above, the purpose of goal linkage was

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especially troublesome.

The linkage between outputs and purposes was superficially appropriate, but closer examination shows the original design to be flowed in several ways. The expectation that MATI curricula would be substantially improved by the Project should have been recognized as unlikely at an early stage of Project formulation. Also, increased output of MATI graduates and participant trainees should not be both an output and a purpose of the project. A better project purpose than "expand the supply of highly trained agricultural Manpower" would have been "train additional agricultural manpower competent to exercise key goal related food and livestock production and distribution skills in specific positions in MATI, other Min Ag and parastatal agencies"[1]

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[1] It should be noted here that a critical 1973 PROP purpose was drastically altered in the 1976 log frame. In the 1973 version the purpose was:

> To assist the Min Ag strengthen two existing (Ukiriguru and Mpwapwa) diplova/certificate institutions by developing practical, applied and operational training capability focusing on junior and intermediate level staff who are expected, over time, to provide manpower/technical and management skills for the Tan Gov food crop and livestock production programs/projects and operations.

In the 1976 version, this purpose became "to expand the supply of highly trained manpower." The apparent reason for this revision was to accomodate the development of the DAEE and CCAE (which were included in the 1976 PP) under a more general purpose. The likely result, as discussed at several points later in the paper, was to lose sight of one of the most important purposes of the project — to greatly strengthen two carefully selected MATIS.

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Perhaps the most significant weakness in the 1976 output to purpose linkage was that an adequate number of participant trainees were not required to fill MATI Ukiriguru and Mpwapwa tutor positions.[1] This factor along greatly reduced the institution building result of the Project at the two MATIS and turned the participant training component into a "basket" training program largely divorced from the central purposes of the Project.

Another difficulty that should have been identified and dealt with as a part of Project design is that many U.S. participant trainees, although trained in the technical subjects in the U.S., became administrators upon return to Tanzania. Such persons are lost as skilled technicians in

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[1] It was clearly expected in the 1973 PROP, however, that a large number of US participant trainees would be sent from and return to Ukiriguru and Mpwapwa MATIs (see pp. 22, 23 and 25). Neither expectation was met and most trainees who did leave from and return to the two MATIS did not remain for long. It may be that these expectations were unrealistic from the start. If fulfilled, the two MATIS would have had 27 tutors with B.S. degrees. Whether this preponderance of trained manpower at two MATIS could be expected to continue over time in light of needs for it in other MATIS is questionable. In fact, the U.S. participant training component rapidly lost sight of the special requirements of the two MATIS as discussed later in this report.

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the food production and distribution effort and also are poorly trained as administrators.

A final problem with the output to purpose linkage could have been foreseen during Project design. The probability that an advisor in the MDD can plan and execute or even definitively influence curriculum, in-service training, a career service system, etc. is not nearly as great as the design suggests.

3. Assumptions

The Project design had two problems with respect to assumptions, one minor and one major. The first problem, a minor one, was the assumption that U.S. participant trainees would "return to the posts for which they were trained." In fact, very few participants were trained for specific posts and numerous participants are being used in posts where their training is not directly applicaple to their duties.

The major problem with respect to project assumptions were not specified in the Project design. As it turned out, some of the assumptions not included did not hold and Project progress suffered as a result. Had they been included, however, Project specifications might have been altered in a beneficial way, during both design and implementation. An example using assumptions for achieving goal targets is given

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below to illustrate this overall point.

Important assumptions for achieving goal targets not included in the design are:

- Necessary mix of agricultural related inputs (including research results) is known and will be available when needed to complement trained manpower activities.
- Trained agricultural manpower will be used in the agricultural sector where the most productivity is likely to result from their activities.
- Farmers and others in the agricultural sector are capable in financial, managerial and related terms of absorbing necessary technical packages and approaches for assisting them in doing so, are available to and known and used by trained manpower.
- Continued efforts by Tan Gov to assure foreign exchange earnings and real farm gate prices remain constant or increase.
- Continued efforts by Tan Gov to assure area security situation remains stable.
- Continued efforts by Tan Gov to control major livestock and crop diseases.

Numerous less important assumptions also could have been included.

Had the assumptions regarding the availability of an appropriate mix of agricultural inputs and approaches for assisting farmers in using technical packages been developed for inclusion in the design, it is likely that the Project designers would have realized that such factors were not

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available. They may have then altered the Project design so that more emphasis was placed, for example, on linking MATI and U.S. participant training to known and emerging research and extension results in Tanzania, on approaches for developing and implementing technical packages and on means for taking them to farmers. Likewise, the roles of expatriate tutors may have been defined differently. Early consideration of this Project seemed to include some of these ideas, but they disappeared as the project was refined and implemented.

4. Indicators and Verification

Some project indicators were quantitative to a fault and devoid of any qualitative content. Others were qualitative and measurable, but lacked precision as indicators. A basic problem nearly all cases is that the indicator is not explicit enough to be used as stated for evaluation purposes. Another problem is that some indicators are not independent of each other — that is, they are used to measure achievement at two different levels. (This was less true in the 1973 log frame).

5. Conclusions and Recommendations

a. Conclusions

- Underlying conditions of vital importance to Project success were totally overlooked

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in designing the Project. This failure appears to stem from a lack of rigorous analysis and from not taking a broad enough systems view in framing the Project.

- Even apart from the above underlying conditions, design of the Project was generally weak, both conceptually and in terms of reasonable expectations regarding possible progress and accomplishment under Tanzanian circumstances. Again, this failure stemmed from lack of rigorous analysis and inadequate familiarity with or account of Tanzanian conditions.

- If more effort and analysis had been provided during the design of the Project, it may have brought the design problems to light and resulted in Project design alterations that would have contributed greatly to overall Project results.

- Intermediate evaluations of the agricultural manpower project did not go beyond the immediate parameters of the Project design. As a result, critical flows in the basic Project design were not uncovered and alterations that could have improved Project success were not considered.

b. <u>Recommendations</u>

- Training projects should be grounded on a wide ranging analysis at the design stage that specifically includes consideration of the presence, magnitude and quality of all elements of the system into which the trained manpower will flow. A rigorous testing of the final proposed project design should be undertaken at the AID Mission level for the explicit purpose of assuring that project results are realistic

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in light of the magnitude of planned inputs and Tanzanian conditions.

Training projects should be required to continuously compile and distill means of verification for all indicators during project implementation. This would enable AID project officers to test the project design against agreed milestones at an early stage. Means of verifying critical assumptions should also be compiled and distilled into usable form, especially where changes in an assumption could be compensated for by alterations in project activities.

Intermediate (and final) project evaluation of training programs should be required to look beyond the bounds of the project design to identify basic design flows and ways in which project success could be enhanced.

B. Action Agencies and Implementation

1. Responsibilities and Authority

Numerous activity centers were involved in converting Project inputs to outputs, but seven appear to have been most relevant to the design stage:

- A university contract team (subsequently WVU-NCATSU)
- WVU in Morgantown, West Virginia
- MDD
- MATI Ukiriguru
- MATI Mpwapwa
- AID/Tanzania

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The responsibilities for Project implementation were grouped under WVU, Min Ag/MDD, and USAID. The 1973 PROP provided guidelines for the management and implementation of contract procedures, and the 1976 PP made some additions as to concrete responsibilities of these action agencies.[1]

Project operations, administration and management were the responsibility of the MDD. The Chief of Party of the contract team was to have minimal Project administrative responsibilities, but to be primarily responsible for the administrative support of contractor team members. AID/T was to provide a Project Manager who would represent USAID in 'official" contacts with the COP and Min Ag officials in discussions, evaluations and other matters relative to the Project, its progress andits performance. The Project Manager was to be available to the COP to answer AID-related questions or provide guidance "only if required."

The PROP guidelines were deficient in many respects, and although the subsequent USAID - WVU contract and various

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[1] See USAID PP, Agricultural Manpower Development 1976, p. 43 ff.

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Pro Ags clarified some of the issues, several remained unresolved well into the implementation stage. For example, the mid-term evaluation nated that lack of clarity as to the responsibilities of the COP and the AID/T Project Manager continued to cause difficulties and should be resolved.[1]

The 1976 PP attempted to further clarify some of the responsibilities and authorities assigned to various parties. It also noted, however, that "the MDD is thinly staffed." In some cases, the responsibilities defined were not effectively carried out by the agency concerned.

In fact, as noted later in this report, the lack of clearly defined responsibilities and authority in the project led to substantial problems in the latter implementation stage. Some of these surfaced and were dealt with while others were never satisfactorily resolved.

It was reasonable to expect such difficulties because of the very light treatment given to the implementation aspects of the Project in its design and early implementation

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[1]General Research Corporation, Evaluation of Tanzania Agricultural Manpower Project (McLean, Va., 1978) under AID/afr-c-1142, W.O. #48, p. 15.

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stages. Some of the problems that arose because of poor implementation of assigned responsibilities also could have been predicted and accounted for during project design.

Most of the fault in this area falls within the design stage, although much of the design weakness could have been overcome by good implementation. As noted in Chapter IX, it was not.

2. Conclusions and Recommendations

a. Conclusions

- The responsibility and authority of each action agency involved in the Project was not defined precisely enough during the design stage (nor during the early implementation stage) of the project. This lack of clarity contributed to short falls in project results over the life of the project.

- Too little attention was given to the roles to be played by the different activity centers involved in the Project. Responsibility, authority and communication channels were not detailed, for example.

- A more detailed delineation of the role of each activity center during the design stage would have strengthened the Project and made it more likely that the results desired by each action agency involved with the Project would be achieved.

- Leaving the major aspects of management and implementation responsibilities to be sorted out among the action agencies during pre-implementation activities and the imple-

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mentation stage shifted a substantial element of Project planning into the implementation stage without providing resources to develop an appropriate implementation plan for use by all parties at that time.

b. Recommendations

- Substantial detailed attention should be given to the responsibility, authority, communication and other management and implementation aspects of training projects during project design, especially when numerous and geographically widespread activity centers are involved.

- A master integrated implementation plan should be developed under the direction of a clearly designated action agency and agreed upon by all action agencies for major projects prior to or at the time implementation begins. This plan should be reconsidered at least annually by all activity centers within the project and altered as necessary.

- Management and implementation plans should consider activity centers within a project as well as action agencies. It is inadequate to lump responsibilities, etc. under an action agency heading when several components of the agency are involved in the project with different or separate roles.

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ANNEX 9

Brief History of Agricultural Manpower Development Project

A. 1973

The PROP for the Project was submitted to AID/W in April and approved in December. Three participant trainees were sent to the U.S. in December; one already in the U.S. was funded by the Project.

B. 1974

The initial ProAg was signed in February. Construction of three staff houses at MATI Mpwapwa and six staff houses at MATI Ukiriguru was begun early in the year. A technical assistance contract between USAID and WVU-NCATSU was signed in November. Two participant trainees were sent to the U.S. and one to Nairobi. The first student graduated and returned to Tanzania. The Nairobi student was forced to return to Tanzania because the university closed.

C. 1975

The COP arrived in Tanzania in February. The first contract team field member arrived in Tanzania and was posted at MATI

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Mpwapwa in November.

Construction of the nine staff houses was not completed due to numerous supply, contractor and related difficulties. As a result, additional technical staff members could not be placed at the two MATIs. Related buildings being constructed at the two MATIs with IDA funds also lagged behind schedule.

A new career service system for MATI staff which was developed by the MDD during 1974 was implemented in June.

The FAF of UDES initiated a new DAEE prior to the intended arrival of the study team which was to examine the feasibility of such a department as a part of the Project. New terms of reference for the team were developed and it completed work on a PP for further implementation of the new department in June and July. A new career service for MATI personnel was implemented in June.

Seventeen participant trainees were sent to U.S. universities for training (including student originally sent to Nairobi in 1974); three participants graduated and returned to Tanzania.

Three project vehicles -- American Jeeps -- arrived in Tanzania during the year as did some furniture and household equipment. MATI training equipment was advertised for bid in October 1975. Various household items for project personnel were ordered by TanGov.

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The MinAg requested the Project provide a library consultant in April. Terms of reference were worked out and a consultant at WVU was identified.

A team to design a farmer training sub-component of the Project arrived in Tanzania in July and prepared a PP.

In-service training courses for 200 junior staff were carried out at the MATI level.

The first formal project review was held at AID/T in November.

D. 1976

Seven contract team members arrived in Tanzania, one in April, four in May and two in November. Five were posted to Ukiriguru and two to Mpwapwa. The contract team was complete for the first time on 22 November.

The AgroVet certificate course was implemented at MATIs Ukiriguru and Mpwapwa in June. MATI Mpwapwa split off from MATI Morogoro and began teaching second year AgroVet certificate, also in June.

Two houses at Mpwapwa were completed and one nearly so by year end. None of the staff houses were completed by year end at Ukiriguru.

The PP for the DAEE and CCAE project was submitted to AID/W in November.

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Eleven participant trainees were placed at U.S. universities; three students returned to Tanzania. Project vehicles and household furnishings were in place for all Project staff by the end of the year.

The Director of the MDD (DMD) requested a team of curriculum consultants to assist the MDD; terms of reference for the study were drawn up.

The library improvement study was undertaken in February and March and agreed upon actions stemming from the study were being taken by various agencies at year end.

Two contract team members were appointed Deputy Principals (as opposed to Assistants to the Principal) and took on administrative as well as teaching duties.

Other contract team members undertook a wide range of activities at Ukiriguru and Mpwapwa --teaching, supervising practicals, and serving as department heads, advisors to student clubs, etc.

Teaching equipment for the two MATIs arrived throughout the year.

MATI Mpwpwa moved into IDA funded buildings in December. The new diploma course in animal health was also initiated in December.

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E. 1977

The six houses at MATI Ukiriguru were finally completed, but their quality was very poor and no one was satisfied with them.

The Farmer Training PP was approved by AID/W in November.

Twenty-two additional participant trainees were sent to the U.S. for training, bringing the total number to 59; 13 graduates returned to Tanzania, bringing total returnees to 20.

Two additional vehicles were ordered in April; this time Chevrolet pick-up trucks.

The team of curriculum consultants requested by the MinAg carried out its study in February; results were approved and implementation began.

Diploma syllabi for crop production and animal health were developed and adopted for use by MATIs Ukiriguru and Mpwapwa respectively.

MDD requested a consultant team to carry out the planned agricultural sector manpower study. Terms of reference were developed.

First year certificate students moved from MATI Morogoro to the new IDA funded facilities at MATI Mpwapwa. Confusion reigned for the first half of the school year as the settling-in process occurred.

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Detailed improvements in MATIs Ukiriguru and Mpwapwa administration and teaching activities were made.[1]

F. 1978

Six contract team members departed Tanzania, four in May and two in December. One team member arrived in June. This left the contract team with four members, one in Dar es Salaam, one at MATI Ukiriguru, and two at MATI Mpwapwa. Recruitment of replacements was not effective by year end.

WVU-NCATSU learned they had won the contract to implement the Farmer Training Project. Although the contract was not signed during the year, substantial preliminary work was undertaken by the Agricultural Manpower Development Project COP in anticipation of the signing.

Two additional participant trainees were placed in U.S. universities; 12 graduates returned.

Substantial work in standardizing diploma syllabi was undertaken by MDD.

The manpower survey was delayed to thoroughly rework the terms of reference for the study; the task was completed by use of a short term consultancy.

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[1] Brief reports of each contract team member's activities are included in the 1977 annual progress report of the COP.

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The mid-term project evaluation was undertaken in February by an outside consulting firm. The recommendations made by the evaluation team were still under discussion by MDD and AID/T at year end, but overall project progress was judged to be acceptable.

Contract staff were fully involved in teaching, preparation of various teaching materials and other activities during their time in Tanzania.

G. 1979

One additional WVU-NCATSU field staff member was added at Ukiriguru in July, bringing total contract staff to six; three positions -- one at Mpwapwa and two at Ukiriguru -- remained unfilled throughout the year. The original COP departed in August and was replaced by a former field staff member who earlier had left the Project, also in August.

WVU-NCATSU field staff continued their heavy teaching loands, began work on finalizing teaching notes and materials, chaired

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[1] Progress and end of tour reports for each technical contract staff member are included in the 1977 annual project report of the COP.

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committees, and carried out various special projects. The COPs worked on the curriculum development efforts, the manpower survey, and on initiation of the Farmer Training Project.

The final three participant trainees depart for U.S. study, bringing the total number sent for training to 61. By year end, 43 had returned to Tanzania and 18 remained in training, 14 of which were being funded by the Project. Of the 43 returnees, 23 were posted in the MATI network.

One Landrover vehicle (transferred from the Farmer Training Project) was added to the Project in 1979 in lieu of the three thought to have been on order. It took months to realize the three Project vehicles had not been ordered or had been diverted elsewhere.

Small orders of equipment were received throughout the year.

The fieldwork on the Manpower Development Survey was completed during the year, although the final report was still not available at year end.

A Farmer Training Project technical assistance contract was signed between USAID and WVU-NCATSU in September.

MDD staffed and activated its Curriculum Development Section at year end along the lines suggested in the Project-sponsored curriculum study. It also initiated an effort to develop topical manuals for all MATI courses. Development of draft manuals in various areas will be carried out by individual MATIs.

ANNEX

TANZANIA AGRICULTURAL MANPOWER PROJECT PROGRESS REPORT, JANUARY — DECEMBER, 1977

Submitted by

Robert H. Maxwell
Chief of Party

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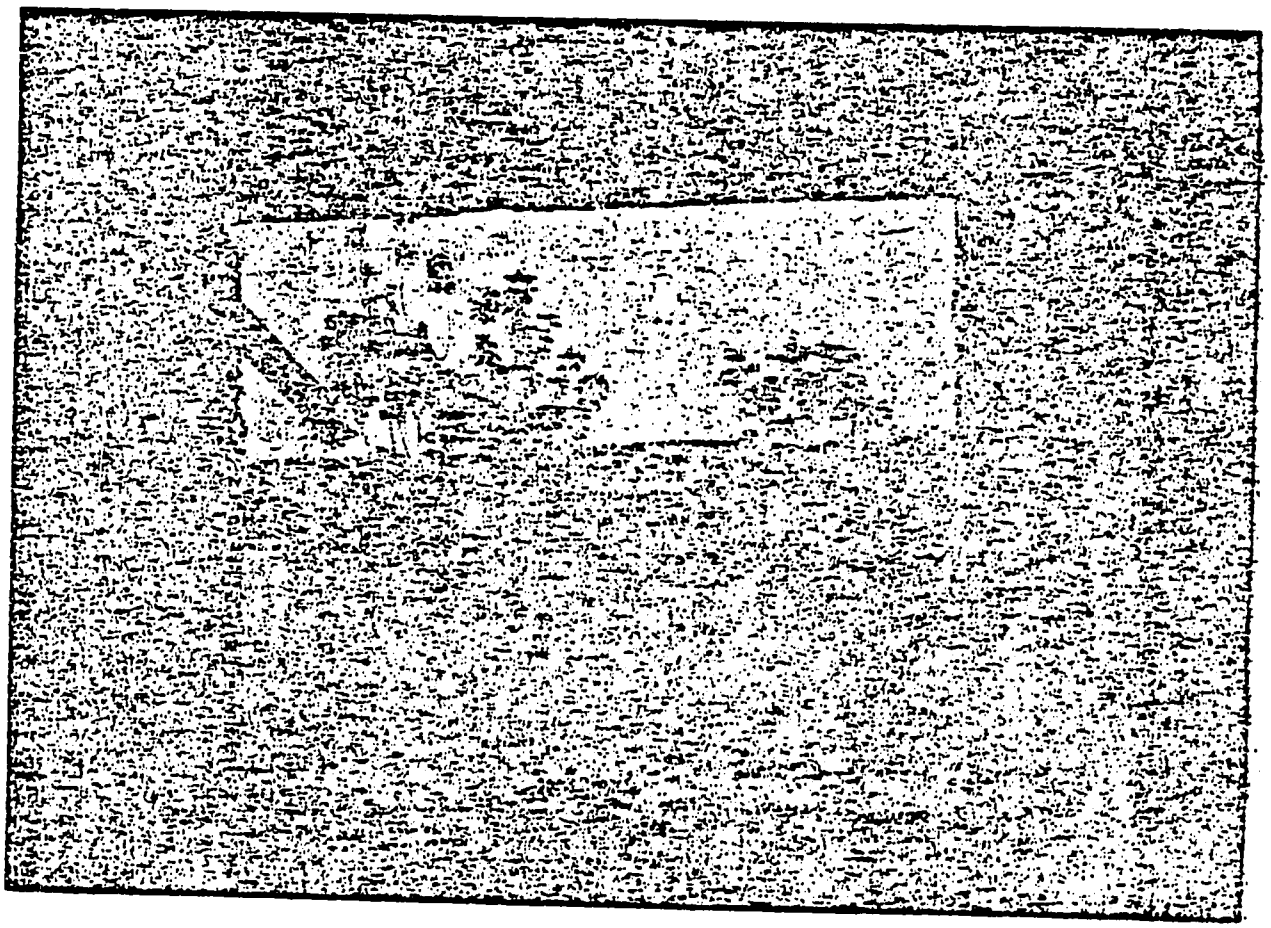

West Virginia University
Morgantown, West Virginia

North Carolina Agricultural and Technical State University
Greensboro, North Carolina

Contract Report USAID/Afr.-C-1067
WVU Office of International Programs Report No. 59, April, 1978

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THE AGRICULTURAL MANPOWER PROJECT

The initial Project Agreement between Tanzania and the USAID was signed on 12 February, 1974. The contract to provide services under this Project Agreement was awarded to a consortium of West Virginia University and North Carolina Agricultural and Technical State University. On behalf of the Consortium, Dr. James G. Harlow, President of West Virginia University, signed the contract with AID/Washington on November 11, 1974. Project implementation was visualized in a three-phase sequence and included the following major project purposes:

1. To assist the Tanzanian government in the overall development of its entire sub-professional (technical) and professional agricultural training programs/activities.

2. To assist the Ministry of Agriculture in strengthening two existing diploma/certificate institutions (Ukiriguru and Mpwapwa), by developing practical applied and operational training capabilities focusing on junior and intermediate level staff who are expected, over time, to provide manpower/technical skills for the Tanzanian government's food crops and livestock production programs.

3. To provide participant training assistance to the Tanzanian government in selected areas of agricultural manpower training, to meet needs of the Ministry of Agriculture and the parastatals for management and technical skills in positions closely related to food crops and livestock production.

These purposes are seen to be in direct support of an overall sector goal of assistance to the Tanzanian government in the achievement of increased self-sufficiency in the food crops and livestock agricultural subsectors.

In terms of the announced goals and specific purposes, the following are seen as expected project outputs:

1. Manpower

a) Annual student throughput

Ukiriguru	Certificate	- 125
"	Diploma	- 40
Mpwapwa	Certificate	- 110
"	Diploma	- 36

b) Teaching Staff

Degree level trained staff at Ukiriguru	- 13
" " " " " Mpwapwa	- 14
" " " " " Entire MATI network	- 45

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c) Trained Tanzanian government and parastatal staff	
Individuals in key food crops/livestock positions with U.S. training	- 15
2. Facilities	
a) USAID Loan financed houses at Ukiriguru and Mpwapwa	- 9
b) USAID Loan financed tools/equipment/teaching supplies/ library books and misc. aids	See tool list Appendix D, IP Report No. 56, WVU
3. Quality of training at the two MATIs	
a) Revised curricula, lesson plans, training materials	- 4 courses
b) In-service training courses	- MATI and KILIMO staff
c) Requirements analysis of establishing Agricultural Education program at Faculty of Agriculture, University of Dar es Salaam	- Final Report See IP Report No 54, WVU
4. Other	
a) Permanent career service for teaching and administrative staff of MATIs	- for all MATI staff
b) Manpower development and training programs for Ministry of Agriculture staff	- to be determined by consultation
c) Classroom instruction	- 7 contract staff full-time teaching load
d) Advisory/assistance relationship with MATI principals	- 2 contract staff half-time
e) Advisory/assistance relationship to Director of Manpower Development Division in Ministry of Agriculture	- 1 contract staff full-time (C/P)

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REVIEW OF PROJECT ACTIVITIES - JANUARY THROUGH DECEMBER, 1977

INTRODUCTION

The original Project Agreement between USAID and the Tanzanian Treasury was signed by the respective officials on February 12, 1974. At about the same time, Ndugu Henry M. Kasiga was named as the new Director of the Manpower Development Division in the Tanzanian Ministry of Agriculture (KILIMO). The Pro-Ag spelled out in some detail the envisioned sequence of project implementation. The project was hoped to proceed on a three step basis, with some overlap between the steps.

Step I - Planning for Operations, FY 1974-75

The three Special Assistants will arrive (estimated arrival early to mid-CY 1974) and initial planning for project operations, including development of detailed annual work plans and teaching duties for the Special Assistants at Mpwapwa and Ukiriguru. Duties during this period will be focused on assisting Tanzanian staff in:

1. Identification of initial participant training needs in the agricultural training institutes, the Ministry of Agriculture and agriculturally related parastatals. Selection of initial candidates.

2. Appraisal of curricula, teaching aids, facilities, etc. and planning improved training systems.

3. Assistance to the agricultural training institutes in the establishment of qualifications for teaching staff, including the six AID-supplied personnel programmed for Step II.

4. Development of regular schedules of in-service training for agricultural extension officers and training institute technical staff, as well as training for institute administrative staff in budgeting, programming and planning.

5. Identification of equipment to be provided through loan funding, development of specifications, and establishment of a records system for essential follow-on commodities.

6. Development of appropriate amendments to the existing scheme of service for establishing a career teaching and administrative service for the agricultural training system, and submission of such amendments to the Establishments Section of the Principal Secretary's Office, Ministry of Agriculture, for action.

7. Development of terms of reference for a study of the agricultural education and extension training capability of the Faculty of Agriculture, University of Dar es Salaam.

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Step II - Project Operations and Evaluation, FYs 1975-1977

During FYs 1975-1977, AID-provided teaching staff (four at MATI Ukiriguru and two at MATI Mpwapwa) will arrive (estimated arrivals mid-CY 1975) and take up their assigned duties of:

1. Regular teaching of diploma and certificate students.

2. Administrative duties, as assigned.

3. Working with Tanzanian and other AID-provided specialists, in curricular development, developing teaching aids, developing practicals, field training systems, and similar training matters.

4. Working with their institutes and other Ministry of Agriculture and regional field staff in developing short courses and in-service training for both institute staff and other research and extension personnel.

Step II of this project will not be initiated until the amendments to the scheme of service for the agriculture training institute system, as specified in Item 6, Step I above, have been prepared.

After approximately two years of project operation, or by FY 1976-77, a major Tanzanian Government/AID evaluation will be scheduled to determine if new project directions or actions are required. This evaluation will be in addition to annual Tanzanian Government/AID evaluations, which are regular components of this project.

Step III - Consolidation of Project Inputs, FY 1977-80

It is expected that operations in Step III will continue largely as in Step II, with such changes as are indicated by the joint evaluations and with appropriate modifications as training institute participants return and begin their teaching duties. At this stage, AID-supplied staff will provide on-the-job assistance and training newly returned participants. During this period, in-service training for training institute staff and regional and national agriculture field staff will be stressed by AID-supplied technicians.

The nine-man contract team is scheduled to phase down and out during FY 1980, and the project to be completed in FY 1980.

In fact, the project got started approximately one year late and was delayed even further by a lack of suitable housing for project staff. All staff members have been on board during this reporting period, however, and in terms of the original phasing, Step II has been partly implemented during 1977. A report on project activities follows.

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A. CONSORTIUM STAFFING PATTERN

1. Office of International Programs, West Virginia University, Morgantown, West Virginia 26506

The Office of International Programs is an administrative component of the College of Agriculture and Forestry of West Virginia University, located at Morgantown, West Virginia. Throughout this reporting period Dr. Rodger Yeager has served as Director, and has been assisted by Mr. David Harris, Contract Administrator, and supporting secretarial staff.

2. School of Agriculture, North Carolina Agricultural and Technical State University, Greensboro, North Carolina 27411

Throughout this reporting period Dr. William E. Reed, Associate Dean of the School of Agriculture, has served as the project liaison officer.

3. Field Team in Tanzania

No changes have occurred in the Tanzanian field team during this reporting period. The following indicates staff ranks, field responsibilities, and arrival dates in Tanzania:

Name - Rank - Institution	Present Responsibility	Arrival Date
Dr. Robert H. Maxwell - WVU Professor - Agricultural Education	Chief of Party & Special Assistant to Director MDD	17 Feb 75
Dr. Will R. Getz - NCATSU Adj. Asst. Prof. Animal Science	Animal Production Tutor MATI Mpwapwa	1 Nov 75
Mr. John A. Mann - WVU Adj. Asst. Prof. Plant Sciences	Crop Production Tutor & Department Head MATI Ukiriguru	23 April 76
Dr. Lloyd C. Pickett - WVU Adj. Prof. Plant Sciences	Range Management Tutor & Deputy Principal MATI Mpwapwa	6 May 76
Dr. Harvey P. Hermanson - NCATSU Adj. Assoc. Prof. Soil Science	Soil Science Tutor & Department Head MATI Ukiriguru	8 May 76

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Name - Rank - Institution	Present Responsibility	Arrival Date
Mr. Michael A. Kizer - NCATSU Adj. Asst. Prof. Agric. Engineering	Agro-mechanics Tutor MATI Ukiriguru	8 May 76
Mr. Frederick P. Holmes - WVU Adj. Prof. Agric. Education	Extension Tutor & Deputy Principal MATI Ukiriguru	15 Nov 76
Dr. Thomas J. Galvin - WVU Adj. Prof. Animal Science	Animal Health Tutor MATI Mpwapwa	15 Nov 76
Mr. Irving A. Russell - NCATSU Adj. Assoc. Prof. Agric. Economics	Rural Economy Tutor & Department Head MATI Ukiriguru	22 Nov 76

B. CONSTRUCTION OF USAID LOAN-FINANCED STAFF HOUSES AT MATI MPWAPWA & MATI UKIRIGURU

As previously reported, the construction of these houses was in no way a contract responsibility. However, because of problems arising from this effort to provide housing for contract staff, it is felt to be a sufficiently important issue to warrant reporting in our annual progress report. For further background, comments in earlier progress reports may be referred to.

All of the money allocated to the relevant USAID loan has been consumed in this effort, and the final disbursement date on the loan was 31 December, 1977.

The three houses at Mpwapwa have been finished. The quality of work is quite acceptable, and the three contract families stationed at Mpwapwa have lived in the houses for most of the year.

The situation at Ukiriguru is different, and certainly far less acceptable. All five families at Ukiriguru are now living in what we think is permanent housing. Three families are in the USAID loan-financed houses and the other two families are in "permanently" assigned housing in another area of the compound. The other three USAID loan-financed houses have simply been added to the housing pool at the Institute and are occupied by other MATI staff members.

All parties concerned are aware of the poor quality of general construction and interior finishing of the USAID loan-financed houses at Ukiriguru. A cursory examination by even the least informed layman indicates the following among the outstanding examples of poor workmanship: leaky roofs; poor quality facer boards poorly joined on the roofs; inferior placement and quality of ceiling sub-structure; sub-standard quality and fitment of ceiling boards; atrocious interior finishing including built-in-closets and shelving, doors and door frames, and window and screen frames; poor quality interior and exterior plumbing and sanitary

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fitments with leaking ceiling water tanks; and poor quality concrete construction of floors. Unfortunately the houses are physically sited at a point high enough that they are not well served by the gravity water system of the Institute.

A number of meetings were held in the process of terminating the original contractor, attempting to hand over responsibilities to the Regional Engineer in Mwanza, and getting the houses liveable and ready for occupancy. because of the urgency of the housing situation on the compound, most of the families moved into the houses before many of the faults were rectified. The present condition of the houses is, at best, marginal. They will remain a monument (as long as they stand) to the system used in their construction. Communication between the Ministry (COMWORKS) and the region was poor, responsibility for the supervision of construction was never firmly fixed, and the system used for selection of the contractor, supervision and approval of the stages of construction was open to a number of conflicting pressures. Surely there is a lesson to be learned from the Ukiriguru experience, and different procedures will be used for the construction efforts that now face us in project activities.

Maintenance and improvement of the houses is a responsibility of the MATI administration, since government decentralization has terminated the arrangement with COMWORKS for maintenance. It is hoped that most of the rectifications still remaining to be completed can be taken on by the MATI, but financial support for this kind of activity is scant. For some of the improvements needed, project personnel are preparing a request for the use of local project and/or mission trust funds.

C. NEW PROJECTS

1. Farmer Training

It is pleasing to report that the Project Paper on the Farmer Training component of this project was approved by AID/W in November 1977. This was the culmination of two and a half years of preparatory work and we hope to be able to report at least some progress on this phase of the project during the next reporting period.

The Farmer Training PIO/T was hand-carried into Washington in late November, 1977, but to date we have no further word on the selection of a contractor to perform services outlined in the PP. Given the time lags, it is unrealistic to assume that the contractor will be selected and field personnel recruited and gotten to Tanzania before mid-year 1978, at the very earliest. Some preparatory activities are taking place in the field:

a) A supplementary budget is being processed through the Tanzanian Treasury by KILIMO, to allow the two houses and the additional facilities required for the Farmer Training activities to be constructed using local funds. These costs will then be returned to KILIMO on a fixed amount

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reimburseable basis from project monies. In the near future, plans for housing and additions to MATI buildings will be submitted to USAID and REDSO authorities for their approval prior to the actual start of construction activities. It is planned that all of the construction and modifications planned can be undertaken by the maintenance and building crews of the four MATIs involved in the Farmer Training activities. This approach is an attempt to avoid some of the problems experienced with centrally tendered, regionally supervised building contracts.

b) Arrangements were incorporated into the PP and Pro-Ag which will involve KILIMO in the final selection of the contractor as well as contractor personnel for this sub-project.

c) The Project Manager and the Mission have been successful in their efforts to obtain a waiver for the purchase of other than American-made vehicles for use in the Farmer Training activities. This is welcomed news indeed, in terms of operating costs, availability of spare parts, and most importantly the safety of personnel who will be driving the vehicles. For the first time, we shall be able to order right-hand drive models.

d) The selection process for suitable participant training candidates under the sub-project is now underway in KILIMO.

A summary of Farmer Training Project background, concepts, and design, as described in the PP, is included as Appendix A.

2. Department of Agricultural Education & Extension, and Center for Continuing Education in Agriculture at University of Dar es Salaam, Morogoro.

The "Faculty" (for brevity) project is presently stranded. After the initial PP was submitted in November, 1976, AID/W reached a decision that this activity was not related closely enough to the on-going activities of the Manpower Project to be considered as a sub-project. This has necessitated another rewriting of the PP, which at this point is not completed. The Mission hopes to submit the new PP sometime in February, 1978.

The time-lag experienced in implementing this activity is unfortunate. The initial consultants' report was prepared under the Manpower Project and was presented in July, 1975. There has been a great deal of unexplained hesitancy and indecision on the part of both USAID/T and AID/W. While AID/W may not see this project as closely connected with Manpower Project activities, KILIMO sees it as central to the short and long-run success of its efforts in the MATI system. The University of Dar-es Salaam is Tanzania's source of degree-level manpower, and the Department of Agricultural Education & Extension will soon, hopefully, be providing trained teachers for the MATI network and specialized supervisory personnel for the field service in the regions. The Center for Continuing Education in Agriculture is seen by KILIMO as the locus of efforts to keep the whole cadre of senior staff current in their technical background and techniques for application to the Tanzania situation. The prompt

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development of the teaching and in-service capability of the Department and Center is seen as crucial. Over the long run, the role of extension specialists located within the Faculty departments but working with the Center, regions, and districts, is seen as a major contribution to Tanzanian agricultural development. The MATI network is also involved at both ends of the training spectrum: by providing lower and middle level staff for the regions, developing the capability to train more and better students at these levels, and improving the quality of senior teaching staff in the network.

The well-documented need to improve field services in Tanzania impacts directly on both KILIMO and the Faculty. The "Faculty" proposal seems central to our efforts to improve the present agricultural manpower situation. I can only again appeal to senior officials in USAID/T, as I did in the 1975 and 1976 annual reports, to use all the energy and ingenuity available to them to cut the red tape, short-cut the bureaucratic procedures, and get this proposal implemented.

D. PARTICIPANT TRAINING

Fifty-four of the sixty available opportunities for participant training have been filled. Thirty-four long-term participants are now studying in the U.S., and eighteen long-term and four short-term participants have returned to Tanzania and are posted to duties within KILIMO. Two further long-term participants have returned to duties at the University of Dar es Salaam, Faculty of Agriculture. Of the twenty long-term participants who have returned, fourteen are working within the MATI network. We expect twelve long-term participants to return to Tanzania during 1978. The following table summarizes these activities:

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PARTICIPANT TRAINING PROGRAM - AGRICULTURAL MANPOWER PROJECT

	Participants Name	From	Date of Departure	Type of Training and Institution	Date of Return	Where Posted - Utilization
	Direct Funding - Long Term					
1.	V. Mrisho	KILIMO HQ	6/72	Economics B.A. Williams College	6/74	AO - Agricultural Planning, KILIMO HQ
2.	E. Ngaiza	MATI Ukiriguru	12/73	Agric. Engineering B.Sc U. of Missouri	5/75	ATO-Farm Mechanics & Dept Chairman MATI Ukiriguru
3.	A. Senyagwa	MATI Ukiriguru	12/73	Agric. Educ. & Ext, M.Sc. U. of Missouri.	5/75	ATO-Rural Economy & Extension & Dept Chrmn MATI Ukiriguru 6/76-Principal MATI Ukiriguru
4.	A. Mosha	MATI Ukiriguru	12/73	Agronomy M.Sc.	12/75	ATO-Agronomy & Dept Chrmn. MATI Ukiriguru 6/76-Principal MATI Mlingano
5.	F. Mwijage	KILIMO HQ-NDD	9/74	Animal Science M.Sc New Mexico State U.	6/76	ATO-Animal Production Uyole Agric. Center MATI Mbeya 12/77-MATI Maruku, Bukoba
6.	J. Magoti	KILIMO -Regions	12/74	Irrigation Eng. B.Sc. Prairie View A & M	12/76	AO-Arusha Seed Farm

Direct Funding - Long Term

Name	From	Date of Departure	Type of Training and Institution	Date of Return	Where Posted - Utilization
7. M. Shayo	MATI Mpwapwa	6/74	Veterinary Pathology M.Sc. Nairobi Univ.	12/74	Nairobi University was closed, necessitating his return.
		9/75	Veterinary Pathology Auburn University	9/77	ATO-Animal Health MATI Mpwapwa

Contract Funding - Long Term

1. D. Msafiri	KILIMO - Regions	8/75	Range Mgt. B.Sc. New Mexico State Univ.	12/76	ATO-Range Management MATI Morogoro
2. S. Mwakipesile	MATI Tengeru	8/75	Animal Science B.Sc. WVU	1/77	ATO-Animal Production MATI Nyegezi 9/77 MATI Tengeru
3. T Itegereize	MATI Nyegezi	8/75	Agric. Economics B.Sc, NCATSU	5/77	ATO-Agric Economics MATI Mlingano
4. D. Kirumbi	UDSM - FAF	8/75	Animal Science B.Sc. WVU	5/77	Animal Science Lecturer UDSM
5. B. Lawa	KILIMO - Regions	8/75	Crop Production B.Sc. WVU	5/77	RADO Dar es Salaam Region
6. B. Qweyemera	MATI Nyegezi	8/75	Farm Mgt/Agric. Econ.B.Sc. WVU	5/77	ATO Agric. Economics MATI Mlingano
7. S. Sigera	MATI Tengeru	8/85	Dairy Technology B.Sc. NCATSU	5/77	ATO Dairy Technology MATI Tengeru

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Contract Funding - Long Term

	Name	From	Date of Departure	Type of Training and Institution	Date of Return	Where Posted - Utilization
8.	C. Masigara	MATI Ukiriguru	8/75	Agric. Education B.Sc. WVU	5/77	ATO Extension & Agric. Educ. MATI Ukiriguru
9.	L. Mbonika	UDSM - FAF	8/75	Soil Science B.Sc. NCATSU	6/77	Soils Lecturer UDSM
10.	Joseph Lyakurwa	MATI Nyegezi	12/75	Animal Science B.Sc. WVU	8/77	ATO Animal Science MATI Mpwapwa 12/77 Principal MATI Mtwara
11.	I. Swanganda	MATI Nyegezi	8/75	Pastoral Agronomy B.Sc. WVU	8/77	ATO Agronomy MATI Mtwara
12.	N. Sembuli	KILIMO-Regions	8/75	Dairy Science B.Sc. NCATSU	8/77	ATO Animal Science MATI Mpwapwa
13.	N. Musisa	KILIMO-Research	8/75	Soil Science B.Sc. WVU	9/77	RO- Soils A.R.I. Mlingano
						Status
14.	E. Kissawike	MATI Ukiriguru	8/75	Home Economics B.Sc. NCATSU		In Training
15.	B. Makwaia	MATI Mlingano	8/75	Agric. Mechanization B.Sc. NCATSU		In Training
16.	L. Mosha	MATI Ukiriguru	8/75	Library Science B.Sc. WVU		In Training
17.	Jackson Keregero	UDSM - FAF	6/76	Agric. Extension M.Sc. Univ. of Wisconsin		In Training

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Contract Funding - Long Term

	Name	From	Date of Departure	Type of Training and Institution	Status
18.	Amos Mattee	UDSM - FAF	6/76	Agricultural Education M.Sc, Univ. of Wisconsin	In Training
19.	Michael Mziray	KILIMO HQ-MDD	8/76	Agricultural Education B.Sc. WVU	In Training
20.	George Lulandala	MATI Tengeru	8/76	Agricultural Education B.Sc. WVU	In Training
21.	Kapasio Kalemela	KILIMO-Research Ukiriguru	8/76	Agronomy B.Sc. NCATSU	In Training
22.	Marco Noah	KILIMO - Regions	8/76	Agric. Extension Education B.Sc. NCATSU	In Training
23.	Ignace Gwau	MATI Maruku	8/76	Agric. Education B.Sc, WVU	In Training
24.	Gabriel Kasenghwa	MATI Mpwapwa	8/76	Agric. Education B.Sc WVU	In Training
25.	Silas Bolo	KILIMO-Research Mpwapwa	8/76	Animal Science B.Sc, WVU	In Training
26.	Richard Shayo	Uyole Agric. Center-MATI Mbeya	8/76	Agric. Education B.Sc. WVU	In Training
27.	Sebastian Sarwatt	KILIMO HQ-LDD	8/76	Animal Science B.Sc. NCATSU	In Training
28.	Bedda H. Katani	KILIMO HQ-DAP	1/77	Agricultural Economics M.Sc, WVU	In Training

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Contract Funding - Long Term

	Name	From	Date of Departure	Type of Training and Institution	Status
29.	Ildefons Lupanga	KILIMO-HQ - on secondment to ELIMU	1/77	Agricultural Education M.Sc, WVU	In Training
30.	Martha Quentin	UDSM - FAF	1/77	Agronomy B.Sc, WVU	In Training
31.	Francis Shao	KILIMO-Research Ukiriguru	5/77	Plant Pathology/Public Admin Ph.D. WVU	In Training
32.	Charles Chacha	MATI Mpwapwa	8/77	Animal Science/Agric. Education B.Sc. NCATSU	In Training
33.	Michael Ngazi	MATI Mpwapwa	8/77	Animal Science/Agric. Education B.Sc. NCATSU	In Training
34.	Lade L. Msoffe	MATI Mlingano	8/77	Agric. Mechanics/Agric. Educ. B.Sc. WVU	In Training
35.	Mtalyaga Meghji	MATI Morogoro	8/77	Agronomy/Agric. Education B.Sc. WVU	In Training
36.	Michael Tuvana	KILIMO-Regions Mwanza	8/77	Production Agronomy B.Sc. NCATSU	In Training
37.	Escom Manyiri	KILIMO-Regions Mwanza	8/77	Agric. Economics/Land Planning B.Sc. NCATSU	In Training
38.	Robert Mushi	KILIMO-Research Ukiriguru		Agronomy B.Sc. WVU	In Training
39.	Juma Katunda	KILIMO-Research Ukiriguru		Agronomy B.Sc. NCATSU	In Training

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Contract Funding - Long Term

	Name	From	Date of Departure	Type of Training and Institution	Status
40.	Julian Machange	KILIMO-Research West Kilimanjaro	8/77	Pasture Agronomy B.Sc NCATSU	In Training
41.	Daniel Msuya	KILIMO-Research Mpwapwa	8/77	Animal Science B.Sc. WVU	In Training
42.	Rose Tarimo	KILIMO-Research Tanga	8/77	Entomology M.Sc, WVU	In Training
43.	J. Mazeru	KILIMO-Regions Musoma	8/77	Plant Sciences/Pub. Admin. M.Sc. WVU	In Training
44.	Vincent Hiza	MATI Mtwara	8/77	Animal Sciences/Pub. Admin. M.Sc. WVU	In Training
45.	Gaspary Madata	MATI-Research Mpwapwa	8/77	Animal Nutrition Ph.D. WVU	In Training
46.	Johnson Semoka	UDSM	9/77	Soil Science Ph.D. U. of Calif.-Riverside	In Training
47.	K. Ibrahim	MATI Tumbi	12/77	Agric. Ed./Pub. Admin. M.Sc. WVU	In Training

Direct Funding - Short Term and Other

					Date of Return	Where Posted - Utilization
1.	J. Ewiza	KILIMO HQ-MPD	6/74	Educ. Admin/MGT U. of Conn	12/74	Chief Training Officer KILIMO HQ 8/77 Zonal Manager Sisal Corp.

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Direct Funding - Short Term and Other

	Name	From	Date of Departure	Type of Training and Institution	Date of Return	Where Posted - Utilization
2.	J. Malacela	KILIMO HQ Minister	7/77	Study Tour - USA	8/77	KILIMO HQ Minister
3.	F. Shempemba	KILIMO HQ SAO	7/77	Study Tour - USA	8/77	SAO - KILIMO HQ

Contract Funding - Short Term and Other

1.	A. Mwakasonda	KILIMO-Regions Arusha	6/76	Heavy Equipment Mechanic N.Carolina Institute	12/76	AFO-Masai Range Project Arusha
2.	S. Mbise	KILIMO-Research Tanga	8/76	Entomology B.Sc, Oklahoma A & M		In Training

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KILIMO has continued to employ a well-defined procedure for the selection of undergraduate candidates. The results of this procedure, reflected in the quality of returning participants, have been gratifying. A new process has been adopted for the selection of post-graduate candidates, and will be implemented in the coming year.

The participant training program under the project is very much on target and is well received by KILIMO. The goal of sixty participants trained under the project will easily be met during the life of the project.

E. PROJECT VEHICLES AND HOUSEHOLD EQUIPMENT

1. Vehicles

The original project vehicles (two Jeep Wagoneers and one Jeep Pick-up) are now going into their third year. Maintenance and spare parts have been a problem, particularly at Ukiriguru. Two additional vehicles, one each for the project staff at Ukiriguru and Mpwapwa, were included in FY 77 funding. Because of Mission interpretation of a Manual Order, we were required after repeated appeals, to order Chevrolet vehicles. The Manual Order is included as Appendix B. The Manpower Project staff felt strongly that the Mission interpretation was mistaken, and would have preferred to re-order Jeeps. This preference was based on the Jeeps' better performance and efforts already put forth to build up at least a small stock of applicable spare parts. The Chevrolets supposedly were ordered by the Mission in April 1977 but as of January 17, 1978, no word of their shipment has been received. Three further additional vehicles were included in FY 78 funding. At the moment we hope that a waiver on Jeep or Chevys may be obtained, allowing us to purchase other vehicles more suitable for Tanzanian conditions. If that does not seem possible, we will revert to the issue of whether Jeeps or Chevys prevail. It is understood that an AID/W consultant will visit Tanzania in January 1978, to review and discuss with Mission officials the vehicles standardization policy promulgated by the Manual Order referred to above.

A small order of direct-funded Jeep spare parts is somewhere in the shipment process, and a larger order is now being processed in General Services Division. We have utilized direct funds for a small number of replacement tires, and a larger order for local tires is in process at General Services Division. We have used contract funds to fill in the gaps and a shipment of jeep parts through the contract is now in the process of clearance at the port of Dar es Salaam. If the Mission maintains its present policy of ordering Chevys we will have to process a larger order for the appropriate spares in the near future. The initial cost of the two Chevys ordered last April was higher than estimated, and the residual for spare parts was utilized to complete the payments on the vehicles themselves. We may therefore receive the first Chevys with no spare parts whatsoever.

Even though several vehicular problems are reported, the Jeeps provided

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tranport throughout most of the reporting period. Whenever project personnel meet, there is discussion about the vehicles. My personal view is that the Jeeps are quite serviceable vehicles, but they require disciplined drivers and a regular first and second echelon maintenance routine. I appeal to my colleagues to integrate these two features into the pattern of vehicle use on this project.

2. Household Equipment

We have had some problems with household equipment, but in general the appliances are serving nicely. One fridge and one freezer have burned out. Investigation indicates the major cause was low and/or widely fluctuating voltages. Replacement appliances have been available. The Contract Administrative Officer in the General Services Division has recently received a shipment of spare parts for the appliances, thus we expect no major problems in this area in the coming year.

F. CONTRACTOR SUPPORT SERVICES

The quality and quantity of supporting services provided by USAID/T has been abysmally poor since the initiation of this project. The Mission is making a real effort to improve this situation, and we look forward to improved and expanded service from the General Services Division of the Mission. Needless to say, any improvement will be very welcome and will relieve contractors of many time-consuming details that do not fall within their scope of work.

G. CURRICULUM REVISION AND DEVELOPMENT

The team of curriculum consultants requested by the Manpower Development Division of KILIMO arrived in Tanzania during February, 1977. Professor P Vernon Armbrester and Dr. Layle Lawrence developed a series of recommendations for the Division which were accepted by KILIMO and are now in process of implementation. Their major recommendations were that:

1. The Division of Manpower Development should establish a Curriculum Development Section, consisting of three officers and headed by The Chief Training Officer, who should assume additional duties as Coordinator of Curriculum Development.

2. An Office of Curriculum Materials should be created to deal primarily with syllabi preparation and revision and the preparation of teaching materials.

3. An Office of Curriculum Supervision should be organized to work with tutors toward improvement of instruction and to ensure adherence to approved syllabi.

4. An Office of Curriculum Research and Evaluation should be established to conduct pertinent research on the development and

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evaluation of MATI curricula.

The consultants also developed job descriptions, entry qualifications, and scopes of work for all of the recommended positions. The consultant report touched on problem areas of:

a) curriculum development cooperation between KILIMO, the Ministry of Education and the University of Dar es Salaam;

b) possible adoption of national examinations for the KILIMO certificate course;

c) present insecurity and frequent transfers among MATI teaching personnel;

d) recommended levels of training for MATI teaching personnel;

e) compositions and functions of individual MATI curriculum committees;

f) need for reassessment of future middle and high level agricultural manpower requirements;

and

g) dropping of specialized pre-service training at the certificate level and adoption of the new multi-purpose (agro-vet) syllabus for certificate training.

For further details, the Report of the Ministry of Agriculture Curriculum Development Team, IP-58, is available from the International Programs Office, West Virginia University, and from the Ministry of Agriculture, Dar es Salaam.

Curriculum development is a continuous process in the MATI network. This year has seen the revision and adoption of a new two-year diploma syllabus in Crop Production, to be used concurrently at MATIs Ukiriguru and Mbeya (Uyole). This was a joint effort of the teaching staffs at both institutes and personnel from KILIMO headquarters. A copy is included as Appendix C. The Animal Health Diploma syllabus has also been revised, updated, and adopted for use at Mpwapwa. A copy of this syllabus is included as Appendix D. An effort has been started by KILIMO Manpower Development Division staff to revise and extend to two years the diploma syllabi at all institutions. Headquarters staff are working with teaching staff and agricultural industry representatives to extend the syllabi at MATIs Ilonga (Agricultural Nutrition), Tengeru (Horticulture), Mbeya-Uyole (Agricultural Home Economics), and Morogoro (Range Management) to conform with this new policy. A further effort is underway with the staff of MATIs Nyegezi and Mlingano to standardize the Agro-mechanics syllabus now taught at the two institutes. A new

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syllabus is also being developed for the Irrigation diploma under development at MATI Nyegezi.

At the certificate level, this year has been a time of relative calm as nearly all institutions have been using the same multi-purpose (or Agro-vet) syllabus throughout the year. The Examination Officer of the Curriculum Development Section in the Manpower Development Division is hoping to develop a common examination for all institutes using the certificate syllabus. Efforts will begin in January to develop a common certificate-level syllabus for use at Butiama and Usa River to produce artificial inseminators for the expanded field programs of the regions and parastatals, particularly in dairy development. One specialized certificate course in Land Planning remains in operation at MATI Nyegezi.

Along with the development of syllabi, a continual effort is being made to upgrade the quality of teaching and the development of the required practical skills. Efforts to develop teaching manuals, guides, workbooks, and textbooks are moving slowly, but we hope soon to report progress. The development of teaching materials is one of the major activities of all Manpower Project staff.

H. MANPOWER PLANNING

During this reporting period the Manpower Development Division has spent considerable time discussing the agricultural manpower situation in Tanzania. The Director, Ndugu Henry Kasiga, requested a consultant group to come to Tanzania and update a previous evaluation and projection study, the Wamunza Report, assist in the development of a sector-wide agricultural manpower data base, and offer assistance in a number of other manpower-related areas. The original Scope of Work for this team of consultants was developed by the MDD, and is included as Appendix E. This Scope of Work is presently being more fully operationalized.

The consultants will work under the aegis of the Manpower Project, and are scheduled to arrive in the Spring or Summer of 1978 to begin their task. Working in collaboration with counterpart Tanzanian team members, the consultants should be able to produce a draft report by late 1978.

As indicated in earlier comments, the student intake in the MATI network is increasing yearly. Some relevant output figures are included in this report as Appendix F, together with other available agricultural manpower data.

I. NATIONAL AGRICULTURAL LIBRARY SYSTEM PROPOSAL

Dr. Robert F. Munn, Dean of Library Services at West Virginia University, visited Tanzania in 1976 and produced the now famous "Munn Report." This report stimulated a great deal of discussion within and outside of KILIMO, and has been responsible for the National Agricultural Library System proposal. This proposal has now received the blessing and support of both KILIMO and the University of Dar es Salaam. A major donor is still being sought and it is hoped that Tanzanian Government will be in a position to support many of the required local costs through utilization of the shilling account produced by sale of U.S. surplus grains. To have achieved consensus on the desirability of this program is an exciting development, and we hope to have much more progress to report during the coming year.

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Further information on the proposed National Agricultural Library System can be found in Dr. Munn's report Improving Agricultural Library Services in Tanzania, IP 55, which is available from the International Programs Office, West Virginia University, and the Ministry of Agriculture, Dar es Salaam.

J. USAID LOAN-FINANCED TOOLS AND EQUIPMENT

The final completion date for this portion of the USAID loan was December 31, 1977. All but approximately $5000 of the loan was utilized. Because of misunderstandings and poor communication with AAPC, the purchasing agent in New York, we were unable to complete the last transaction for equipment and supplies. Fortunately, all of the commodities ordered from the U.S. are now in the country and cleared from the port. We are waiting for COMWORKS transport to take one last load of equipment to MATI Ukiriguru. The final odds and ends can then be delivered by the Chief of Party.

Transportation of these items to their respective locations has been a problem, in that we have been dependent upon government transport. The Ministry warehouse leaves a good deal to be desired in terms of organization and management, but no significant losses have occurred there. Extended delays at both the port, and Government Clearing and Forwarding Agents have caused considerable water damage to some shipments.

Based on the experience of this commodity loan, I hope that we do not become involved in another similar exercise during the life of this project. The procedure of using AAPC as the United States purchasing agent has its advantages and disadvantages. In general, KILIMO correspondence with AAPC has been indirect (through AID/W). Consequently, turnaround times have been slow and a few misunderstandings have emerged. The whole process is time-consuming and cumbersome. On a few occasions, AAPC simply didn't follow instructions. On the other hand, one must consider the alternatives, and they too are not trouble-free.

Further, as in the case of the USAID loan-financed houses, a clear delineation of the necessary lines of responsibility has never been established - which again has produced a deterrent to speedy implementation of the tasks involved.

K. IDA HOSTELS, TEACHING FACILITIES AND STAFF HOUSING

Through the 3rd IDA Education Project in Tanzania, considerable assistance has been given to both of the project MATIs. All of these facilities are now completed and in use.

L. PROJECT EVALUATION

USAID/T holds an informal project review on a monthly basis. The second Project Appraisal Review (PAR) was completed in May, 1977. While

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the Mission has rated the Consortium in the satisfactory category in terms of our performance against the plan, it is my hope that we will further improve our ratings when the next PAR is performed.

One of my own observations in the performance of PARS is that there seems to be no mechanism for self-evaluation by the Mission. The Mission is, or should be, one of the "action agents" in the on-going activities of all projects in the country, and evaluation of its performance could be a very useful tool in resolving some of the operational difficulties that we all face.

A major external evaluation of the project has been planned by AID/W and USAID/T for some time. It appeared that this review would be completed by November or December of this year, but it has now been postponed until February, 1978. Dr. George Burrill of Charlotte, Vermont and Dr. Robert Meisner of Kansas State University have been named by AID/W to the Evaluation Team. They will be joined in Tanzania by Ms. Hidaya Mlege, Principal of MATI Morogoro, who will assist in the collection of field data. The U.S. team members are scheduled for pre-departure orientation at both WVU and AID/W. Their reports should be available by mid-March, 1978.

M. CONSORTIUM VISITORS

In late July Dr. Rodger Yeager, Director of International Programs at West Virginia University, arrived for a three week working visit. His visitation schedule included relevant officials at both KILIMO and USAID/T as well as the staffs at MATIs Mpwapwa and Ukiriguru.

There were no executive visits during this reporting period.

A full report of Consortium personnel arrivals and departures is included as Appendix G.

J. CONSORTIUM FIELD STAFF ACTIVITIES

Field staff activities are closely related to the individual Plans of Work which are submitted annually. The 1977-1978 Plans are attached to this report as Appendix H. Because of the variety of teaching schedules undertaken by the team members, it has only been possible to hold one Team Meeting per year. During the recent Team Meeting, it was decided that individual progress reports need not be incorporated per se into this Project Progress Report. In this section, I shall summarize the contents of the individual progress reports.

Mpwapwa

This reporting period has seen a great deal of progress and consolidation at MATI Mpwapwa. The year began in confusion, resulting from the move of the first year students from MATI Morogoro to the Mpwapwa site. Throughout the early part of the year modifications were made to the

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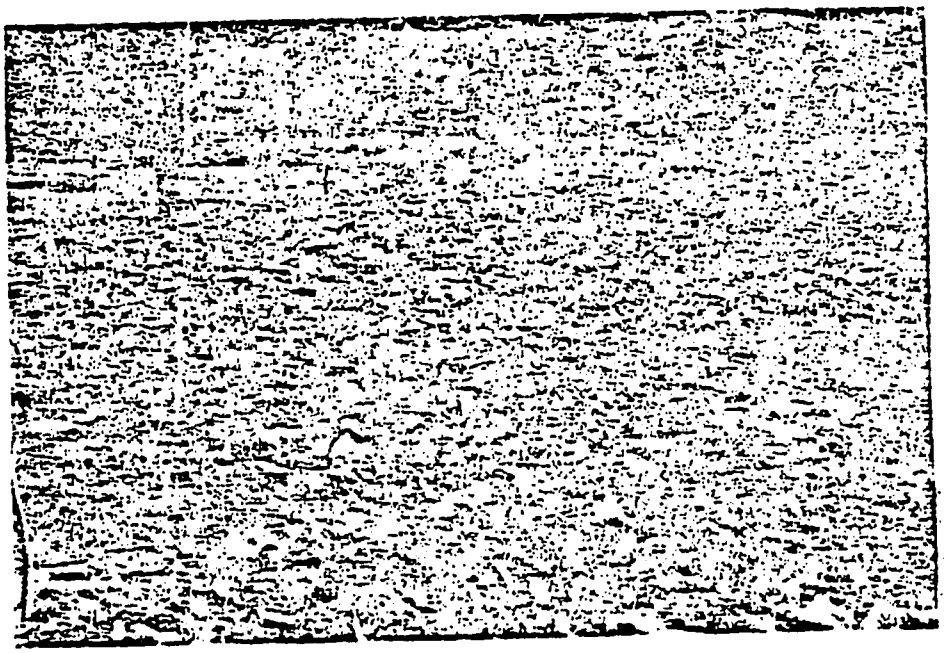
new facilities; classrooms had to be prepared for occupancy and furniture procured for teaching quarters and housing — a general readiness campaign was underway. There was a shortage of qualified teaching staff, and teaching responsibilities and supervision of practicals were somewhat haphazard. By mid-year, many of these difficulties had found at least temporary resolution and the second half of the year was considerably more routine and satisfying. This is not to say that continuing efforts were not made to establish and organize laboratory facilities, demonstration shambas, workshop facilities, a bakery and the poultry unit; but the daily deadlines of the earlier part of the year were relaxed to weekly ones.

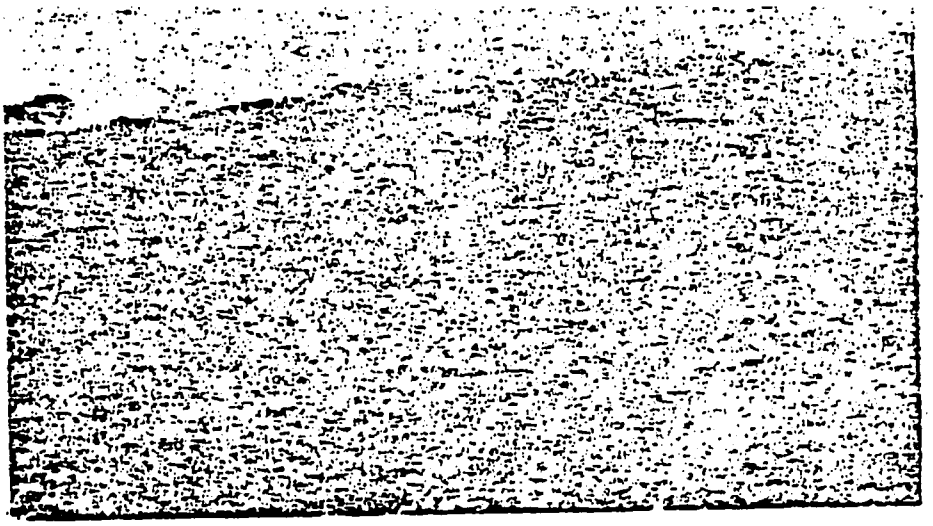
All three members were present at the Institute throughout the year, save for a short period of R & R for each family. The group has enjoyed a harmonious working and social relationship with the MATI staff, and each member has been quite busy with his teaching and advisory/administrative duties, procurement of supplies and teaching equipment for the diploma and certificate courses, assistance in the settling-in process for students and new staff, and with curriculum, lesson plan, and staff development work.

The group reports its general satisfaction with the improvement in quality of instruction. The MATI teaching staff is greatly improved in both quality and quantity (eight in July, 1976 compared with forty-plus at the moment). Virtually all classes are now being met, as compared with 30% missed in mid-year 1976. A great deal of progress has been noted in the development of practicals and lab activities; lesson plans are much better developed by the teaching staff, and a regular testing schedule is in effect. Early morning practicals are still irregular, mainly because of transport problems. Some practicals are still conducted in a rather casual manner, some tutors are probably teaching at too high a level for proper student comprehension, and most of the teaching staff do not provide the variety of audio-visual support desired. All of these problems represent goals for improvement in 1978. A new principal, Ndugu J. B. Ndunguru, reported for duty and has greatly stabilized the administration of the Institute.

Pickett has taught extension methods theory and organization and management, and has handled the irrigation practical during the year. His teaching responsibilities have diminished during the year, as he has increasingly concentrated on his advisory/administrative responsibilities. He has served throughout this reporting period as Deputy Principal and Coordinator of Studies at MATI Mpwapwa. The development of a "system" for the administration of the Institute has been a major activity (test schedules, class attendance by both teaching staff and students, initiation of transcript procedure, indenting for and obtaining needed staff, establishment of staff meetings, student orientation, academic committees, student grade and attendance records, grade reporting procedures, teacher



Student plots in MATI Mpwapwa's new horticultural farm. The farm abundant supplies tomatoes and cabbages to MATI students, teaching staff, and resea personnel.



MATI Mpwapwa students and staff harvesting maize at their production fa on Kiboriani Mountain.

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evaluation, etc). He has initiated a series of eight in-service training sessions for the teaching staff, in an effort to upgrade the quality of teaching and evaluation. He has served as Chief Examination Officer, Chairman of the Disciplinary Committee, Editor of the Mpwapwa Livestock Research Institute's quarterly journal Jihabarishe Ufagaji (Progressive Stockman), which was published regularly this year for the first time. He is a member of the Working Committee for the construction of the second student hostel at MATI Mpwapwa. He again attended and presented papers at both the Annual Training Conference and the National Council for Agricultural Education held at MATI Tengeru, Arusha, in August, 1977.

Galvin has taught from 15-20 hours per week throughout the year and has been very busy trying to accumulate the teaching specimens and develop the new labs to an acceptable standard for diploma students. His main areas of teaching have been microbiology, parasitology, and general animal health, medicine and therapeutics. He has served throughout as head tutor in the Parasitology/Microbiology section of the Institute. Tom's major responsibilities have involved teaching, but he has also spent much time in procuring new equipment and supplies for the diploma program. He has served as a consultant on disease problems at the Kitulu Ranch, and has investigated various animal health-related problems in the Arusha area.

Getz completed his sixth year in Tanzania during this reporting period, and was occupied with classroom teaching activities, preparation of teaching notes, lesson plans, resource materials, classroom visuals, as well as library organization and development and work with demonstration livestock and beef cattle research activities. Will has taught the swine production unit to the 2nd year veterinary certificate class, animal production practicals and beef production unit to first year multi-purpose certificate students, and the livestock production in warm climates unit to the animal health diploma class. As Chairman of the Library Committee, Will has been involved in the physical movement of the Mpwapwa Library, which serves both the research and training staff. The new library is in one of the buildings provided through the third IDA Project, and it serves as a very suitable facility. The move has involved considerable activitity in providing new furniture for the library, cataloguing, recataloguing, and making index cards for all holdings. From March, a Tanganyika Library Services trainee has been assisting in the library program at Mpwapwa. Will has been able to acquire eight head of beef/dual purpose cattle, for the purpose of demonstrating to students what healthy, well-fed and well-bred cattle look like. The diploma students have been involved in the care, feeding, management and training of these cattle. At mid-year, Getz' responsibility for limited beef research was terminated abruptly by the station. While this decision gave him more time to finish compiling and writing up the results of the research already completed and more time for teaching, it removed several herds of cattle from his management, which were also used for the benefit of students in the Institute. Will has concentrated on putting together a complete

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teaching program for the livestock production section of the diploma syllabus, including hand-outs, teaching notes, and visuals.

Ukiriguru

All five members have served at the Institute throughout the year, except for a brief period of R & R for each family. Staff turnover at the Institute has not been as severe during this reporting period as in the past. Being an old, well-established Institute, Ukiriguru has not experienced the many settling-in problems that have occurred at Mpwapwa, but completion of new staff housing and the construction of a farm center have comprised major activities. The teaching staff numbers 36, including certificate, diploma and degree holders. Project members have integrated satisfactorily into the total staff. At the moment, there are 106 certificate level students following the multi-purpose syllabus, 87 crop production diploma students, and 16 veterinary Field Assistants engaged in a short (three months) retraining course in general agriculture. During the year, 100 certificate graduates, 39 diploma graduates and 16 veterinary retrainees finished their courses. All of these candidates were immediately posted to the regions, or to KILIMO, for employment in extension, research, training, or at the KILIMO parastatals. Ndugu Abnari Senyagwa has served as principal at Ukiriguru throughout this reporting period. Senyagwa was one of the earlier participants under the Project and returned to Head of Department duties. Subsequently he was named Principal and has been instrumental in strengthening the Institute.

Holmes has been fully occupied throughout this period with duties as Deputy Principal for the Institute, Coordinator of Studies for the diploma groups, and course tutor for organization and management of the agricultu planning and advisory services section of the diploma syllabus. As a result of a workshop held in Dar es Salaam, a new syllabus has been used in presenting the organization and management material to students. His classroom teaching has averaged about 8 periods per week. A total of eighteen teaching guides/handouts have been developed for future use, and a number of visuals have been prepared. Five sets of proceedings from class seminars have been developed as resource materials and are on file in the library. As Deputy Principal, Fred has assisted the Principal in management responsibilities of planning, controlling, organizing, and eva ating the activities of the Institute. This has been a difficult assignment, due mainly to the extreme shortage of both recurrent and developme funds, and planning has had to remain very flexible. In addition, Fred has served as chairman of the Library Committee, the Disciplinary Commit and the Academic Committee. The Library has been moved to different facilities during the year, and it now accommodates up to 80 persons at a time and offers services 10 hours per day. The service hours are quite adequate, but much remains to be accomplished in the acquisition of reference books. The library has received a large number of new titles during the year, and a large number are on order. A good deal of progres can be noted during the year in the provision of basic information to

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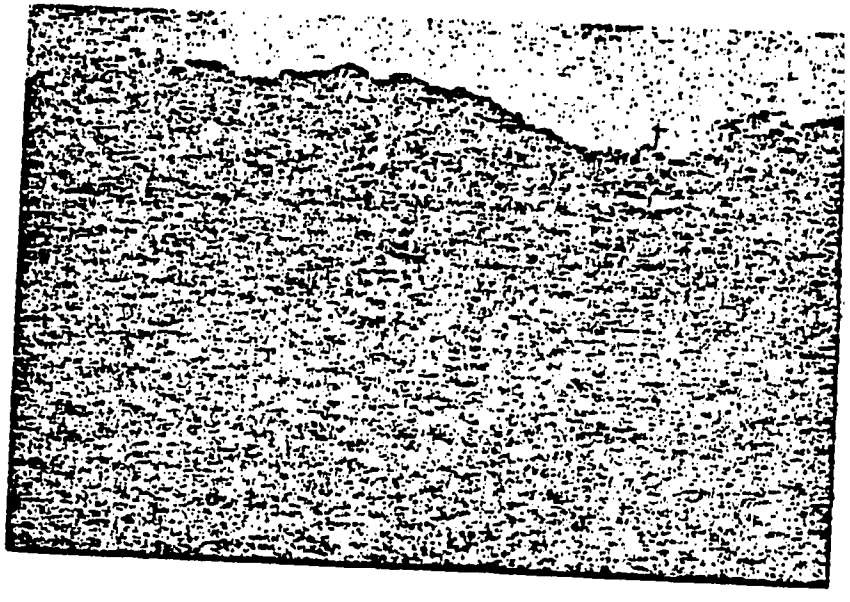

Student horticultural plots at MATI Ukiriguru, which the students maintain on a self-reliant basis.

MATI Ukiriguru students at work in the experimental plots which they designed and prepared as part of the field experimentation syllabus.

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staff and students regarding their duties and responsibilities. A handbook is now being organized for both staff and students, as a project of the Disciplinary Committee, and it will be ready for use by mid-1978. The Academic Committee has held six meetings during the year and one of its accomplishments was the initiation of a field practical program for the diploma students. The basic idea of the field practical is to provide applied field experience to support the teaching programs at the Institute. Contact through questionnaires with the institutions conducting the practical training was necessary, to obtain basic data and establish the necessary relationships for supervision, evaluation, and follow-up. Staff members were assigned to visit students during the field practicals and conduct informal evaluations. Field practical kits were made up and provided for each student. The participating students wrote field practical reports of their experiences for final evaluation. Each student subsequently conducted a short seminar on his experiences for the benefit of the class. Plans are presently underway for a similar exercise for the 1977 diploma students, subject always to availability of funds. Two other activities of the Academic Committee bear noting; the self-reliance production program and the extension education program for village assistance. All students are programmed for participation in the self-reliance production program. Under the overall coordination of two tutors, each student is given a small area to cultivate and is issued the necessary agronomic inputs, tools, and record sheets. Daily supervision is handled by assigning a tutor to each six students, who serves as a consultant on production problems and evaluates the students' participation in the program. The 1976 diploma students are performing the actual seedbed preparation and planting on the production farm. In addition, each of the diploma students maintains a horticultural plot. The extension effort in the villages involves the 1976 certificate students, who visit the villages twice each week. The supervising tutor from the MATI visits every two weeks. Each student is assigned to an individual farmer. Thirty students are thus involved. The remaining six students in the 1976 class are assigned to a primary school near the MATI, where they teach agriculture to the primary students and supervise work in the school shamba twice weekly. These programs are moving nicely, and the farmers and students are working together very well. Holmes also serves on the Farm Planning Committee, which is developing plans to increase acreage and student involvement in the entire farm production program. Fred Holmes was again involved in the National Training Conference and the annual meeting of the National Council for Agricultural Education, held in Arusha at MATI Tengeru in August.

Hermanson is teaching 11 periods per week in soil science and serves as head of the Land Use Department. In addition, he teaches one period per week in soil and water conservation for the diploma 1976 students, and four periods per week in rice irrigation practicals. Harvey has developed student instruction sheets for pH meter and calorimeter use in the labs, has finished eight handouts for student use in soils, and has produced twelve information sheets for lab study of soils. He is continuing to collect

visual and museum samples for use in the soils section of the diploma syllabus. Harvey serves on the Library Committee, Farm Planning Committee, Academic Committee, and is patron to the Boxing Team. The Land Use Department is presently trying to complete a contour map of the Ukiriguru farm, complete with accompanying soil analyses.

Kizer teaches both theory and practicals for the agro-mechanics section of the syllabus, for diploma students. This section covers farm power, farm machinery, farm structures, draft animals, workshop technology, and domestic water supply. In addition, he has taught 40 hours of irrigation principles in the Land Use Department, and supervised the tractor driving component of the crop production practicals. In the evenings after classes, student groups drive the tractors in the Institute practical fields for two hour sessions. Mike reports virtually 100 per cent attendance at these after-hours sessions. Mike serves as secretary for the field practical program, where he is involved in the selection of prospective placement sites, student placement for practicals, follow-up on student field performance, and evaluation of final student reports. He is also a member of the Farm Management Committee and serves as secretary for the long-term farm development group sub-committee. This committee determines the yearly cropping patterns, soil and water conservation measures to be taken, road and fence maintenance, pasture establishment, and other production matters on the school farm. Kizer reports that the agro-mechanics department should move into new quarters at the Farm Center during the coming months, where facilities will be more adequate for student activities, security of hand tools, and the department in general. Kizer and Mann, together with the 1976 diploma students, have begun construction of a crop science laboratory and screen house. This work is being performed on a self-help basis, in practical sessions of the agro-mechanics classes. Recently Mike has been asked to assume duties as the workshop manager at the station, mainly involving the assignemnt of duties to workers, ordering of spare parts, and check-out of completed work by workshop staff. This has been a rather frustrating and dissatisfying assignment, and under Institute conditions should probably be given to a Tanzanian member of staff. The Agro-Mechanics Club has selected Mike as patron. The club's activities include field trips to local industries, practical workshop assignments such as engine trouble-shooting, presentation of educational films, and of course the annual picnic at the patron's house prior to graduation. Mike also acts as head of the department in the absence of Ndugu Ngaiza, an early participant on the Manpower Project who has returned to Ukiriguru as head of the agro-mechanics department.

Mann has been teaching 7½ periods of thoery and 9 periods of practicals in crop production each week throughout this reporting period, and serves as head of the Crop Production Department. He has taught the field experimentation, plant pathology, statistics, plant anatomy, physiology and biochemistry, and genetics sections of the crop production diploma syllabus. His chief effort regarding practicals has been to achieve more student involvement in actual farm work, in both small-scale as well as large-scale farm operations. Small-scale activities include farm experiments and the horticultural project, referred to earlier in this section, where each student has 20 square meters to prepare, plant, fertilize, water and harvest.

It was planned for the diploma students to be involved in the preparation and planting of the 40-hectare production farm, but a number of problems have affected the plan, mainly involving a shortage of tractors in good running condition. The early crop of sorghum was not planted, but hopefully a January planting will be achieved of both maize and sorghum. The development of teaching materials in theory has proceeded well, and materials are completed for plant anatomy and morphology, genetics, plant physiology, plant pathology, biochemistry, and statistics. A similar effort is underway including all members of the department, but the response has been slow. Most practical instruction has involved field work and is still to be written up, but practicals in the lab are being recorded and John hopes to produce a lab manual in the future. He has produced a photomicrography series on plant anatomy for student use, and hopes to do a similar series on plant pathology, entomology and other fields. John serves as chairman of the sub-committee on Long Range Farm Planning, and is a member of the Library Committee, Academic Committee, and Farm Planning Committee. He was involved in the field practical program planning, student visitation, and follow-up reporting.

Regarding activities of the Long Range Farm Planning Committee, the Institute is now turning its steep hillsands into permanent pasture with interplanted trees. On the remaining part of the old farm, a crop rotation system of cotton, cowpeas, and sorghum will hopefully improve soil conditions there. The new land being taken under cultivation will initially be cropped in maize and sorghum. As mentioned earlier, John and Mike are working together to establish a crop science laboratory and screen house, which is partially financed with mission and project trust funds. The building has been sited, and the actual construction is underway as a practical exercise for students in the 1976 diploma class. Hopefully this exercise will be completed by the time the class graduates at midyear. The central emphasis of the diploma course is crop production and it is hoped that a major emphasis can be placed on the activities of the crop production department.

During the year, each department revised and up-dated its relevant sections of the crop production syllabus. At midyear Fred Holmes and John Mann together with other MATI staff, participated in the final revisions of the crop production syllabus. The syllabus has been approved by Director of Manpower Development and is in common use at MATI Mbeya (Uyole) and MATI Ukiriguru.

Russell has been teaching both theory and practicals in agricultural economics during this reporting period, and serves as head of the Department of Rural Economy and Extension. Efforts in the department are continuing to produce a brochure and an agricultural economics workbook for students. The dearth of crop and livestock cost and return data has also prompted a move to collect these items for the five-year period 1975-80, in cooperation with Ndugu Mbaga, the Ukiriguru farm manager. These will provide applied operational training for students and will also determine how economically self-sufficient the various projects at the Institute really are. Irving is heading the committee at MATI Ukiriguru to make preparations and arrangements for the Annual Training Conference and

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the National Council for Agricultural Education, which will be hosted by the Institute in August, 1978. Together with this administrative preparation, some landscaping and road repair are also underway. With Harvey Hermanson, Irving is looking at the feasibility of a Gobar gas plant for Ukiriguru, at the request of the Director of Manpower Development.

Dar es Salaam

An overview of my own activities has already been provided. I have continued to maintain an office in the KILIMO headquarters building, and have spent an increasing amount of time in curriculum revision and development activities, in cooperation with Ndugu F. K. Kaijage of the Manpower Development Division. The participant selection and departure procedures, administration of the USAID loan programs, on-going administration and support of the project team, and various duties assigned by Director of Manpower Development have all continued to consume a good deal of time.

We were all sorry to see Ndugu Henry Kasiga, Director of the Manpower Development Division, depart at the end of the year for an assignment with UNICEF in Sudan. We wish him godspeed, and he goes with our thanks for the tremendous efforts he has put into the development of the MATI network over his four year tenure as Director. As of January 1, 1978, we welcome Dr. John Mchechu as Acting Director, and we pledge our best efforts to build on the good working relationship enjoyed in the Ministry and at the MATIs.

All members of the Agricultural Manpower Project Team have been fully occupied this year with the duties and responsibilities foreseen in their job descriptions and the PP. The variety and scope of their extra-curricular activities is also evident. Most of what has been reported thus far indicates the positive side of daily project activities, and it seems now appropriate to touch upon some of the problems which affect project implementation, team morale, and overall effectiveness.

K. PROBLEM AREAS

The following problem areas are not listed in order of priority, but seem important enough for a short exposition.

1. Financial support, or the lack of it, has been and will continue to be a major problem for the MATI network. Practical training of any kind is always more expensive than academic training. Tools, equipment, and field work are essential if practical training is to be successful. Treasury officials seem to have little appreciation for this fact, and consequently total amounts are often insufficient to present the programs required for producing quality graduates of the MATI network. Further, the quarterly disbursement system used often serves as a counter-incentive for the proper utilization of the available funds. Because of uncertainty

about availability of funds throughout the year, first, second, and third quarter funds are often less than their proportionate share and fourth quarter brings a large amount, perhaps too late in the quarter to be of use. This situation presents a number of problems to principals, because their estimates are based on the provision of equal quarterly amounts, even though this hardly fits the rhythm of their operations. Large amounts of money authorized in the last quarter defy proper utilization. Often there is simply nothing to buy that is either needed or can be stored in the quantity or quality that the disproportionate funds could buy. The general problem of financial support has been further exacerbated by the proliferation of training institutions since 1972. For a variety of reasons, most of them completely beyond the control of principals, the number of Institutes has increased from three in 1970 to the present twelve. Naturally, the smaller Institutes consume more funds which are disproportionate in terms of the Institutes' service to the agricultural sector. Consolidation of the Institutes would contribute to a better utilization of available funding, available staff, and training equipment.

2. Staffing and Staff Utilization. The proliferation of MATI Institutes and program offerings has also contributed to the shortage of the more specialized (and scarce) degree level teaching staff. Fewer Institutes and larger student bodies would certainly lead to a much better utilization of the available teaching staff. The Manpower Project, through the participant training program, is making a major contribution in terms of upgrading staff, but the increasing staff needs of the new MATIs make overall progress in staff development slow for any individual MATI. Large staffs reside at each MATI, but higher level important posts are often vacant. The situation prevails in KILIMO as well. Both the Manpower Planning and Professional Training and Recruitment Sections have been understaffed throughout this reporting period, and the Chief Training Officer post has been vacant for five months. General guidelines for the MATIs specify that teaching staff, as opposed to operational services staff, should be assigned actual teaching duties for twenty hours per week. If one divides the total number of class hours taught by the members of teaching staff, no single MATI reaches the suggested number of teaching hours per staff member. This problem must be confronted if we are to make the best use of our limited resources.

3. Teaching of Practical Skill. Skill teaching requires repetition, many consumable supplies, and in most cases a variety of materials and equipment. Even given small sizes, dedicated teachers, and easily available facilities, good skill teaching is difficult. In the revision of syllabi and development of a standard for the level of skill acquisition, we probably have been kidding ourselves, and more unfortunately the students as well, when we talk of competence and confidence levels of skill acquisition. It would probably be more realistic to speak of a "some idea" level of skill acquisition, because this more truthfully describes the accomplishment of most students. Existing class size (teacher-pupil ratio), class time, availability of teaching materials (which often includes live-

stock), senior teaching staff, available transport, and finance all mitigate against successful skills acquisition in the MATI network at the moment. KILIMO has been severely criticized throughout the country for producing officers who are poorly trained in practical skills, yet the MATI system tends to place more poorly trained teaching staff in charge of practical training. For example, degree-trained teaching staff often have no practical teaching responsibilities, whereas diploma-level, and frequently certificate-level, staff carry nearly the whole load of this important task in the system. It would seem that if practical training is the weakest part of the training program, then the best-trained staff available should be focused on practicals. Something of tradition is involved here which must be overcome if the quality of practical skill acquisition is to improve.

4. Transport and Communication. Getting people, things, and ideas from one place to another is a much more serious problem now than when the project was envisaged, or even when we began implementation two years ago. With the demise of East African Airways, air travel over the long distances has been disconnected and uncertain. The lack of concerted effort by government to upgrade and maintain the existing road network has complicated bus and lorry transport, which in turn has complicated student intakes, speedy transfers, and normal movements of commodities in the country. The necessary import restrictions imposed by government in the last few years have further compounded the transport problem in that new vehicles are few and spare parts difficult to import and stock. Most of these factors have also affected the rate of mail delivery, and this contributes to a slow turnaround of correspondences, and people not receiving messages in time to attend meetings, interviews, or respond to calls for urgent information. Given the necessary governmental system of files and registries, inter-ministrial, inter-department and KILIMO-parastatal communication is cumbersome. This additional factor further complicates the free and easy flow of communication between administrators and field staffs. Only a concerted effort will ease these problems.

5. Work Discipline. Repeated calls have been made by Tanzanian political leaders for an improvement in the country's work discipline. This appeal particularly applies, within the MATI network, to the supporting services of the Institutes - typing pools, registry clerks, messengers, and drivers. It is frustrating and dysfunctional for senior officers to waste time as a result of problems caused by improper discipline among their supporting staff. This problem is evident throughout the civil service.

6. Overall Planning. Given the above-mentioned constraints, it is obviously very difficult to exercise good planning in the conduct of the training network. Consequently, altogether too many decisions are made on an ad hoc and crisis basis. This is particularly defeating to principals, whose planning decisions on Institute calendars, expenditures, and activities, are nullified by hastily made and unexpected decisions at higher levels.

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7. Self-Reliance Activities. The present heavy emphasis on self-reliance activities in all of the institutions of the country is often a deterrent to efficient training programs. There exists only so much time in a week, and what is used for the repetition of self-reliance activities can only be lost for the introduction of new ideas and acquisition of new skills. On the other hand there is only so much financial support available, and what is produced through self-reliance activities can add to that available from central government. Unfortunately, no acceptable way has been found to initiate self-funding or establish a revolving fund, to allow self-reliance activities to operate freely. Presently all funds accumulated through self-reliance activities are turned back to Treasury, leaving principals with only a hope that good performance will assure a larger approved estimate for the MATI during the coming year. Experience to date has not shown this hope always to be fulfilled.

8. Miscellaneous. Development of libraries and librarians is a major concern to the MATI network. Any training or research institution begins very quickly to wither away if a continuous effort is not made to improve the store of information available to teaching staff, researchers, and students. The development of the National Agricultural Library proposal is certainly a start in the right direction, if this problem is to be solved.

Frequent transfers of personnel are unavoidable in the Tanzanian setting, so they are willingly accepted, but do produce a negative effect on project implementation and agricultural development in general.

One other problem that may have particularly affected the Manpower Project is the lack of any definite working relationships with counterpart Tanzanian staffs, except those involving the Team Leaders and the Chief of Party.

These problems are not unexpected or unusual, but most are serious and directly connected with the development of the MATI network and its ability to provide an ever-increasing number of better-qualified certificate and diploma holders for the agricultural development of Tanzania.

This has been a good year for the Project, and we are pleased to report our progress. Much remains to be undertaken, but we are moving in the right direction.

ANNEX 10

TANZANIA AGRICULTURAL MANPOWER PROJECT PROGRESS REPORT, JANUARY—DECEMBER, 1978

Submitted by

Robert H. Maxwell
Chief of Party

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West Virginia University
Morgantown, West Virginia

North Carolina Agricultural and Technical State University
Greensboro, North Carolina

Contract Report USAID/Afr.-C-1067
WVU Office of International Programs Report No. 60, April, 1979

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THE AGRICULTURAL MANPOWER PROJECT - A BRIEF DISCRIPTION

The initial Project Agreement between Tanzania and USAID was signed on 12 February 1974. The contract to provide services under this Project Agreement was awarded to a consortium of West Virginia University and North Carolina Agricultural and Technical State University. On behalf of the Consortium, Dr. James G. Harlow, then President of West Virginia University, signed the contract with AID/Washington on 11 November 1974. Project implementation was visualized in a three-phase sequence and included the following major project purposes:

1. To assist the Tanzanian Government in the overall development of its entire sub-professional (technical) and professional agricultural training programs/activities.

2. To assist the Ministry of Agriculture in strengthening two existing diploma/certificate institutions (Ukiriguru and Mpwapwa), by developing practical applied and operational training capabilities focusing on junior and intermediate level staff who are expected, over time, to provide manpower/technical skills for the Tanzanian Government's food crops and livestock production programs.

3. To provide participant training assistance to the Tanzanian Government in selected areas of agricultural manpower training, to meet needs of the Ministry of Agriculture and the parastatals for management and technical skills in positions closely related to food crops and livestock production.

These purposes were seen to be in direct support of an overall sector goal of assistance to the Tanzanian Government in the achievement of increased self-sufficiency in the food crops and livestock agricultural subsectors.

In the terms of the announced goal and specific purposes, the following are seen as expected project outputs:

1. Manpower

a) Annual student throughput - Ukiriguru Certificate - 125
" Diploma - 40
Mpwapwa Certificate - 110
" Diploma - 36

b) Teaching Staff

Degree level trained staff at Ukiriguru - 13
" " " " " Mpwapwa - 14
" " " " " Entire MATI network - 45

c) Trained Tanzanian government and parastatal staff

Individuals in key food crops/livestock positions with U.S. training — 15

2. Facilities

a) USAID Loan financed houses at Ukiriguru and Mpwapwa — 9

b) USAID Loan financed tools/equipment/teaching supplies/library books and misc. aids — See tool li Appendix D, IP Report N 56, WVU

3. Quality of training at the two MATI's

a) Revised curricula, lesson plans, training materials — 4 courses

b) In-service training courses — MATI and KILIMO staff

c) Requirements analysis of establishing Agricultural Education program at Faculty of Agriculture, University of Dar es Salaam — Final Repo See IP Report No. 54, WVU

4. Other

a) Permanent career service for teaching and administrative staff of MATI's — for all MATI staff

b) Manpower development and training programs for Ministry of Agriculture staff — to be determined by consultation

c) Classroom instruction — 7 contract staff full time teaching load

d) Advisory/assistance relationship with MATI principal — 2 contract staff half time

e) Advisory/assistance relationship to Director of Manpower Development Division in Ministry of Agriculture — 1 contract staff full time (C/P)

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REVIEW OF PROJECT ACTIVITIES - JANUARY THROUGH DECEMBER, 1978

Introduction

The original Project Agreement between USAID and the Tanzanian Treasury was signed by the respective officials on February 12, 1974. At about the same time, Ndugu Henry M. Kasiga was named as the new Director of the Manpower Development Division (MDD) in the Tanzanian Ministry of Agriculture (KILIMO). The Pro-Ag spelled out in some detail the envisioned sequence of project implementation. The project was hoped to proceed on a three step basis, with some overlap between the steps.

Step I - Planning for Operations, FY 1974-75

The three Special Assistants will arrive (estimated arrival early to mid-CY 1974) and initiate planning for project operations, including development of detailed annual work plans and teaching duties for the Special Assistants at Mpwapwa and Ukiriguru. Duties during this period will be focused on assisting Tanzanian staff in:

1. Identification of initial participant training needs in the agricultural training institutes, the Ministry of Agriculture, and agriculturally related parastatals. Selection of initial candidates.

2. Appraisal of curricula, teaching aids, facilities, etc.; and planning improved training systems.

3. Assistance to the agricultural training institutes in the establishment of qualifications for teaching staff, including the six AID-supplied personnel programmed for Step II.

4. Development of regular schedules of in-service training for agricultural extension officers and training institute technical staff, as well as training for institute administrative staff in budgeting, programming, and planning.

5. Identification of equipment to be provided through loan funding, development of specifications, and establishment of a records system for essential follow-on commodities.

6. Development of appropriate amendments to the existing scheme of service for establishing a career teaching and administrative service for the agricultural training system, and submission of such amendments to the Establishments Section of the Principal Secretary's Office, Ministry of Agriculture, for action.

7. Development of terms of reference for a study of the agricultural education and extension training capability of the Faculty of Agriculture, University of Dar es Salaam.

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Step II - Project Operations and Evaluation, FY 1975-77

During FY 1975-77, AID-provided teaching staff (four at Ukiriguru and two at Mpwapwa) will arrive (estimated arrival mid-CY 1975) and take up their assigned duties of:

1. Regular teaching of diploma and certificate students.

2. Administrative duties, as assigned.

3. Working with Tanzanian and other AID-provided specialists, in curricular development, developing teaching aids, developing practicals, field training systems, and similar training matt

4. Working with their institutes and other Ministry of Agricultu and regional field staff in developing short courses and in-service training for both institute staff and other research and extension personnel.

Step II of this project will not be initiated until the amendments to the scheme of service for the agriculture training institute system, as specified in Item 6, Step I above, have been prepared.

After approximately two years of project operation, or by FY 1976- a major Tanzanian Government/AID evaluation will be scheduled to determ if new project directions or actions are required. This evaluation wil be in addition to annual Tanzanian Government/AID evaluations, which ar regular components of this project.

Step III - Consolidation of Project Inputs, FY 1977-80

It is expected that operations in Step III will continue larg ly as in Step II, with such changes as are indicated by the joint evaluations and with appropriate modifications as training institute participants return and begin their teaching duties. At this stage, AID-supplied staff will provide on-the-job assistance and train newly returned partic cipants. During this period, in-service training for institute staff and for regional and national agriculture field staff will be stressed by AID-supplied technicians.

The nine-man contract team is scheduled to phase down and out during FY 1980, and the project to be completed in FY 1980.

The project in fact began nearly one year late, and was delayed even further by a lack of suitable housing for project staff. All staff members have been on board during the first half of th s reporting perio and we have had two vacant positions during the last half of the period. The project is now in Step III of the original plan, with the mid-projec evaluation having been completed. A report on project activities follow

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A. CONSORTIUM STAFFING PATTERN

1. Office of International Programs, West Virginia University, Morgantown, West Virginia 26506

The Office of International Programs is an administrative component of the College of Agriculture and Forestry, West Virginia University. Throughout this reporting period Dr. Rodger Yeager has served as Director and has been assisted by David Harris, Contract Administrator, and supporting secretarial staff.

2. School of Agriculture, North Carolina Agricultural and Technical State University

Throughout this reporting period Dr. William E. Reed, Associate Dean of the School of Agriculture, has served as the project liaison officer.

3. Field Team in Tanzania

Several changes have occurred in the Tanzanian field team during this reporting period, which may be summarized as follows:

Name - Rank - Institution	Present Responsibility	Arrival Date
Dr. Robert H. Maxwell - WVU Professor - Agricultural Education	Chief of Party and Special Assistant to the Director of MDD	17 Feb 75
Dr. Will R. Getz - NCATSU Adj. Asst. Prof. - Animal Science	Animal Production Tutor MATI Mpwapwa Departed Tanzania 3 May 78	1 Nov 75
Dr. Richard C. Gray - NCATSU Adj. Prof. - Animal Science	Animal Production Tutor MATI Mpwapwa	4 June 78
Mr. John A. Mann - WVU Adj. Asst. Prof. - Plant Science	Crop Production Tutor and Department Head MATI Ukiriguru	23 April 76
Dr. Lloyd C. Pickett - WVU Adj. Prof. - Plant Science	Range Management Tutor and Deputy Principal MATI Mpwapwa Departed Tanzania 25 May 78	6 May 76
Dr. Harvey P. Hermanson - NCATSU Adj. Assoc. Prof. - Soil Science	Soil Science Tutor and Department Head MATI Ukiriguru Departed Tanzania May 78	8 May 76

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Name - Rank - Institution	Present Responsibility	Arriv
Mr. Michael Kizer - NCATSU Adj. Asst. Prof. Agric. Engineering	Agro-mechanics Tutor MATI Ukiriguru	8 May
Mr. Frederick P. Holmes - WVU Adj. Prof. Agric. Education	Extension Tutor and Deputy Principal MATI Ukiriguru Departed Tanzania 26 May 78	15 Ma
Dr. Thomas J. Galvin - WVU Adj. Prof. Animal Science	Animal Health Tutor MATI Mpwapwa Departed Tanzania 6 December 78	15 No
Mr. Irving Russell - NCATSU Adj. Assoc. Prof. Agric. Economics	Rural Economy Tutor and Department Head MATI Ukiriguru Departed Tanzania 15 December 78	22 No

B. NEW PROJECTS

1. Farmer Training

As reported in the 1977 Annual Report, the Farmer Training Project approved on November 7, 1977. To date nothing has been accomplished on the implementation of project activities because of problems related to award of the contract. As of January, 1979, it is known that the Consor has been selected and a great deal of preliminary work has been perform on the contract, but the latter has not yet been officially signed. Nevertheless, many supporting activities have been initiated during the year, but with relatively slow progress.

Housing for the staff of the Farmer Training Project was seen to be problem from the outset. No definite action has been taken regarding housing for the one officer who will be stationed in Dar es Salaam, but it is hoped that Mission-controlled housing will be available for him up arrival. An additional house is under construction for the staff member to be posted to MATI Mlingano. Money has been sub-warranted from KILIMO to begin construction on a similar house to be provided for the officer who will be posted to MATI Nyegezi, but actual construction work has not yet begun. In the event of an early arrival of these two staff members, temporary housing is available at both locations. Grade A housing exist at both of the other field locations, MATI's Mtwara and UAC-Mbeya. An approved Ministry of Communications and Works (COMWORKS) plan for a clas room at Uyole has been submitted to KILIMO, and COMWORKS is completing t drawings for a hostel that will be constructed at MATI Mlingano. A tota of US $110,000 has been obligate 'n the project for the construction of

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these two houses, two classrooms, one hostel and the various renovations necessary to accomodate farmers at the four field locations. In most cases, the building and renovations are being performed by the maintenance building crews of the MATI's, although it appears that a local contractor will construct the classroom at MATI UAC-Mbeya.

The vehicles for the project will be long-wheelbase, right hand drive Land Rover pickups and station wagons. They have been ordered but have not yet arrived. The latest word is that the three pickups are ready for collection at Nairobi, and that two station wagons will arrive from Britain by sea. The arrival date on the latter is unknown. Motorbikes have been ordered directly from the Honda Company in Japan, and are rumoured to be on the high seas.

KILIMO officials are still expected to participate in the final recruiting process for Farmer Training Staff, when the time comes.

It is expected that at least four of the proposed long-term study candidates will depart in August, 1979 for their degree work in the United States. The Project's short-term training programs have not been organized yet, and the final choice of training locales will depend on how project activities proceed. Some of the initial suggestions no longer seem appropriate and negotiations are still continuing with KILIMO as to the most appropriate locations for these candidates.

The Project Paper describing this activity is available in the offices of USAID/Tanzania.

2. Department of Agricultural Education and Extension, and Center for Continuing Education in Agriculture, University of Dar es Salaam, Faculty of Agriculture, Forestry and Veterinary Sciences, Morogoro.

The initial consultants' report for this project was prepared under the Manpower Development Project in July, 1975. A revised Project Paper was submitted early in the year and the Project was approved in July, 1978. Negotiations are now underway for the selection of a contractor to provide the services outlined in the PP.

Through the use of local funds, Treasury and KILIMO have agreed to support the construction of buildings for the Center for Continuing Education in Agriculture, together with office and teaching facilities for the Department of Agricultural Education and Extension. The tender for the first phase of construction has been awarded and construction activities are proceeding at the Morogoro campus. This calendar year some Shs. 700,000/= have been utilized, and the total for the financial year is expected to be about Shs. 2.6 million.

KILIMO looks forward to the time when the Center is ready for use. The additional numbers of degree-level candidates in the specialized fields of agricultural education and extension will be much welcomed in the MATI network and field services.

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C. PARTICIPANT TRAINING

Fifty-eight of the available sixty participant training positions have been filled. Twenty-five long term participants are still in the U.S., and thirty-four long term and six short term participants have returned to Tanzania. Among the thirty-four long term participants who have returned twenty-seven are working in KILIMO, one is with the Ministry of Education (ELIMU), two are posted to the Regions, three have returned to the University of Dar es Salaam, and one is deceased. Nineteen returned participants are now working within the MATI network. Thirteen long term participants are expected to return to Tanzania during 1979. The following summary table provides an analysis of the participant training program.

All of the participants selected during this reporting period have been post-graduate candidates. The new selection procedure, designed in KILIMO, has worked quite well, although the increasingly stringent admissions policies of many American universities have provided a slight obstacle to our efforts. With the raising of acceptable passing grades on both the TOEFL language test and the Graduate Record Examination, we have to be more careful in the original screening of potential candidates.

While the selection pool for post-graduate candidates is neither wide nor deep, we have been able to obtain very good candidates, and expect to have the last two remaining positions filled by August, 1979.

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Summary of Participant Training Status

Client and Specialty	B.SC. Completed	B.SC. Still in USA	M.SC. Completed	M.SC. Still in USA	PH.D. Completed	PH.D. Still in USA	SUB-TOTAL Completed	SUB-TOTAL Still in USA	TOTAL
KILIMO									
L.S. Research	2	1	–	–	–	1	2	2	4
Crop Research	2	2	–	–	–	1	2	3	5
Planning	–	–	2	–	–	–	2	–	2
HATI Network	15	5	4	6	–	–	19	11	30
Irrigation	1	–	–	–	–	–	1	–	1
Tsetse Research	*	–	–	–	–	1	–	1	1
Deceased	1						1		1
ELIMU									
Agric. Education	–	–	1	–	–	–	1	–	1
REGIONS									
Crop Production	2	1	–	1	–	–	2	2	4
L.S. Production	–	–	–	–	–	–	–	–	–
Economics	–	1	–	1	–	–	–	2	2
PARASTATALS									
Crop Production	–	–	–	1	–	–	–	1	1
L.S. Production	–	–	–	–	–	–	–	–	–
UDSM									
Crop Production	2	–	–	1	–	1	2	2	4
L.S. Production	1	–	–	–	–	–	1	–	1
Ag. Ed./Ext.	–	–	–	–	–	1	–	1	1
Sub-Totals	26	10	7	10	–	5	33	25	58
TOTALS	36 (M=33 F=3)		17 (M=14 F=3)		5 (M=4 F=1)		58 (M=51 F=7)		58
Yet to be selected/recruited									2
GRAND TOTAL Main Project									60

* Two other participants have utilized Manpower Project funds one short-term heavy equipment specialist from Masai Project and one B.Sc. Entomology for the Tsetse Research Project.

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D. PROJECT VEHICLES

Of the original project vehicles, one at Mpwapwa has been turned over to the MATI, another at MATI Ukiriguru has been overturned and is not roadworthy, and the pickup used by the Chief of Party is still in use. Two additional vehicles from FY 77 funding are in use at the two MATI's. We still have no response to our request for a waiver to purchase three Land Rover replacement vehicles from FY 78 funding. An AID/W consultant, Peter Hagan, visited Tanzania during early 1978, and we hoped for definite subsequent action from AID/W on the Mission request for waivers to purchase these vehicles. This decision has not been forthcoming although the vehicles are badly needed. Some determination must soon be reached regarding the type of vehicles to be ordered. Safety of the driver, local availability of spare parts and service, and the value of the vehicles at the end of the project should provide overwhelming justification to the Agency for the purchase of Land Rovers. In the meantime, it should be emphasized that careful handling and good preventive maintenance programs for the existing vehicles will greatly prolong their serviceable lives.

E. CURRICULUM DEVELOPMENT ACTIVITIES

The Project consultants' report on curriculum development in KILIMO's Manpower Development Division was accepted and has been implemented. Two returned participants have joined the curriculum development effort, one in supervision and another in teaching materials. The search continues for suitable candidates to fully staff this new section of the Division.

During the year, several diploma syllabi have been standardized to require two years of study. These include the nutrition, horticulture, agro-mechanics, home economics, and ranch management syllabi. It is hoped that within another year, we will have standarized student intake dates, so that the whole system will operate somewhat more smoothly. A new Irrigation diploma is underway at Nyegezi, and plans are proceeding for a Dairy diploma at Tengeru.

At the certificate level, six institutes are offering the multi-purpo (or agro-vet) syllabus, Nyegezi is still offering the specialized certificate in land planning, and the artificial insemination program at Butiama is classed as a special course whose future is not yet clear. No training has yet started at Usa River, in artificial insemination.

A special effort will be made this year in the Curriculum Development Section, to organize and publish teaching notes on several areas of certi cate instruction. The activity will focus first on extension, since this discipline requires the most help and will provide the most support for Tanzanian Government attempts to assist the agricultural field services.

F. MANPOWER PLANNING

Although we fully expected to complete an agricultural manpower surve during this reporting period, this has not happened. Several factors

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account for this delay; the most important of which include a thorough overhaul of the initial terms of reference (scope of work) for this survey, and a variety of funding and support problems. A revised scope of work was produced by consultant Roger Simmons during the year, and at the time of writing the logistical problems are near resolution.

During the last short term consultation of Mr. Simmons, plans were made for the arrival of the manpower study team in early 1979. The revised scope of work is included in this report as Appendix A. We now expect an outside team of three full-time equivalents (four individuals) who will be joined by five full-time Tanzanian officers to conduct the study. The expected results of this study will contribute much needed data to KILIMO's manpower planning effort. The timing for this study will present some problems, since most of the field work in the districts and regions will have to take place during the long rains. However, given the importance of this study, we have decided to proceed and deal with the elements accordingly.

Some relevent manpower data are included as Appendix B of this report. Such data should become much more reliable and greatly augmented as a result of the manpower survey.

G. NATIONAL AGRICULTURAL LIBRARY PROPOSAL

A proposal to support the library system was prepared soon after the first of the year and submitted to Ford Foundation. Unfortunately, the Foundation indicated that they were not in a financial position to fund the proposal, but strongly supported the approach and parent concept. We have continued to seek a sponsor, and the interest level in the idea is still high. An indication of the concept's worth is the consideration which will be given to improving agricultural library services at the upcoming Research Support Conference, sponsored by the World Bank, to be held in Arusha in February, 1979. The Irish Government has indicated an interest in assisting the proposed library project, although it will not be able to support the project's total costs. It is hoped that USAID will also consider the value of this proposal, and provide partial or full support to the implementation of such an important component of Tanzania's agricultural development.

H. EVALUATION

Drs. Burril and Meisner arrived in February, to perform the mid-term evaluation of the project. They were joined in this task by Larry Abel, then USAID/T Project Manager, and Ndugu Hidaya Mlege, Principal of MATI Morogoro. Their findings are presented as Appendix C of this report.

Copies of the full evaluation report are available in the offices of USAID/T. The recommendations of this evaluation are still under discussion between KILIMO and USAID/Tanzania, although no unexpected recommendations were made.

I. CONSORTIUM VISITORS

In May Drs. Yeager of WVU and Reed of NCATSU arrived for a two-week working visit. Their visitation schedule included MATI Ukiriguru, relevent officials of USAID and KILIMO, and the staff of MATI Mpwapwa who were able to meet them in Dar es Salaam.

Two executive visits also occured during the reporting period; Dr. Dale Zinn, Dean of the WVU College of Agriculture and Forestry in August, and Dr. Jay Barton, WVU Vice-President and Provost for Academic Affairs in October.

A full report of Consortium personnel arrivals and departures is included as Appendix D.

J. CONSORTIUM FIELD STAFF ACTIVITIES

A fairly complete overview of my own activities is presented in much of the foregoing discussion. Rather than paraphrase the comments of my team members, I have included their progress reports and end-of-tour reports, as Appendix E. These reports are intended to demonstrate to our Tanzanian colleagues that members have been fully involved in teaching activities, preparation of teaching materials and aids, representing their disciplines and institutes at KILIMO and professional group meetings around the country, and a variety of service and extra curricular activities.

I recommend that readers interested in gaining a fuller understanding of the MATI network, its approach to training, and some of its problems should examine the record of the Annual Training Conference, held this year at MATI Ukiriguru, and also the annual proceedings of the Nationa Council for Agricultural Education. These documents are available in KILIMO.

I should like to conclude the main body of this report by commenting on some of the year's highlights and problem areas from my vantage point as Chief of Party.

1. We have been mightily cheered by the return and enthusiastic professional endeavors of the Project's graduating participant students. This particularly applies to the MATI network, but similar reports are received from the other clients such as UDSM, KILIMO research, the Regions, and ELIMU. It is probably true that the average agricultural education program offered in the U.S. land-grant system is more theoretical than may be required in Tanzania, but interweaving formal study with practical programs during academic terms and the long summer vacations has given us a group of returning professionals who are performing very well. Their presence within the system augurs well for the future effort that are required.

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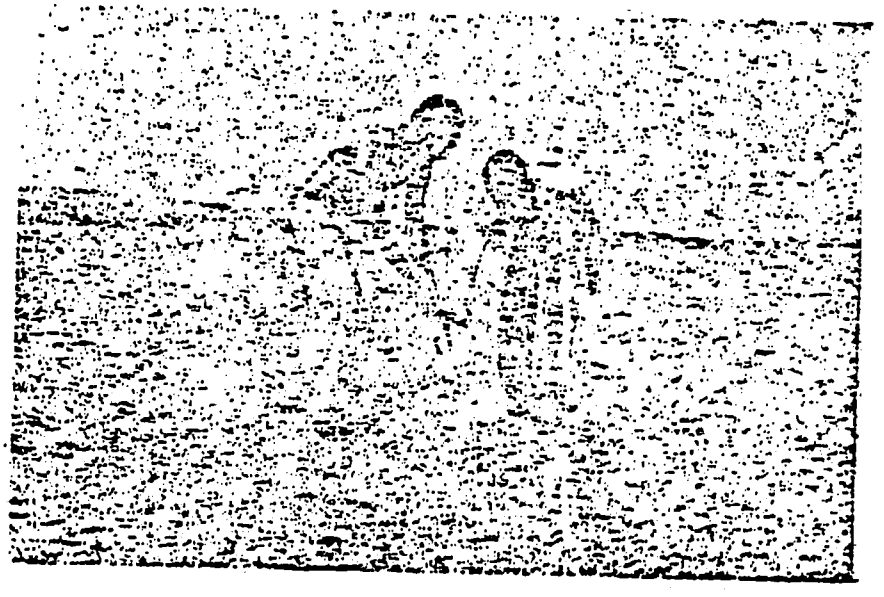
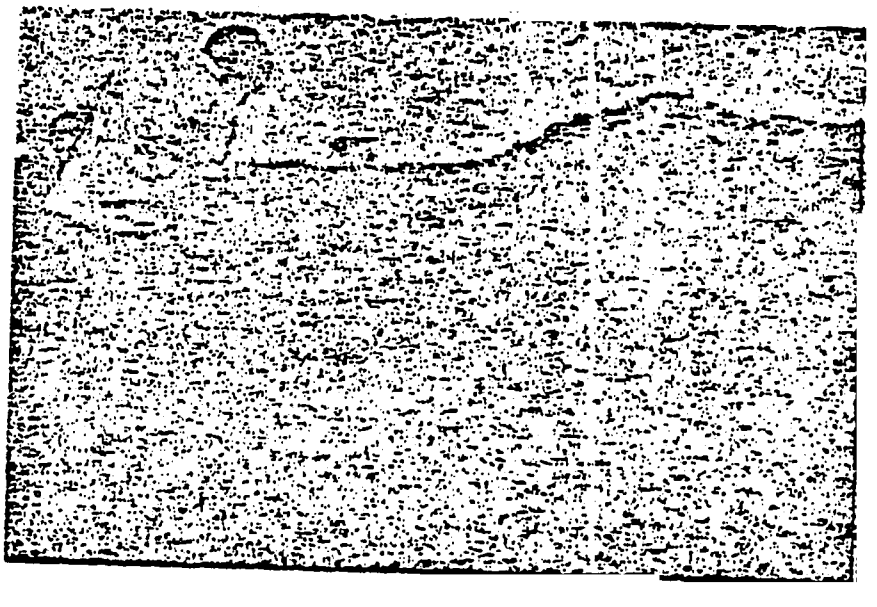


Students planting production plots at MATI Ukiriguru.



Weeding Ukiriguru soybean plots.

2. From the standpoint of overall planning, this has been rather a difficult year. The financial and psychological atmosphere of Tanzania has been rather fluid. A number of new appointments have been made in KILIMO, and almost a complete staff turnover has occured in the AID Mission. Recent administrative changes in AID/Washington were supposed to streamline processes relevent to the Project, but operations seem to take even longer now. Here in Tanzania we are still struggling with effects of decentralization, villagization, and the implementation of Party Policy. We are trying to work smoothly with the regions, parastatals, and the various ministries which are presently involved in agricultural and rural development. However, a number of different points of view have emerged on development, and some radically new, and as yet unoperationalized, concepts have been developed as a result.

3. Internally, one of our problems during this reporting period has involved staff recruitment. Two terminations were effected with short notice at midyear, and both of those positions remain open. One midyear termination was well-planned, the replacement officer arrived in good time and there were no continuity problems. The two year-end terminations were planned, and expected, and the replacement officers for these positions will be nominated in the near future.

   Recruiting problems are unique neither to Tanzania nor to the Manpower Project. They affect all development projects of a similar nature to ours, and overseas-based U.S. government agencies as well. Other USAID-assisted projects have experienced similar "down" times, and the Mission itself has had numerous positions vacant for from six to eight months during the reporting period. This is not to minimize the problems that lags in recruiting and placement cause, but to put things in their proper context. We recognize the problem, and are seeking the best means to solve it.

   Many of the incentives for acceptance of overseas assignments, with in a university setting at least, have been diminished during this reporting period. The war with Uganda at year's end has adversely affected recruiting, as have recent changes in U.S. tax legislation relevent to university employees working overseas.

   The WVU-NCATSU Consortium has a responsibility to provide the best people available, and we pledge to field these people as expeditiously as possible. It is not something that can happen overnight, given the nomination and concurrence procedures required by the U.S. and Tanzanian Governments. And we still believe that in the long run, a vacant position is better than one hastily filled with an individual who does not fit the job description, cannot adapt to the working conditions, or lacks the will and the ability to strive for the objectives of the Project. My colleagues in KILIMO USAID/T, and the home campuses share a common view on the problems of recruiting, and I feel confident that a positive recruitment pattern will soon emerge.

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we have been disappointed in the Mission's project support effort during the year, and disturbed by the inability of the Tanzanian Government to provide appropriate financial and physical support to teaching activities at the two Project MATIs. It is easy to make these kinds of statement in a progress report, and easier still to use them as excuses for non-achievement.

On reflection, I suspect that we have actually had better psychological and material support than we might have had in a U.S. setting. Moreover, we operate in a country where "Kujitegemea" (self-reliance) is a primary policy of the Government, and it is good for us to remember this. Self-reliance was heavily emphasized by our own forefathers, as a quality that furthered their self-preservation and development efforts. We should nurture a spirit of modern day self-reliance to meet the daily challenges of working in Tanzania. Tanzania requires initiative and ingenuity, and perhaps a bit of second wind, for successful achievement. I think part of our responsibility here is to plant ideas, procedures, and systems that can germinate in Tanzania administrative soil and thrive on the basis of their own validity and vitality.

5. Our basic assignment in this project is curriculum development in its broadest sense. Curriculum development includes the development of support systems, staff, and quality of teaching, as well as teaching aids, materials, and syllabi. Curriculum development is a continuous process and it is hard to gauge progress at any given moment. Over time, the results show in the quality of people who emerge from the training system and their impact on the Country's development.

It is difficult to report on the quality of Tanzanian Government support for the individual MATI's, as it varies widely. In terms of the entire MATI system, support has improved over the years of this project. Yet there is a long way to go toward providing uniform support for all of the individual MATI's. In my judgement, completely uniform support is impossible, given the conditions under which the MATI system operates. In light of these conditions, I recommend that our best alternative is to consolidate the Country's training efforts at two or three locations. This would allow more uniform support and greatly increase staff utilization and efficiency. It would also probably improve student and staff morale and produce better graduates with the same expenditure of public funds. In terms of maximum utilization of scarce resources, I believe consolidation is the correct way to improve training support.

Staff development is all too often looked upon in terms of further training and promotion in rank. The improvement of teaching skills and technical knowledge is certainly an important component of staff development, but at least two other factors should be given consideration. Supervision and helpful guidance of teaching staff

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are essential and these are almost completely missing from the MATI network. Systematic support of these functions by principals and coordinators of studies must somehow be built into the system. Another important factor is the professionalization of teaching in agriculture. Until the system rewards teachers sufficiently, both psychologically and materially, little true staff development will take place. Many of our senior officers sense this deficiency, and are struggling with the difficulties of bringing about the needed changes. In the meantime, teaching effectiveness suffers.

Syllabi may be the least important component of curriculum development, but the emphasis on syllabi in the MATI system has been over-riding. We have performed much experimentation, sometimes under pressure, and have tried to be all things to all people via the syllabus. We have made promises that we could not keep. We have embarked on educational ventures that were doomed to failure from the outset. Experimentation, like salt tends to flavor things Too much of either tends to produce harmful results. I fear that this homely analogy may bear on our efforts with the agricultural training systems of Tanzania. Many educational principles have been tried often enough elsewhere, that we know of their validity. We would gain a great deal in our programs if we reemphasized these principles, and allowed other professionals, who enjoy more degrees of freedom than we do in Tanzania, to undertake the experiments. This particularly applies in the teaching of practical skills, which is one of our main objectives, as well as in evaluation and the development of teaching methods.

For the first time since the inception of this project, sufficient exceptionally well-trained participants have returned to the system, who are qualified to assist in this redirection of effort. Perhaps not enough "yeast" is present at the moment to leaven the whole system, but the bases for change and redirection are present. This prospect makes our efforts exciting and worthwhile. We hope for another good year in 1979.

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ANNEX 11

1977-78 PLANS OF WORK FOR FIELD STAFF

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R. Maxwell, Chief of Party

1. General conditions remain the same as in the original Work Plan.

2. The following tasks should be initiated or completed by the Chief of Party during this work plan period:

   a) Selecting, processing and departure of the remaining six candidates for further long-term training under FY 78 funding. This will complete the goal of 60 participants for further long-term training as envisaged in the amended project agreement.

   b) Assignment of a replacement person in the Animal Production position at Mpwapwa on or about May 78. Decisions made in conjunction with MATI principals and DMD regarding second tours for five positions at MATI Ukiriguru and two positions at MATI Mpwapwa.

   c) Initiation of experimental farmer training activities under the newly approved sub-project for farmer training wings at MATIs Mlingano, Mbeya, Mtwara and Nyegezi. Selection and assignment of five new personnel including the post of Rural Development Coordinator at Pamba House.

   d) Assist in the manpower projection and evaluation effort for the agricultural sector as planned by the Manpower Development Division of KILIMO.

   e) Assist in the implementation of a National Agricultural Library system and the related activities, as outlined in the recommendations of the Munn Report.

   f) Institutional development activities in connection with the assignment as Special Assistant to the Director of Manpower Development Division: overall appraisal and supporting activities re curricula, teaching aids, manuals, etc., physical facilities, library resources/facilities, in-service training of staff, training policies timetables, organizational/administrative/teaching capability of the MATI network.

   g) Assist in the project preparation and, hopefully, implementation of the proposals to assist the Faculty of Agriculture, Forestry and Veterinary Science at Morogoro in developing the Center for Continuing Education in Agriculture and the Department of Agricultural Education and Extension.

   h) Identification and procurement of tools, equipment, books and

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L. Pickett. MATI Mpwapwa

A. Coordinator of Studies.

The overall objective is to upgrade the quality of instruction at the MATI and to graduate students who can function effectively in their assigned roles. One indicator of the latter will be the comparative performance of our students on National Examinations.

1. Be accountable to the Principal for all matters concerning academics in the Institute.

2. Liase with the Principal in getting the proper personnel and materials for implementation of departmental tasks.

3. Coordinate departmental plans and programmes and control their implementation.

4. Influence good cooperation between tutors and students as far as academics are concerned.

5. Serve as the Chairman of the academic committee. Be responsible for calling and guiding the committee meeting; whose main task is to develop appropriate philosophy, policies, procedures and plans regarding academic matters.

6. Report on the effectiveness of the teaching syllabus. Promote a revision of the certificate syllabus at the end of this academic year.

7. With the course tutors, report on the students academic progress and identify and isolate special academic cases which need attention. Counsel students with serious problems.

8. Consider all issues affecting the teaching and learning programmes at the Institute, and correlate them with other MATIs and with Headquarters.

9. Be responsible for curriculum development and programme of work.

10. Prepare and keep the following documents, a syllabus, calendar, schedule of classes, teacher loadchart, test schedule, and flow charts, distribute copies to the Headquarters.

11. With Department Heads, distribute subjects among teaching staff.

12. Prepare transcripts for graduates and maintain a file.

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13. With course tutors, perpare and keep other student academic progress records. Marks will be reported to students at the end of each term.

14. Supervise continuous assessment in theory and practical skills in each subject. This will be done through requiring schemes for assessment for all practicals, through a test schedule properly policed and through visitation of practicals.

15. Issue written advice to students whose performances are seriously weak. Students will be informed of their grades three times per year. Copy to the Director of Manpower Development Division.

16. In the final Exams, a Coordinator of Studies should serve as the Chief Examination Officer and perform the following tasks.

    - Preparation of exam timetable, making known to students and tutors the exam regulations, and appointing internal invigilators for each paper.

    - Insure that all tutors submit a sufficient quantity and quality of exam questions. Have them typed, mimeographed and stored for the Moderation Board.

    - Advise the Principal on the invitation of external examiners.

    - Remind the Principal to invite members of the Moderation Board.

    - Be responsible for exams, hall arrangements and smooth conduct of examinations.

    - Be responsible for the preparation of exam papers for student use.

    - Be responsible for the security of tests.

    - Keep records of exam results and notify headquarters

    - Be answerable to the Exam Board for students progress records

17. Assist in coordination of study tours and field practicals (along with course tutors and others).

18. Orient new staff regarding facilities, personnel, policies, procedures and expectations. Provide necessary materials to new staff.

19. Develop staff in-service training programs (with the staff) to deal with "improving instruction, evaluation, etc". Conduct an 8-session series of workshops during October-December, 1977.

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20. Confer regularly with Department Heads and tutors in an effort to eliminate obstacles to quality instruction, in order to arrive at improved approaches and in order to keep staff motivated and working well.

21. Develop the specimen collections for crops, soils and agro-mech. laboratories. Other institutions will be solicited for specimens and all trips will be used to collect specimens directly from the field.

22. Keep the staff informed and involved in MATI activities through monthly staff meetings and committee work.

23. Promote special seminars, guest lectures, slide shows, assemblies and movies. MATI goal = one event per week for students and staff.

24. Visit each tutor's lecture or practical class two or more times per year.

25. Make periodic observations of the early morning practicals and critique with the tutors in charge.

26. Look after the officing of tutors.

B. TEACHING ACTIVITIES

1. Serve as a fill-in and substitute to crops, land use, agro-mech. and extension topics as the need arises.

2. See that a unit on study skills is taught to new students (4-8 hours).

3. Participate in field trips.

C. TEAM LEADER (USAID) ACTIVITIES

1. Orient and assist any New Team Members upon their arrival. Serve as his/her personal host.

2. Report progress of team to Chief of Party.

3. Assist and coordinate team members as necessary.

4. Maintain the team vehicle (jeep).

5. Ensure that USAID/loan equipment is properly received, recorded and assembled.

6. Assist in identifying participants for foreign training.

D. MISCELLANEOUS ACTIVITIES

1. Publish the MATI quarterly journal, The Progressive Stockman. Solicit articles, have them edited, typed, translated, proof read and printed. Update the mailing list.

2. Offer my services to Headquarters to assist them in editing "Plans for practicals" and in developing "tutors topic guide" (Booklets for each topic which will include class notes organized lesson by lesson, the scheme of work, plans for practical, schemes for assessment, and other).

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T. Galvin, MATI Mpwapwa

Emphasis will be given to three areas: Teaching, development of class notes, and acquisition of teaching specimens.

	Theory Hours	Practical Hours
Bacteriology	15	9 x 3
Virology	20	12 x 3
Immunology	15	9 x 3
Protozoology	67	42 x 3
Entomology	37	24 x 3
Public Health	8	
Medicine and Therapeutics	25	21 x 3

The hours listed for bacteriology represent the remaining time for a course begun during the first year. The hours listed for public health and medicine and therapeutics represent only a portion of courses with multiple teachers.

Neither course outlines nor class notes are available for any of my courses listed. As a result a considerable amount of time will be devoted to development of class notes applicable to Tanzanian conditions. A major limitation in instruction at Mpwapwa is the lack of museum specimens for demonstration and examination. Efforts will be continued in collection of teaching specimens with emphasis on helminths, protozoa and arthropods. In addition, some emphasis will continue to be given to efforts to learn more about disease problems in Tanzania to enable a proper emphasis of disease subject allocations.

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W. Getz, MATI Mpwapwa

1. During the period of this plan, it is anticipated that as much as 1/3 of my time will be spent in library improvement and development. As chairman of the six person library committee, I will have to devote considerable time to the proper functioning of the library, but as well to continue the task of grooming another to handle this leadership role when I depart.

2. Preparation of teaching plans and teaching notes will require considerable time, perhaps again 1/3, as well as actual classroom and laboratory time. The plans and notes will remain at the Institute and hopefully will be useful in the development of teaching/training texts. Subjects to be taught to the diploma class include beef production, dairy production and swine production. I will also supervise the teaching of poultry production and sheep and goat production. It is anticipated that it may be necessary for me to teach selected topics to certificate level students. Although provision is made for a field officer to handle the laboratory sessions, I prefer to work with him and be on hand to assist and clarify matters.

3. The remaining time will most certainly be taken-up by (a) the care and maintenance of training demonstration cattle and supervision of their training by students and by junior staff, (b) writing articles for the locally published Progressive Stockman, (c) analyzing data collected previously from several beef cattle research studies, and (d) occasionally providing consulting services to nearby researchers and farm/ranch managers.

F. Holmes, MATI Ukiriguru

Instructor in Course "Organization and Management of Agricultural Planning" - Chairman of Library Committee, Chairman of disciplinary Committee, Chairman of the Academic Committee and a member of the Farm Planning Committee. Agricultural Manpower Development Project - 621-11-190-119 - Arrived at Post May 21, 1976.

I. Project Purpose

1. To assist the TANZANIAN GOVERNMENT in the Development of its sub-professional technical agricultural program/activities.

2. To assist the Ministry of Agriculture in strengthening the existing Ukiriguru Diploma and Certificate instructions by developing practical applied and operational training capability focusing on junior and intermediate level staff who are expected, overtime, to provide manpower/technical skills for the Tanzanian Government Food Crops and Livestock production programs/projects and operations.

The above purposes are in direct support of the overall program objectives of the TANZANIAN Government in achieving self-sufficiency in the food crops and livestock agricultural subsectors.

In the stated announced goal and specific programs, the following are seen as expected project outputs.

I. Teaching/Coordinator of Studies

A. To teach the full content of the approved syllabus in the area of "Organization and Management of Agricultural Planning and Advisory Services."

B. To study and evaluate the present curriculum of the Institute and recommend any changes which will improve the training program of the Institute. (Continuous evaluation)

C. To continue to develop educational materials:

teaching aids
teaching guides
teaching schemes of work
lesson plans
hand-outs
improve and increase the resource materials of the Institute for training purposes.
improve facilities for teaching

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II. Deputy Principal

To assist the Principal in the following areas:

- Planning
- Controlling
- Organizing
- Evaluating
- Follow-up
- Decision making
- Overall administrative responsibilities
- Developing an effective filing system

III. Library Committee Chairman

A. To assist the library assistant in the following areas:

1. Calling the Meeting of the Library Committee once every quarter, to discuss matters of top-priority at that time.

2. Compiling lists of reference books, periodicals, publication and text books consisting of recommended requests from staff and students.

3. Assist in organizing the procedure for moving the library resources to another building.

IV. Disciplinary Committee

1. To publish staff handbook.
2. To establish a student handbook.
3. To motivate student activities. (Write Newsletters -- Magazines)

V. Academic Committee

To motivate the staff of the Institute to develop a more positive educational philosophy towards training for a more dedicated and effective agriculturalist to plan and implement work programs designed for food crop and livestock production for self-sufficiency in the agricultural sector.

IV. Farm Planning Committee

1. To assist this committee in developing a farm plan which will fulfill the following needs:

A. The farm as a teaching facility

B. The provision to develop practical skills

C. The unit of production of food for both students and livestock.

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D. The agricultural-education center for the community (Training local farmers of the community).

H. Hermanson, MATI Ukiriguru

Time period of plan: July 1, 1977 to June 30, 1978

I am employed as a soil scientist at the Ministry of Agriculture Training Institute at Ukiriguru. My title is Agricultural Training Officer. This program is under the Manpower Development Division. My position is Head of the Land Use Department.

Teaching Duties

I teach Soil Science to first year Diploma students. This requires 2 hours theory, 9 hours practical, and 9 hours preparation each week.

I also teach Soil and Water Conservation (Management) to second year Diploma students. This requires 2 hours theory, 3 hours practical, and 7 hours preparation each week. These two teaching duties will continue to use 32 hours per week.

I am preparing handouts on several topics related to my teaching subject. Five original handouts will be prepared this year. Likely topics include: 1) Rice Irrigation at Mwabagola, 2) The use of the Philip Harris Colorimeter for soil testing. 3) The use of the standard hydrometer (ASTM) No 152H for mechanical analysis of soil, 4) Soil and site description in the field, and 5) a key to common soil minerals. Also slides and pictures will be prepared on teaching subjects. Commentaries will be prepared on available film strips.

Service to Institute

The department has been assigned to prepare an updated landuse plan for the new farm. I plan to support it by preparing a soil map. This is planned to take 4 hours per week.

I serve on the Farm Planning Committee. In addition to attending meetings I am establishing a forage crops demonstrative area. I help get information on farm machinery such as cultivators. This work will continue to receive 3 hours per week.

I am a member of the library committee. In addition to recommending new books I brought 20 new FAO publications from Rome and 10 new UN ones from Vienna. This duty takes 1 hour per week.

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M. Kizer, MATI Ukiriguru

The Agricultural Engineering instructor initially arrived at post in Ukiriguru on 22nd May, 1976. Teaching duties in this Agro-Mechanics Department of the institute commenced in July. During the second year at Ukiriguru the following projects and duties will be undertaken:

1. Teaching duties will continue as Agro-Mechanics instructor for the Diploma 1976 course. For the balance of the five term, 576 hour Agro-Mechanics syllabus the class hours will be:

   Term IV - Theory: 3 hours weekly
   Practical: 9 hours weekly

   Term V - Theory: 3 hours weekly
   Practical: 15 hours weekly

   Subjects covered will be draught animals, farm structures, water supply, and a portion of workshop technology.

2. Teaching duties will be undertaken in the Land Use Department as irrigation instructor for both Diploma 1976 and Certificate 1976 courses. Total teaching hours in this subject will amount to 25 hours of theory and 15 hours of practical for the diploma group, and 10 hours of theory only for the certificate group.

3. Duties will be undertaken as a member of the Diploma 1976 field practical committee. Duties will consist of assisting in the placement of students in the field and a follow-up of student performance on the job.

4. New duties have been assigned as manager of the institute workshop. These duties include assessment of maintenance needs of institute vehicles and equipment, assignment of maintenance work to mechanics, ordering spare parts, and preparation of models and teaching aids.

5. Responsibility will be taken for setting-up and maintaining new project equipment for use in the field and workshop, as they arrive. This will include the installation of shop tools in the new institute workshop facility, which is near completion.

6. Responsibility as acting Agro-Mechanics department head will be undertaken whenever the department head is absent from the institute.

7. As member of the Institute farm management committee, assistance will be given in the planning and implementation of development and production activities on the institute farm.

8. Duties will continue as the patron of the MATIs Agro-Mechanics Club.

J. Mann, MATI Ukiriguru

1. Teaching:

My teaching load will remain about the same as in the past, 7 to 9 hours per week of theory lecture. I will be teaching statistics, field plot technique, plant breeding, genetics and pathology to the 76 Diploma and 77 Diploma students.

I will be teaching 9 hours per week of practicals. These will include statistics lab, and work with students in their field experiments. Some of the field work will have to be after hours due to our extremely tight schedule.

2. Preparation of Teaching Materials:

The primary goal of the next 9 months will be to finish the initial draft of handouts on all the material in the syllabus I teach. Some will not be finished by that time, but 75% will be. The rewriting of these to a publishable standard will have to wait until later.

I will also be working on a series of lab handouts which will eventually make up a comprehensive lab manual. This is made difficult by the necessity of finding locally available materials to use in lab exercises.

The process of assisting members of the Crops Department to produce teaching materials will continue. Towards the end of this period the effort to pull them together to form a comprehensive series of handouts will begin.

3. Crops Laboratory:

I will continue to work with Mr. Mike Kizer to get this USAID funded lab built and equipped. With luck it will be completed and occupied within this time period. At present this project is being slowed due to money problems.

4. Production Work:

At present, the farm is not being fully utilized for production. I will be working to get 100 acres under production this year, using students as much as possible in all aspects of production. This has twin aims, firstly to involve students in mechanized production, and secondly to produce feed and fodder for use at the Institute.

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L. Russell, MATI Ukiriguru

Project Purposes:

1. To assist the Tanzanian Government in the over-all development of its entire sub-professional agriculture (technical) and professional agricultural training programs/activities.

2. To assist the Ministry of Agriculture in strengthening the existing Ukiriguru Diploma, Certificate and any other related instructions by developing basic and applied operational training capabilities focusing on junior and intermediate level staff who are expected upon completion of training to provide manpower/technical skills for the Tanzanian Government food crops and livestock production programs/projects and operations in light of such governments objectives: achievement of self-sufficiency in food crops and livestock production in all endeavouring agricultural sub-sectors.

The following work plan seeks to promote in the above objectives:

I. Departmental Head:

A. Assuming the responsibility of organizing and coordinating the activities of the department of Rural Economy and Extension. The areas of instruction to be covered are Farm Management/ Agricultural Production Economics, Agricultural Marketing, Agricultural Development and Agricultural Extension.

B. Teaching as per approved syllabus in the broad area of Agricultural Economics.

C. Identifying and recommending needed tools, equipment, books and and teaching aids.

D. To develop teaching materials for departmental use.

E. To develop a department brochure

F. To participate in Committees the activities of which bear heavily on the efficient operation of the Institution.

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ANNEX 12

END OF TOUR AND PROGRESS REPORTS OF WVU-NCATSU STAFF, 1978

END OF TOUR REPORT

Thomas J. Galvin

Adjunct Professor - WVU

After orientation in West Virginia in early November, 1975 and arrival at Dar es Salaam on 15 November for orientation, I arrived at MATI, Mpwapwa on 20 November to fill the position of Animal Health Specialist. Primary duties were given as tutor for the diploma course on animal health, with some teaching assignments in the certificate course in veterinary science.

The time of arrival was fortuitous as it permitted getting settled and making preliminary plans for teaching prior to the beginning of the 2 year diploma course on 3 January 1977, and enabled me to remain with the class until graduation.

The tour has been very rewarding primarily because of the high quality of a significant number of students and the interest and enthusiasm for learning exhibited by a large majority of diploma students. It is hoped that at least six of these who are interested will be encouraged and given the opportunity to continue their education at the university level. In particular, I think Mollel, Kombe, Mfuko, Kannah, Jalli and Mabeyo of the 1978 class would benefit themselves and Tanzanian agriculture by receiving additional training at the university level.

Specific duties and accomplishments:

Diploma Class - courses and hours for theory and practical are presented in tabular form.

	THEORY	PRACTICAL (for each of 3 groups)
Parasitology	119	81
Helminthology	78	63
Entomology	41	18
Microbiology	149	105
Bacteriology	48	72
Immunology	26	9
Virology	16	6
Mycology	8	0
Protozoology	51	18

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	THEORY	PRACTICAL (for each of 3 groups)
Public Health - zoonoses portion	8	0
Medicine & Therapeutics - parasitology portion	23	0

II. Certificate Class - 18 hours of theory in infectious diseases were presented.

III. Volunteer work in MATI library.

IV. Supervision of early morning practicals for 1st year certificate students at the piggery unit.

V. Collection of teaching specimens for practical classes.

VI. Preparation of class notes to be left for subsequent tutors in the courses I've taught.

VII. Consultant work at Kitulo Dairy Farm with animal disease problems.

VIII. Identification of helminth specimens submitted by VIC Mwanza.

OBSERVATIONS AND COMMENTS ON THE PROGRAM

I. Many opportunities were provided and encouraged by the Chief of Party for travel to collect teaching specimens and to become familiar with animal health problems in East Africa. The main sites visited were the Central Veterinary Laboratory at Temeke; Arusha (Veterinary Investigation Centre, Tropical Pesticides Research Institute, slaughterhouse, and game department); Ngorongoro dairy farm; piggery and poultry units at Endalen; Serengeti Research Institute; Iringa VIC; Kitulo dairy farm; Kongwa Ranch; Mkata Ranch; and Nairobi (Veterinary Faculty, International Laboratory for Research on Animal Disease, East African Veterinary Research Organization). Without these opportunities it would have been impossible to have anything approximating adaquate teaching specimens, and knowledge of relative importance of animal diseases would have been grossly inadequate. Collection of teaching specimens is necessarily continuous to increase the scope of the collection and to replace lost or damaged specimens.

II. Library facilities have been greatly improved by moving into new quarters where adequate space is usually available for studying and sufficient shelf space for present holdings. New acquisitions will present a shelving problem. Textbook holdings have tremendously increased since 1976 in the field of animal health and are generally adequate in this area.

III. Equipment and laboratory supplies are more abundant than when

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the course first started. Compound microscopes are adequate in number and quality except for the lack of mechanical stages. It is obvious that whoever decided to omit their acquisition has never tried to put a pointer on a bacteria or haemoparasite at a magnification of 1000 for teaching purposes. Stereoscopes with good lights would be very helpful especially in the entomology course. Only one, of poor quality, is available at the present.

IV. Transportation - an embarrassing situation. The two buses are operational so erratically that many theoretically useful field trips are never scheduled. Even scheduling practicals on the MATI farm is hazardous as frequently almost as much time is spent walking as is available for class.

V. Mpwapwa as a site for the diploma course in Animal Health. A devastating error was made in not choosing an optimal site such as Tengeru. Mpwapwa offers the following disadvantages in this respect:

A. Public health and meat inspection course. The local abattoir handles only a few cattle per day, usually less than 6. To have an opportunity to observe reasonable numbers of abnormal conditions, the students need to be near a much more active abattoir.

B. Pathology. Diploma students in animal health should have as one of their basic requirements the ability to do a good post mortem examination and be able to recognize and describe grossly abnormal tissues. To do this competently, a student must be present at numerous necropsy examinations and have access to freshly collected unpreserved specimens. Yet, as far as I know, in the 2 year course at Mpwapwa the students have seen not over 5 such examinations. The Mpwapwa VIC is relatively inactive in this respect because only a very limited number of dead animals in suitable condition for a post mortem examination are received. The high concentration of livestock in the Arusha area, better roads and more active VIC would make Tengeru a much more suitable site in this respect.

C. Parasitology. Students best learn to do field parasitology and recognize parasites and the lesions they cause by observing fresh specimens. About the best that can be done at Mpwapwa is to buy viscera at the sheep and goat market on Saturday, freeze them, and then thaw them for class use in practicals the following week. A site near an active abattoir would be much more suitable for this purpose.

D. Medicine and Therapeutics. One of the main objectives of the diploma course is supposedly to give the students sufficient training to enable recognition of many disease conditions in the living animal and to give experience in patient handling and treatment. This can be best performed in areas of high livestock concentration where people are sufficiently interested in the health and productivity of their animals that they will seek professional assistance when sickness occurs. Competency cannot be developed

without considerable experience in examination handling and treatment of sick animals by the student. The number of diseased animals the student is able to see at Mpwapwa is embarrassingly low, and certainly not even approaching minimal adequacy.

E. Sheep and goat production. Sheep and goats are not allowed at the MATI except with special permission from the livestock research unit. This has led to minimal contact with sheep and goats.

VI. Tutor transfers. Apparently without any regard to continuity in teaching a course, tutors are constantly transferring in and out of MATI, Mpwapwa. New tutors arriving in the middle of a course frequently have little idea of the extent or depth with which the first part of the course has been taught; the students suffer the most from this type of confusion. It appears that to be transferred, a tutor has only to make a request to Pamba House, and movement to the new location frequently occurs in a very few weeks. How great it would be if Pamba House acted with such haste in all decisions.

VII. Tutor effort. Although I am not aware of any incentives for excellence in teaching efforts, several of the Tanzanian tutors appear to do their best. Their only reward seems to be a heavier work load.

VIII. Paper shortages. I (and I think tutors in general) am confused on what is really wanted by the administration regarding student handouts of notes and data. We constantly hear (1) give more handouts so that students will have something for reference after graduation, and (2) use a minimal number of handouts because of the cost of paper and stencils and occasional paper shortage.

IX. Examination and grading methods. Students and staff are constantly bogged down with an excessive number of examinations. Students, by having one or usually two exams every Saturday, are thus encouraged to study only the pertinent subjects for the upcoming tests the following Saturday and apparently frequently fail to adequately keep up with other courses - until the week in which examinations on those courses are given. Apparently, most continuous assessment examinations are not retroactive and thus encourage memorization. Tutors spend an excessive amount of time preparing exams, marking exams, recording grades and standardizing grades. Some tutors ease this load by (1) giving 15-30 minute examinations instead of the regulation 2 hour exams, (2) giving exams during scheduled theory periods instead of on scheduled Saturdays, or (3) completely omitting scheduled examinations.

X. Class contact time. Diploma students are scheduled to have 21 hours of theory and 18 hours of practicals each week. With that amount of practical time (which is satisfactory), the number of theory hours is so excessive that it (1) promotes memorization of theory materials, and (2) greatly reduces the amount of time students have to utilize the library in order to read current scientific journals or to pursue independent study on individual interests in animal health and production.

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XI. Syllabus. The syllabus in animal health was poorly prepared and coordinated. Ten days after my arrival at Mpwapwa a meeting was held to finalize the syllabus. Apparently several individuals had been selected to prepare material on different subjects well in advance of this meeting. Yet, (1) some of these individuals came unprepared, (2) in at least one subject a laboratory technician was detailed to prepare the syllabus and (3) it appeared that no one had bothered to try to coordinate possible areas of overlap prior to the meeting.

XII. Water shortages at the MATI. Sometimes none or only muddy water is available for practical classes when large quantities of clean water are needed. Current construction of new buildings for an additional swine unit and current renovation of other buildings for an additional dairy unit will put additional pressures on an already overtaxed water supply.

XIII. Secretarial assistance. In general the available typists do not have the training, experience or knowledge of English to do an acceptable job of typing notes, handouts, or exams. Although my wife has done nearly all of my typing plus assisting other MATI staff, I feel that it is unreasonable to expect the large volume of typing needed for a full set of class notes with no compensation. I think that, in general, expatriate wives would be happier if some means could be found to adequately compensate them for this service.

XIV. Tutor training sessions. In general, interest has been very low in this area. When Dr. Pickett (AID - WVU) was on the staff as Deputy Principal and Coordinator of Studies, he worked diligently on this problem. Nearly all tutors were very late in arriving at these sessions and a majority each time had to be visited individually and almost literally led by the hand to the meeting. Conspicuously, the more inexperienced tutors were the most difficult to get to attend the training sessions. I think the training sessions should be re-initiated in the near future with more pressure placed on tutors to attend and participate.

XV. Visual aids. There is a tremendous need for these in most subjects in both diploma and certificate courses. Some, in the form of kodachromes and overhead transparencies, could best be prepared elsewhere (especially for the certificate course) by staff trained and equipped for this purpose. In general, though, many tutors do not spend their available time to collect even the most basic of teaching specimens and aids.

XVI. Diploma course classes. The present group of diploma students is completing the full 2 year course before a second group is accepted. With a small increase in the number of diploma tutors and an increase in housing space, it would enable and be much more efficient for new groups to be accepted annually.

XVII. Suggestions for additional staff numbers in the WVU - MCA & TSU team at Mpwapwa. If additional financial support could be obtained, it would be helpful to have 3 experienced veterinarians involved in teaching in the animal health diploma course at Mpwapwa, particularly if it is

envisaged that new classes would be accepted annually. Approximately equal in need are a clinician with extensive experience in large animal practice, a pathologist with extensive experience in large animal practice, a pathologist with extensive experience in necropsy examinations, and a parasitologist.

XVIII. Certificate course in "Agro-Vet". In my opinion there is no way to teach adequately in 2 years enough material to enable someone to serve as an expert in animal health, animal production and crop production at the village level. The length of the course would need to be extended for this purpose, or better still, a return to the previous system of certificates in either crop production or animal production.

XIX. Support by Chief of Party. In any team effort productivity is greatly influenced by support by its leader. With respect to the WVU - NCA and TSU - AID team, the Chief of Party has been a major contributing factor for the success of the teams' efforts. I want to acknowledge the effort and time spent on my behalf on both official duties and otherwise by our chief of party. His efforts have enabled requested teaching materials to arrive in a minimum of time, and permitted more of my time to be spent in a teaching effort rather than on quasi-official duties in Dar es Salaam.

XX. Lastly, I want to express my appreciation to the staff at MATI, Mpwapwa, for the assistance and cooperation received during my two-year tour. Special thanks go to Mr. Mdunguru, Dr. Sunguya, Dr. Shayo, Mr. Shikoba, and Mr. Leke for their support.

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END OF TOUR REPORT

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Will R. Getz

Adjunct Associate Professor - NCATSU

Summary of Events:

It was in October of 1975 that I joined the WVU/NCATSU team as a livestock production specialist. I arrived with my family at post, Ministry of Agriculture Training Institute - Mpwapwa, in November after having been briefed by Dr. Maxwell, the chief of party and only other team member on site at that time.

Our arrival at, and adjustment to the situation at, MATI-Mpwapwa was smoothed by having served in another capacity at that location for the period January 1971 - September 1975.

The situation at Mpwapwa during latter 1975 was (1) two courses being taught (one certificate in "veterinary", one diploma in animal health); (2) only the first year of the two year certificate was actually being taught at Mpwapwa; (3) there was very little attempt at "institution building" at Mpwapwa; (4) teaching staff for the diploma class was scarce in the extreme, relying excessively on visiting teachers and the good graces of resident research institute staff; (5) construction of new MATI physical facilities was way behind schedule, including houses for the three expatriate staff and hostels for students; (6) there seemed to be an attitude among the more senior staff that being posted to a MATI and being a teacher was really a second rate job; (7) teaching supplies and equipment in nearly all subject matter areas were grossly lacking; (8) library facilities were only marginally adequate for training institute needs in terms of books and space; and (9) the diploma course was officially a one-year course but was being occasionally extended so the course outline could be adequately covered.

My first teaching assignments by the respective course tutors were animal genetics and breeding, and beef cattle production in the certificate course, and animal husbandry (general) as well as breeding and beef cattle production in the diploma course.

During these early days, there began a flow of new teaching supplies and equipment into the Institute from both an IDA program and the WVU/NCATSU/USAID program. Further, rumors were being heard about getting both first and second year certificate students together at Mpwapwa (second year had been taught at MATI-Morogoro), but nothing was actually happening. (It should be noted that frequently rumors are the main source of advance notice of staff changes, special events, institute changes because of the not infrequent habit of headquarters to phone or send telegrams or letters stating in effect "do it yesterday" or "be there yesterday".)

In about mid-1976 some major institutional changes began to happen. The second member of the WVU/NCATSU team arrived on the scene and began an uphill effort at curriculum coordination. Further, a meeting of curriculum

coordinators and other resource persons (myself included) was called at Morogoro in order to completely revise the certificate course curriculum - thus creating a single course incorporating "veterinary" subjects and "agriculture" subjects. The effort being made was to develop a basic course aimed at preparing persons to serve as the one-and-only agriculture enabler at the village level.

Thereafter, during the rest of 1976 and throughout 1977, changes in the training program at Mpwapwa came fast and furiously. The certificate course was completely changed, new staff members were added, many staff were changed, second year students were retained at Mpwapwa, new MATI offices, classrooms, laboratories and library were occupied and a new principal arrived.

With the 1977-78 school year, many institutional matters have smoothed out, supplies and equipment have become much more adequate, library facilities are much improved, staffing is better balanced, and the infra-structure for doing a more complete job is being developed.

My Role/Efforts: During this two and one/half years, my overall goal has been to emphasize and preach the need and usefulness of practical animal husbandry, and to show by example the effort required and the results thereof. I believe I was relatively successful in this.

I was less successful in developing fully integrated teaching texts or outlines for classroom work and the associated visuals, handouts and illustrative materials, although some considerable attempt was made.

I was successful in organizing a teaching herd of cattle, for the purposes of (1) having stock conveniently available; (2) illustrating the impact of adequate feeding and better breeding, in addition to health care; (3) allowing students experience in handling such stock and fitting for exhibition; and (4) illustrating types and breeds. This effort was successful because I at times bucked the local system, was resourceful, diligent, occasionally was not completely honest with authorities, and carried a lot of feed and water myself. It is the same kind of effort required for successful livestock enterprises in many parts of this country. In effect I was "self-reliant".

Further, I contributed to the pool of knowledge required to further develop Tanzania animal agriculture, by carrying out some limited experimentation on feeding, breeding and management of cattle.

Finally, during this tour I was intimately involved with library organization and development, as a member and chairman of the library committee. The necessity of moving library holdings to a new physical location provided the opportunity to more adequately organize the holdings, and to expand the number of materials held. Although located within the new MATI complex, the library continues to serve both MATI and the neighboring LPRI. I was able to provide leadership, coordination, and limited know-how to the library scene. Also I enabled Tanzanians to participate in library decisions, assume eventual leadership, and develop a pride in its effectiveness.

In virtually all these accomplishments, the factor of support came into

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play, and I should therefore at this point acknowledge the support, hard work on our behalf, and advice and counsel of my chief of party who frequently provided the one or two missing ingredients for a more successful effort. His efforts should especially be noted, and studied, and emulated by MDD and by USAID-Tanzania.

Areas of Needed Continued Effort at Mpwapwa:

1) The teaching herd needs very much to be maintained under at least present levels of management. Not necessarily these very animals, but the same in principle. It is a sad but true fact that there are very few government farms where livestock are really well kept, and that includes Mpwapwa. Students have to see really well kept stock in order to believe what is told them in the classroom.

2) Continue the effort to break down the mental bias toward disease control only, and build up a more balanced animal husbandry approach.

3) Further develop detailed teaching notes and outlines and associated materials.

4) Especially at the certificate level, provide only very basic information and skills, and repeat, repeat, repeat. Prepare them for the village situation.

5) Try to get some changes in the MATI swine unit. It is located too far away for convenient teaching use, pens are very poorly designed/modified in regard to sunlight and air movement. Hence - a very poor model to show students. Further construction should be close to the MATI proper.

Overall Opinions/Observations:

1) MATI final examination procedures are far too involved, too costly and wasteful. They are a bit like taking an estimated weaning weight to five decimal points. This country just cannot afford such elaborate testing procedures, nor are they necessary in the MATI system. Better to spend the time, effort and money on daily instruction.

2) Animal husbandry practical skills can really only be taught at the "confidence level" at MATI Mpwapwa. Too many students and not enough teaching material for otherwise. Much learning will have to come on the job and under supervision there.

3) Quality of the MATI product is generally acceptable for needs in the field. Success or failure at work frequently depends on forces outside of the MATI program, e.g. level of supervision, politics, willingness to work, transportation.

4) At MATI Mpwapwa there appears to be an improved attitude toward teaching as a profession, and hence training in the MATI system.

5) Too much waste and abuse of MATI vehicles and farm equipment. Results in excessive petrol consumption and costs, excessive breakage, excessive wear, delay in getting important jobs done, and often inefficient use of

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limited classroom or practical time.

6) Availability of vehicle for use by expatriates has helped make more efficient use of high cost resource persons.

7) Animal Health-diploma course should be just that, and stop trying t be "all things to all people". It probably does not need to be a two-y course.

8) In regard to the USAID/GOT Manpower Project, it is likely not essen for expatriate staff to come with Ph.D.s in order to be considered qual fied. Research scientists are not required. Needed is experience with livestock and a moderate level of formal education, i.e. B.Sc. or M.Sc.

9) MDD headquarters needs to take on a more supportive role rather tha: dictatorial role in regards to MATI academic affairs. The MATI seems t: be nearly overwhelmed by schedule changes, guideline changes, revised forms, revised schedules, etc. rather than being supported in doing the: jobs.

10) USAID Tanzania should have taken a much more active role in the sup: vision of contract employee house construction. Had it not been for Dr Maxwell, whose job it was <u>not</u>, many irregularities would have occurred siting, construction quality and construction schedules. Further, it s: be made more convenient for USAID personnel to rather frequently visit projects around the country.

11) In light of changes in the curriculum and the posting of several fa: tractors and equipment at Mpwapwa, it would have been useful to have ha an experienced farm equipment mechanic on the Mpwapwa WVU/NCATSU team.

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END OF TOUR REPORT

Frederick P. Holmes

Adjunct Professor - WVU

I arrived in Tanzania on May 17, 1976 and arrived at Ukiriguru May 24, 1976. I assumed my duties as Deputy Principal, Co-ordinator of Studies and tutor in the Course "Organization and Management of Agricultural Planning and Advisory Services". These assignments made were in agreement with the project purpose of the Manpower Development Division of the Ministry of Agriculture. The training at the Ministry of Agriculture Training Institute is involved in training on a two-year certificate and diploma level; to meet the manpower needs in agriculture, in extension and of parastatals in the various regions in Tanzania.

There are approximately 26 staff members of three levels: certificate, diploma and degree holders. The students are: one hundred and six certificate students and eighty-seven diploma students and a retraining course of sixteen vets who are taking a three-month course to become general agriculturalist to work on the village level, which includes extension education concerned with both crops and livestock. There were 133 certificate graduates, 84 diploma graduates and 16 Vet Retrainees as of June 1978. These graduates have been posted to a number of regions in the country: in extension, parastatals, crop research and Ministry of Agriculture Training Institutes. The above figures indicate the results over the last two-year period; as to graduates - both certificate and diploma students.

Teaching Duties

The subject area "Organization and Management of Agricultural Planning and Advisory Services" consists of 154 periods of theory and 86 periods of practical exercises; having a guard total of 240 periods. I have been successful in presenting the basic principles in the above subject. The subject content has been changed to improve its content, which makes it more relevant to the real situation in the country as it relates specifically to management. During this period of two years, I have developed a number of teaching guides (23 handouts) which may be used for future presentations in this subject area. I have developed 5 teaching aids for a flannel board and 5 for flip charts. I have developed 8 preceding from seminars for resource material for the library. This course is now being taught by Mr. Mlozi, a former graduate of MATI, Ukiriguru.

D/Principal Duties

I have assisted the principal in the management responsibilities as follows: planning, controlling, organizing, and evaluating. These responsibilities have been difficult, mostly due to the shortage of available funds to meet the recurrent expenditures as well as for developmental purposes. The implementation of such plans for institution

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development were delayed to a great extent because of the major problem identified above. Unless corrected this problem is likely to continue.

Library

The library has now been transfered to another building which does offer better accommodation, as well as better services to the staff and students. I have held four meetings which addressed library improvements and organization. The library has received a number of new volumes during the past two years in the major areas of agriculture. We also have a large number on order. The present library accommodates approximately 80 persons at a time and it offers services for 10 hours a day. The service hours are quite adequate but the reference books have a lot to be desired - more are required. The library also serves the surrounding community.

Disciplinary Committee

There has been progress made in providing basic information to staff and student in relationship to their duties and responsibilities. I have collected and developed a portion of the material and now in the process of organizing a handbook for both staff and students at MATI Ukiriguru. These handbooks will be ready for use at the beginning of the next academic year (July 1978). The student handbook has been completed and a committee has been formed to produce a handbook for tutors. Included in the students' handbook is a report from the institute to the students for each term - (this is a new approach to keeping student's academic records).

Academic Committee

As chairman of the academic committee I have held six meetings once a year. There are several accomplishments which I will mention:

1. Field Practical Program Plan

   a) This program plan was designed to provide the student with the most practical experience that would support the academic program of the institute.

   b) A questionnaire was made out to get basic data and to establish the necessary relationship with those institutions conducting the practical training.

   c) Evaluation forms were designed to get necessary feedback from the various institutions involved in the training of students.

   d) Staff members were assigned to students on field practicals to conduct follow up visits and reports were made to the institute.

   e) Field practical kits were made up for each student on field practicals for collecting data and report writing.

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f) Students wrote field practical reports of the field practical experiences for final evaluation.

g) A short seminar was held by the student at the end of the field practical period (4 hours).

h) Plans are being made at present for the next field practical for the 1977 diploma students.

2. Self-Reliance Production Program

a) The students participation in the production of field crops and food crops at the institute farm has been programmed and it is having some effect in the rate of production per unit, but no evaluation has been reported at present.

b) The program is co-ordinated by two staff members.

c) Each student is assigned a given area of land to cultivate and to keep input and production records.

d) Each student is issued all required agronomic inputs and tools-record sheets.

e) A tutor is assigned to six students for supervision and consulting on production problems and assessment of participation.

f) The 1976 diploma students are doing the actual seed bed preparation, planting, etc. for the production farm in addition to this, each of the diploma students (77 and 76 diploma students) have a horticultural plot for food production for the dining hall.

3. Extension Education Program for Villages Assistance

a) The 1976 Certificate students are involved in a village extension program - one student Bwana Shamba one farmer. These students visit the assigned farmers twice each week and the supervision from the MATI visits once every two weeks with the student. These students are 30 in number.

b) The remaining 6 students are assigned to primary school near the MATI and they are teaching agriculture in the primary schools (6) and supervising shamba work twice a week.

The above program is going well and the farmers and the villages are working together quite well.

Farm Planning

The farm planning committee has developed a program to increase acreage in the various crops and to involve the students in the entire farm production program. The new area of the farm is included in the

program for the 1977-78 production year, approximately 80 - 100 acres. There is a strong feeling towards some re-organization of the farm committee. This will include such changes as:

1) The crop production unit of the farm will come under the Crop Department.

2) The livestock production unit of the farm will come under the Animal Science Department; this also includes poultry.

3) Specific pieces of farm equipment and tractors will be assigned for farm production purposes only.

4) The Soil Science Department will be responsible for soil tests, soil and water conservation and the recommendation of chemical fertilizers, etc.

5) The Rural Economy Department will be responsible for reliable record keeping - that may be assisting in evaluating the production area of the farm and for teaching purposes. Farm records at present do not exist.

6) The Agromechanization Department is to be responsible for the following:

   a) Maintenance of equipment
   b) Repairs of equipment
   c) Adjustment of equipment
   d) Securing proper equipment
   e) To have equipment available for specific operations when they are needed
   f) To assure adequate storage of harvested crops

This overall operation will be coordinated by a farm manager, with the heads of each section composing the farm planning committee.

<u>Recommendations</u>

1. That an American be an assistant to the principal instead of Deputy Principal.

2. Than an American be an assistant coordinator of studies instead of Coordinator.

3. That Americans be co-chairmen of departments instead of chairmen or heads of departments.

4. That the new staff for replacement at the two institutes be the vocational agric type, having had experience as an implementer of programs as well as teaching methodology.

5. That better support for vehicle operational cost be made available as soon as possible.

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6. That the principal be relieved of teaching for at least two terms if possible, so that he may at least reach par with his administrative back log.

7. That principals be given a workshop on institution management.

8. That all new participants for training have included in their programs some management courses on both the B.Sc. and the M.Sc. program.

9. That American technicians be given an opportunity to see more agric problems in Tanzania.

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PROGRESS REPORT

Michael A. Kizer

Adjunct Assistant Professor - NCATSU

During the previous calendar year, the first tour of duty was completed, home leave was taken, and second tour began in July. During the year the following events have occurred:

1. Diploma Course 1976 completed their studies and took final exams. There were no distinctions or failures. There were six credits in Agro-mechanics.

2. Interviews were conducted for the new uptake for Diploma Course 1978. Classes began mid-July with the first term ending mid-October. The second term has begun and it is less than one quarter complete at this time. During this period the subject of workshop technology has been completed and farm structures is nearly completed, for both theory and practical studies.

3. Part of the Diploma 1978 practical periods in Agro-mechanics have been devoted to the construction of the crop science laboratory as a self-help project. It was decided to enlarge the structure by twenty feet in length, so new footings were dug and poured. One mason has been employed by the institute for laying bricks on the project. He has supervised the students during the brick-laying process. The walls are now complete, the door and window casings have been placed, and the floor leveled for the placement of stones prior to pouring the floor.

4. During the past year, I served on the field practical committee for Diploma Course 1977, helping to arrange for their placement in the field. The organization of the program did not improve at all over last year's program; the main problem being financial, again. Nonetheless, the students spent five weeks in the field. I was not involved in checking on their work, as I had not been involved in their instruction.

5. Nearly all of the project commodities and equipment have been received, and most are now being used in the workshop. I have been involved in the check-in process and in assisting the storekeeper in storing extra equipment for use in the future. We now have a fairly effective check-out procedure in the workshop tool store, which has reduced tool loss considerably. On occasion, however, I have found it impossible to work, because of the lack of tools due to the storekeeper's absence. No alternative arrangement seems to be effective.

6. I have acted as workshop manager during the last year. This aspect of my work has continued, as in past years, to be the most troublesome task. With my current teaching load, I find

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it difficult to devote the time required to the workshop. As a result, the management and condition of equipment is still not satisfactory. Daily and preventative maintenance schedules are not working effectively. Some of the problem lies with the staff, who lack proper training and motivation but much of the fault lies with me and my inability to delegate authority effectively. When I am present in the workshop, work progresses at an acceptable rate and people are willing to work. However, if I am absent, work will stand until someone comes along to assign it and supervise.

There is still the problem of getting drivers to watch their equipment in the field and to tighten nuts and bolts as needed. All too often, simple problems which could have been rectified with a few minutes work, are allowed to develop into major repairs costing hours of down time and much money.

Problems with the procurement of spares has improved some due to the willingness of the bursar to release cash for the purchase of items that are available only in private stores. For items acquired through government stores, there appears to be no remedy to the requisitioning process, which can take weeks.

7. I have continued as a member of the farm planning committee, which has carried on in its attempt to increase the productivity of the school farm. I have attempted to assist Mr. Mann, who has been the prime mover in the project, but we have met with many setbacks. Major problems are finances for labor and maintenance of field equipment, and unfortunately, the apparent lack of enthusiasm of some fellow-committee members to see the farm as we envision it.

8. The Agro-mechanics Club has not been extremely active in the past year. There has been no major outside activities, and only a few local projects on vehicle maintenance. Mr. Lema, the assistant patron, did arrange some activities for the first year students during my absence for home leave. The second annual graduation barbecue was held, and despite inclement weather, was successful.

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PROGRESS REPORT

John Mann

Adjunct Assistant Professor - WVU

Teaching

As in the past, I have been teaching between 5 and 12 hours of theory per week, on the average about 8 hours. The sections of the syllabus I have covered have been Plant Science (Botany, Anatomy, Physiology, Biochemistry, Genetics), Plant Pathology, Plant Breeding, and Field Experimentation.

Although I have not reduced the number of hours devoted to theory teaching, I have shifted more emphasis to the teaching of practical skills during the last year. I have not accomplished much in terms of preparing a lab manual, but I have been discovering how best to teach certain skills using the limited resources available.

Projects

The screenhouse/laboratory project finally got off the ground this past year, and some of my time has been spent helping Mr. Kizer on that. I have found my conceptions of exactly what I want have changed since the building started up, and he has been good about building in the desired changes.

The "project" which has received most of my attention is the development of the farm into a real production unit. With student help, we cleared about 15 ha. of land, and now have about 25 ha. of the new farm cleared and plowed, and some of it planted. Progress has been slowed by problems in the ordering and purchasing of needed equipment from the States, and by a drastic cut in the local budget. We have overcome the conceptual problems about the possibilities of the new farm, and have a good general commitment from staff and students to further develop the farm's production capabilities.

Although I have spent more hours working this year than in the past, progress is harder to define, as much of my time has been spent doing things outside the job description: fixing tractors, making bricks, repairing equipment, hauling gravel, etc.

In general terms, I have not made the kind of progress I had anticipated in this last year. The cuts in the MATI budget and the difficulty of getting supplies from the U.S. have compounded our problems here. Unless we find ways of overcoming these problems, progress will be even slower in the coming year.

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END OF TOUR REPORT

Lloyd C. Pickett

Adjunct Professor - WVU

I. Overview of the Situation and Results

I have served as Coordinator of Studies and Deputy Principal at the Ministry of Agriculture's Training Institute at Mpwapwa for the period of this tour. The situation at my leaving is so far removed from that at my arriving as to seem unbelievable, due mostly to sweeping changes initiated by the Ministry of Agriculture. In May 1976, the MATI taught only 1st year Certificate students following a veterinary curriculum. The MATI was housed in 4 to 5 old rooms in the Research Institute. The staff of about 12, nearly all Animal Science majors, had few modern reference books and lacked many items of equipment needed in their instruction.

By May 1978, the MATI had nearly tripled its number of students, had taken charge administratively of the Animal Health Diploma course (as well as the 2-year certificate course), had a staff of about 45 (not all physically present), was housed in substantial new facilities, and was enjoying an abundance of equipment, supplies, and books. By May 1978, staff and students were following a rigorous schedule of weekly tests, were using a newly developed poultry unit and new student training shambas to enhance practical work, and had access to a very well-equipped library. The students were generally receiving an education of commendable quality, probably a substantial step ahead of prior years.

II. The Early Months

In June 1976, one month after I arrived, I participated in a workshop which developed a multi-purpose certificate curriculum (Agro-Vet). This curriculum was immediately implemented. As two-thirds of the course material lay outside of the previous veterinary sphere, we were strapped for appropriate tutors, teaching materials, and facilities.

At the same time an order was given by KILIMO headquarters to have the 2nd-year students, previously training at Morogoro, moved to Mpwapwa. The principal was soon tranferred as well. Thus, during my first six months, working around the clock, our handful of staff struggled just to survive. This was made more difficult by student hostility to the new syllabus.

By Christmas 1976, the staff had 2 new hurdles to surmount, that of moving from the Research Institute to all new facilities (buildings) at the present site, and that of gearing up for the first MATI-administrated Diploma Course staring in January 1977.

In 1977, a total of 34 new staff finally joined or rejoined the MATI and an abundance of IDA and USAID loan equipment arrived. Thus we began to bring some order out of the earlier chaos and the quality of instruction gradually improved.

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I leave MATI Mpwapwa with a considerable sense of satisfaction in having been one of the key participants in the growth and development of what now must be one of the strongest MATI's in the country. The present principal has provided the firm leadership lacking in the early months, and the MATI boasts a number of dedicated staff. Further, some KILIMO policies have added substantially to the quality of education in the MATI—for example, the continuous assessment of theory and practical skills requirement is very good. The KILIMO pressures to develop assessment schemes, schemes of work, etc. are needed as people in general tend to be as lazy as allowed to be.

For specific information on my roles, objectives, and accomplishments, the reader is referred to my annual plans of work and annual reports. MATI progress is further detailed in the MATI quarterly and annual reports.

III. Observations and Suggestions

This section will deal with some few areas that I feel could be improved in spite of my general feeling that KILIMO is making remarkable overall progress in upgrading its Agricultural Training Institutes. This progress is worthy of congratulations.

A. No doubt stemming from an American bias, it strikes me that the final examination procedures are overly difficult and expensive. If one can assume that MATI staff are now well enough trained to teach adequately, then it seems odd to assume that they cannot set exams and mark papers competently. Moderation and Examination Boards do help by keeping pressure on a staff and by turning up a few errors, but could this not be done more simply if the Director of Manpower Development sent a single competent representative to each MATI to spot check exam questions and their marking? Such an "inspector" could be demanding and effective. Senior staff from MATI's could be recruited to serve temporarily as inspectors for Diploma courses.

B. The Agro-Vet syllabus is not necessarily bad. If one views the Bwana Shamba's work the way I do, then the present general purpose certificate syllabus can produce a well-trained Bwana Shamba. But, if we expect the course to produce mini-veterinarians and mini-agronomists, I agree with the syllabus's critics—it is too broad.

I believe a Bwana Shamba, in conjunction with his superiors and his villagers should develop a few outreaching programs around high priority needs and spend all of his energies promoting these programs to successful conclusions. Such programs might include dipping of cattle, planting sorghum rather than maize, and improving range. What the Bwana Shamba needs is dedication, skill in working with people, ability to follow proven Extension techniques or methods, and knowledge of and confidence in the simple practices he is promoting. Our present curriculum can develop these skills and abilities. What we probably do though is develop technicians who can tell a farmer what the insect is which is eating his crop but who are unable to launch comprehensive educational programs on a mass scale to protect the villages from such insects.

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When we create (educate) experts, we invite the application of poor Extension technique. The Bwana Shamba who relishes being a veterinarian (expert) will tend to spend his days diagnosing and treating sick animals. There is no efficiency and little development potential in such effort. Cows are not a limiting resource---grass is. The Bwana Shamba must be able to change people, their beliefs, and habits, and finally their agricultural practices on a mass scale according to the programs mutually selected.

For a further treatment of this topic, see: The No. 4 issue, 1977, of Progressive Stockman, "Five Ways to Improve Your Extension Work", by L. Pickett. Also see my papers delivered at the 1977 and 1978 training conferences. One of these suggests we need to teach a few things well (those which may become Extension programs) rather than many things poorly. Our curriculum can do this but first we must visualize Extension as action---organizing and educating people toward some village-wide goal---rather than as reaction wherein technical problems are brought to the Bwana Shamba who reacts to them. The latter takes a good deal of knowledge. As a general approach to Extension it will not be successful. Diploma-trained staff at higher headquarters can better serve as the "doctors" of agriculture. Let the Bwana Shamba be a "fundi" in the main, a dedicated, simple man of the village. Neither students nor tutors will like this advice, but it may be in keeping with the intent of the policy makers who elected to switch to a general purpose syllabus. I believe its implementation will make Extension more productive. This is because a single shot of scientific advice seldom changes anyone's practices. Change comes about as a result of continuous reminders and proofs of the superiority of a new practice---the kind of repetition automatically built into a comprehensive, outreaching Extension education program. We must train change agents, not simple givers of advice as "experts" tend to be.

C. As developed at length in my paper to the 1977 training conference at Tengeru, we need to: (1) redefine the role of the Bwana Shamba (2) revise our present syllabus and (3) develop tutor guides. The national examinations make these tasks urgent. At Mpwapwa, for example, we taught our assigned hours on training aids (in Extension), teaching about 3 selected aids well, yet, on the National Exam a question called for the identification of a wide array of aids, some of questionable use in the country. An expanded syllabus or tutor guides to topics would define more precisely what a tutor is expected to teach and avoid such problems. The suggestions in my paper were accepted by the 1977 training conference. So far, no action is noted.

D. If a foreigner is again assigned as a Coordinator of Studies, I recommend he not also be Deputy Principal. It is impossible for an outsider to handle ceremonial, financial, and certain other matters as well as a Tanzanian.

SUGGESTIONS FOR THE CONTRACTOR

The West Virginia-N. Carolina A&T University Consortium staff was in all cases competent except at the time of recruitment when the Directors were changing. Dr. Maxwell, Chief of Party, has been exceptionally quick and able in responding to minor crises at the MATI. He was leaned on time

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after time to send parts needed, paper needed, etc., when other channels were too slow to meet the crisis.

Most important to the success of field workers is their careful selection. I believe technical competence is less important than tolerance for ways different than our own, ability to get along well with others, teaching ability, an active interest in the host people and their culture, a willingness to give of oneself, and an overall dedication to make the host institution a better one.

Bachelors should generally be avoided in remote posts.

An Ag Engineer could be well used at all MATI's including Mpwapwa.

A brief newsletter from the Director of International Programs could keep field staff in better touch with the home office which we almost forget.

USAID is rather remote from our day-to-day activities and I have no comments here.

THANKS

I would like to thank the Principal, J.S. Ndunguru, for allowing me the opportunity to function actively. I thank all those staff members who cooperated so well, often under pressures, and whose efforts finally led to substantial improvements in our instruction over the 2-year period.

I appreciate the hard work and friendship of Dr. Getz and Dr. Galvin, and the help of Dr. Maxwell, already mentioned. The Director of International Program's trips to the country have proved his concern in keeping updated. Lastly, I thank my wife and family whose presence made my presence possible.

It is inevitable that I have offended some Tanzanian people. I only ask their tolerance as I have strived to be tolerant of them when their values, beliefs, and habits differed from mine. I am embarrassed that I haven't learned Kiswahili better. Besides having little interest in languages in general, I was so worn out from my heavy work load that I neglected to work on the language as I should have. At times my work load was so heavy that there was not a spare minute in an entire day.

My co-workers can rest assured that I will speak well of them and their country, and they can be assured of my continued concern and friendship. I hope to be able to work with them again.

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TO: Dr. Lloyd Pickett, C/P WVU & NCATSU- USAID CONTRACT

FROM: MAURICE A. FENNELL, ADJUNCT PROFESSOR OF SOIL SCIENCE

SUBJECT: ANNUAL REPORT FOR 1979

A. TEACHING ACTIVITIES

A serious and chronic staff shortage continues to affect the Land Use Department and an early improvement is not anticipated. Three tutors, representing less than 50% of required staffing are attempting to cover both theory and practicals for four groups, namely, 1979 and 1979 certificate and diploma students, respectively, amid obvious clashing class schedules.

In order to overcome observed basic weakness in training, special emphasis on teaching methodology was undertaken to stimulate or develop analytical and reasoning abilities of students at the expense of the general negative practice of study by "cramming". Attempts were also made to reinforce conceptual inter-relationships between relevant subject matter components of the 1979 diploma and certificate syllabi, respectively. While compartmentalization of subject matter areas such crop, soil, and animal sciences are functional necessities, most students seem to exhibit a low level of awareness of their intimate linkages.

1979 Certificate Course: A total of 87 students were enrolled for soil science course during the first term involving 3 hours of theory and 15 hours of practicals, weekly for period July 23 - November 20. A certificate level assistant was provided part-time to assist with the practicals.

1979 Diploma Course: A total of 49 students were enrolled for soil science course during the first term, involving 3 hours of theory and 6 hours of practicals, weekly, for period July 23 to November 20.

1978 Certificate Course: Assisted with teaching 2 hours weekly in theory for course on Soil and Water Conservation & Small-scale Irrigation for 45 students following departure of Mr. Mollel, a graduate tutor in soil science.

B. INSTITUTIONAL DEVELOPMENT

1. Preparation of Teaching Materials:

A decision was made at WVU/NCATSU-USAID Conference in Zanzibar December 15-17, 1978 to utilize excellent book "Introduction to Soil Science as Applied to East Africa" by Professors C.E. Sperow, Jr. and R.P. Keefer, West Virginia University, to satisfy this contractual requirement. This would leave me with more time to undertake heavy teaching duties.

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2. Facilities:
The soil science laboratory was reorganized and made more functional. Most of the obsolete and useless equipment and supplies cluttering up the laboratory were discarded or transferred to storage. Much of the glassware is inappropriate for this type of laboratory and should probably be given to an institution with more sophisticated requirements.

Procurement orders have been made for simple laboratory instruments and spares for needed inoperable instruments, additional supplies, etc. Additional orders were placed for a variety of teaching aids, covering land use and related areas, as well as appropriate reference materials, charts, diagrams, specimens, etc.

The single electrical outlet provided in the 1,000 sq. ft. soils laboratory restricts effective use of available electrical equipment. Repeated attempts to install an additional 6-10 outlets and partial re-wiring of the building to accommodate installation of new electric water distilling unit (34 amp. capacity) have been unsuccessful to date, due primarily to budgetary limitations.

Two additional soil profile pits were developed to improve field studies of soils.

C. MEETINGS AND TRAVEL.
Valuable data gathering and observation trips were made to a number of agricultural and educational institutions, viz:

1. MATI- Tengeru in August '79 - Diploma and certificate training and horticultural research and demonstration.

2. Milanganc Agri. Res. Institute: Attend soils conference October '79.

3. Faculty of Agriculture, Univ., of Tanzania at Morogoro: Observe facilities and research efforts, discussions and exchange of ideas with faculty, as well as staff of IITA from Kilosa.

4. Period November 20 - December 7 was spent at MATI, Tengeru serving as Chairman for one of two sub-groups of members of the Moderation Board for the 1978 Certificate Course First Year National Common Examination.

ANNEX 13

USAID/TANZANIA PARTICIPANTS IN TRAINING PROJECT: 621-0112

AGRICULTURAL MANPOWER PROJECT

STUDENTS STILL AT SCHOOL, Dec. 31, 1979

Participants Name	From	Date of Departure	Type of Training and Institution	Estimated Date of Completion
1. L. Mosha	MATI Ukiriguru	8/75	Library Science B.Sc. WVU M.Sc. - University of Pittsburgh	JAN 1980 ~~December 1979~~
2. K. Kissawike	MATI Ukiriguru	8/75	Home Economics B.Sc. NCATSU	Finished B.Sc. Now taking an M.Sc. at NCATSU in Human Nutrition. OTHER FUNDING.
3. J. Karegeru	UDSM - FAF	6/76	Agric. Extension M.Sc. - Ph.D. Univ. of Wisconsin	December 1980
4. M. Quentin	UDSM - FAF	1/77	Agronomy B.Sc. Entomology M.Sc. WVU	December 1980
5. Francis Shao	KILIMO - Research Ukiriguru	5/77	Plant Path./P. Admin. Ph.D. WVU	May 1980
6. M. Materu	KILIMO - Regional Musoma	8/77	Plant Sci./P. Admin. M.Sc. WVU	January 1980
7. Robert Mushi	KILIMO - Research Ukiriguru	8/77	Agronomy B.Sc. WVU	Now on M.Sc. Crop Breeding Project at University of Nebraska, On TITLE 12 FUNDING.

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Participants Name	From	Date of Departure	Type of Training and Institution	Estimated Date of Completion
9 G. Vincent Hiza	MATI Mpwapwa	8/77	Animal Sci./P.Admin. M.Sc. WVU.	August 1980
10 9. A.K. Korongo	Uyole Agric. Center (Mbeya)	8/77	Agric. Economics M.Sc. WVU	June 1980
11 10. J. Mkomba	MATI Ukiriguru A.T.O.	8/77	Crop Agronomy M.Sc. WVU	August 1980
12 11. G. Madata	KILIHO - Research Mpwapwa	8/77	Animal Nutrition Ph.D. WVU	August 1980
13 12. M. Senoka	UDSM	9/77	Soil Science Ph.D. University of California - Riverside	March 1980
14 13. S. Tarimo	KILIHO - Research Tanga	8/77	Entomology M.Sc. & Ph.D. WVU. Under Dissertation Research Scholarship, PRIVATE FUNDING,	1982 - OVP Project Funding.
15 14. G.D. Nyakimori	KILIHO - Regional Dar es Salaam	8/78	Agric. Economics M.Sc. WVU.	December 1980
16 15. Sylvia Shao	MATI Ukiriguru	1/79	Family Resources/Agric. Library Science B.Sc. WVU	August 1981
17 16. I. Mkuba	Irrigation HQ Dar es Salaam	8/79	Agric. Economics M.Sc. Colorado State University	August 1981
18 17. A.N. Kaaya	MATI Tumbi	8/79	Agric. Economics M.Sc. WVU	August 1981

USAID/TANZANIA PARTICIPANTS IN TRAINING PROJECT: 621-0119

AGRICULTURAL MANPOWER PROJECT

RETURNED STUDENTS (Dec 31, 1977)

Participants Name	From	Date of Departure	Type of Training and Institution	Date of Return	Where Posted - Utilization
1. F. Mrisho	KILIMO HQ	6/70	Economics M.A. Williams College	6/74	AO - Agricultural Planning, KILIMO HQ
2. S. Ngaisa	MATI Ukiriguru	12/73	Agric. Engineering B.Sc. Univ. of Missouri	5/75	ATO-Farm Mechanics & Dept Chrman MATI Ukiriguru
3. A. Somagwa	MATI Ukiriguru	12/73	Agric. Educ. & Ext. M.Sc. Univ. of Missouri	5/75	ATO-Rural Economy & Extension & Dept Chrman, MATI Ukiriguru 6/78 - Principal, MATI Ukiriguru. 12/78 - Principal, MATI Ilonga
4. A. Mosha	MATI Ukiriguru	12/73	Agronomy M.Sc.	12/75	ATO-Agronomy & Dept Chrman MATI Ukiriguru 6/75-Principal, MATI Mlingano
5. F. Mwijage	KILIMO HQ-MUD	9/74	Animal Science M.Sc. New Mexico State Univ.	6/76	ATO-Animal Production Uyole Agric. Center MATI Mbeya 12/77-MATI Maruku, Bukoba
6. J. Magoti	KILIMO - Regional	12/74	Irrigation Eng. B.Sc. Prairie View A & M	12/76	AO-Arusha Seed Farm 6/78-KILIMO HQ., Irrigation Division

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Participants Name	From	Date of Departure	Type of Training and Institution	Date of Return	Where Posted & Utilization
7. M. Shayo	MATI Mpwapwa	6/74	Veterinary Pathology M.Sc. Nairobi University	12/74	Nairobi University was placed, necessitating his return.
		9/75	Veterinary Pathology Auburn University	5/77	ATO-Animal Health MATI Mpwapwa
8. D. Maafiri	KILIMO - Regions	8/75	Range Mgt. B.Sc. New Mexico State University	12/76	ATO-Range Management MATI Morogoro
9. P. Mwakipesile	MATI Tengeru	8/75	Animal Science B.Sc. WVU	1/77	ATO-Animal Production MATI Nyegezi 9/77-MATI Tengeru
10. T. Itagerelza	MATI Nyegezi	8/75	Agric. Economics B.Sc. SCATSU	5/77	ATO-Agric. Economics MATI Mlingano
11. D. Kirumbi	UDSM - FAF	8/75	Animal Science B.Sc. WVU	5/77	Animal Science Lecturer, UDSM
12. S. Lewa	KILIMO - Regions	8/75	Crop Production B.Sc. WVU	5/77	RADO Dar es Salaam Region
13. B. Nwoymera	MATI Mlingano	8/75	Farm Mgt/Agric. Econ. B.Sc. WVU	5/77	ATO-Agric. Economics MATI Mlingano
14. S. Sigera	MATI Tengeru	8/75	Dairy Technology B.Sc. SCATSU	6/77	ATO-Dairy Technology MATI Tengeru
15. G. Masigara	MATI Ukiriguru	8/75	Agric. Education B.Sc. WVU	5/77	ATO-Extension & Agric. Education MATI Ukiriguru
16. R. Mbomike	UDSM - FAF	8/75	Soil Science B.Sc. SCATSU	6/77	Soils Lecturer UDSM

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Participants Name	From	Date of Departure	Type of Training and Institution	Date of Return	Where Posted & Utilization
17. J. Lyakurwa	MATI Nyakezi	12/75	Animal Science MVU	8/77	ATO-Animal Science MATI Mpwapwa, 12/77-Principal, MATI Mtwara
18. U. Mwangande	MATI Nyakezi	8/75	Pastoral Agronomy B.Sc. MVU	8/77	ATO-Agronomy, MATI Mtwara 6/78 - TLDB Mgunza
19. M. Sembuli	KILIMO - Regions	8/75	Dairy Science B.Sc. MOATSU	8/77	ATO-Animal Science MATI Mpwapwa 10/77 UAC Mbeya
20. M. Masiga	KILIMO - Research	8/75	Soil Science B.Sc. MVU	9/77	RO - Soils A.R.I. Mlingano
21. B. Makwaia	MATI Mlingano	8/75	Agric. Mechan. B.Sc. MOATSU	1/78	ATO-Agric. Education MOSM
22. A. Matteo	UDSM - FAP	6/76	Agric. Educ. M.Sc. Univ. of Wisconsin	6/78	Agric. Education Lecturer, UDSM
23. M. Mairay	KILIMO HQ-MDD	8/76	Agric. Educ. B.Sc. MVU	5/78	Planning Officer Manpower KILIMO HQ-MDD 9/78-Professional Training Officer - MDD
24. Q. Lulandala	MATI Tengeru	8/76	Agric. Educ. B.Sc. MVU	8/78	ATO-Curriculum Dev. KILIMO HQ-MDD
25. K. Kalemela	KILIMO - Research Ukiriguru	8/76	Agronomy B.Sc. MOATSU	5/78	RO - Crops A.R.I. Tumbi
26. H. Mouh	KILIMO - Regions	8/76	Agric. Ext. Educ. B.Sc. MOATSU	5/78	AO - Field Services Shinyanga Region

Participants Name	Firm	Date of Departure	Type of Training and Institution	Date of Return	Where Posted & Utilization
27. I. Unpu	MATI Maruku	8/76	Agric. Education B.Sc. WVU	8/78	ATO-Crop Production Coordinator of Services MATI Kitale
28. G. Kasengwa	MATI Mpwapwa	8/76	Agric. Education B.Sc. WVU	8/78	ATO-Crop Production MATI Mtwara 8/78 Deceased
29. Silas Dolo	KILIMO - Research Mpwapwa	8/76	Animal Science B.Sc. WVU	8/78	RO-Artificial Insemination MAID - Usa River
30. Richard Shayo	Uyole Agric. Center MATI Mbeya	8/76	Agric. Education B.Sc. WVU	6/78	ATO Crop Production MATI Mbeya - Uyole 2/79 Agriculture Development HQ MWP
31. S.H. Katani	KILIMO HQ-DAP	1/77	Agric. Economics M.Sc. WVU	5/78	AO-Agric. Economics KILIMO HQ-DAP
32. I. Lupanga	KILIMO HQ - on secondment to KLIMU	1/77	Agric. Education M.Sc. WVU	1/79	EO - Inspector of Schools - KLIMU
33. C. Chacha	MATI Mpwapwa	8/77	Animal Sci./Agric. Ed. B.Sc. MOATSU	7/79	ATO-Animal Science MATI Uyole U.A.C. Mbeya
34. Michael Mgazi	MATI Mpwapwa	8/77	Animal Sci./Agric. Ed. B.Sc. MOATSU	7/79	ATO-Animal Science Uyole Agric. Center
35. B.L. Mseffe	MATI Mlingano	8/77	Agric. Mech./Agric. Ed. B.Sc. WVU 8/78 Iowa State Univ.	6/79	ATO-Agric. Mech. MATI Mlingano

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Participant's Name	From	Date of Departure	Type of Training and Institution	Date of Return	Where Posted - Utilization
36. N. Meghji	MATI Morogoro	8/77	Agronomy/Agric. Ed. B.Sc. HVU	6/79	ATO-Crop Science MATI Mtwara
37. R. Tuvana	KILIMO - Regions Morogoro	8/77	Production Agronomy B.Sc. NCATSU	7/79	AO-Maize Project Dar es Salaam
38. E. Manyiri	KILIMO - Regions Mwanza	8/77	Agric. Econ./Land Plan. B.Sc. NCATSU	7/79	AO-RIDEP Tabora
39. J. Katundu	KILIMO - Research Ukiriguru	8/77	Agronomy B.Sc. NCATSU	6/79	R.O. - Arusha Research Institute Lyamungu, Moshi
40. D. Msuya	KILIMO - Research Mpwapwa	8/77	Animal Science B.Sc. HVU	12/78	R.O. - Kongwa Pasture Research Station
41. J. K. Rwelamira	SUDECO Financial Control Officer	3/78	Agric./Finan. Mgt. M.Sc. Univ. of Florida	9/79	Sugar Development Corporation HQ Dar es Salaam
42. J. Machange	KILIMO - Research West Kilimanjaro	8/77	Pasture Agronomy B.Sc. NCATSU	12/79	ATO - MATI Tengeru
43. A. Abrahim	MATI - Tumbi	12/77	Ag. Ed./Pub. Admin. M.Sc. HVU	12/79	ATO - Curriculum Dev. Section KILIMO HQ-MDD

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ANNEX 14

PARTICIPANT TRAINEES SELECTED FROM, RETURNED TO AND REMAINING AT MATIs UKIRIGURU AND MPWAPWA AS OF NOVEMBER 1979

MATI UKIRIGURU

Selected	Returned	Remaining
Ngaiza	Yes	Yes
Senyagwa	Yes	No
Masigara	Yes	Yes
A. Mosha	Yes	No
L. Mosha	Still in training	
Shao	Still in training	
Mkamka	Still in training	
Kisawaka	Still in training	

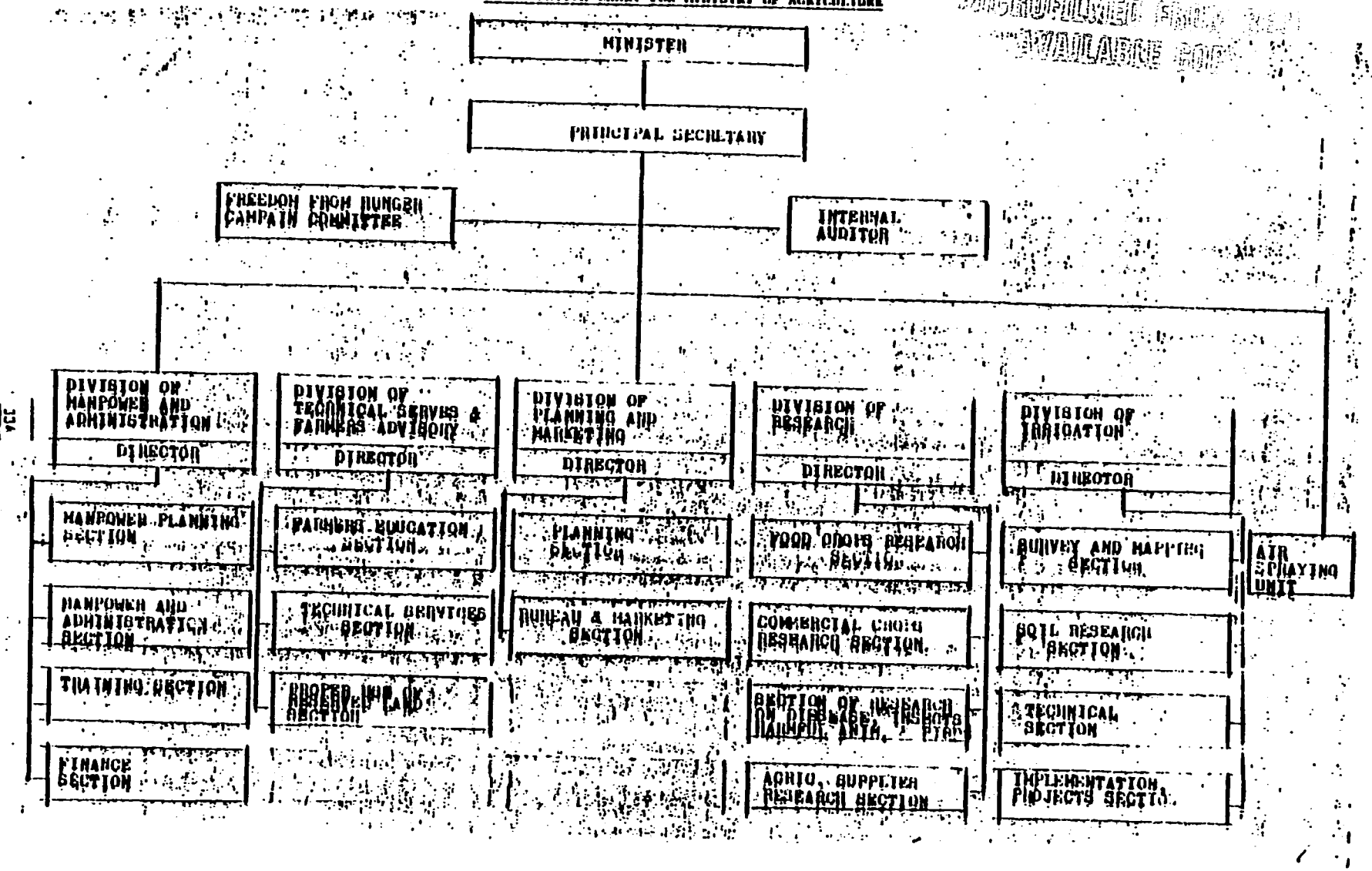
MATI MPWAPWA

Selected*	Returned	Remaining
Shayo	Yes	Yes
Lyakurwa	Yes	No
Sembuli	Yes	No

*Three other staff members were sent for training. Two were returned directly to other MATIs; one has died.

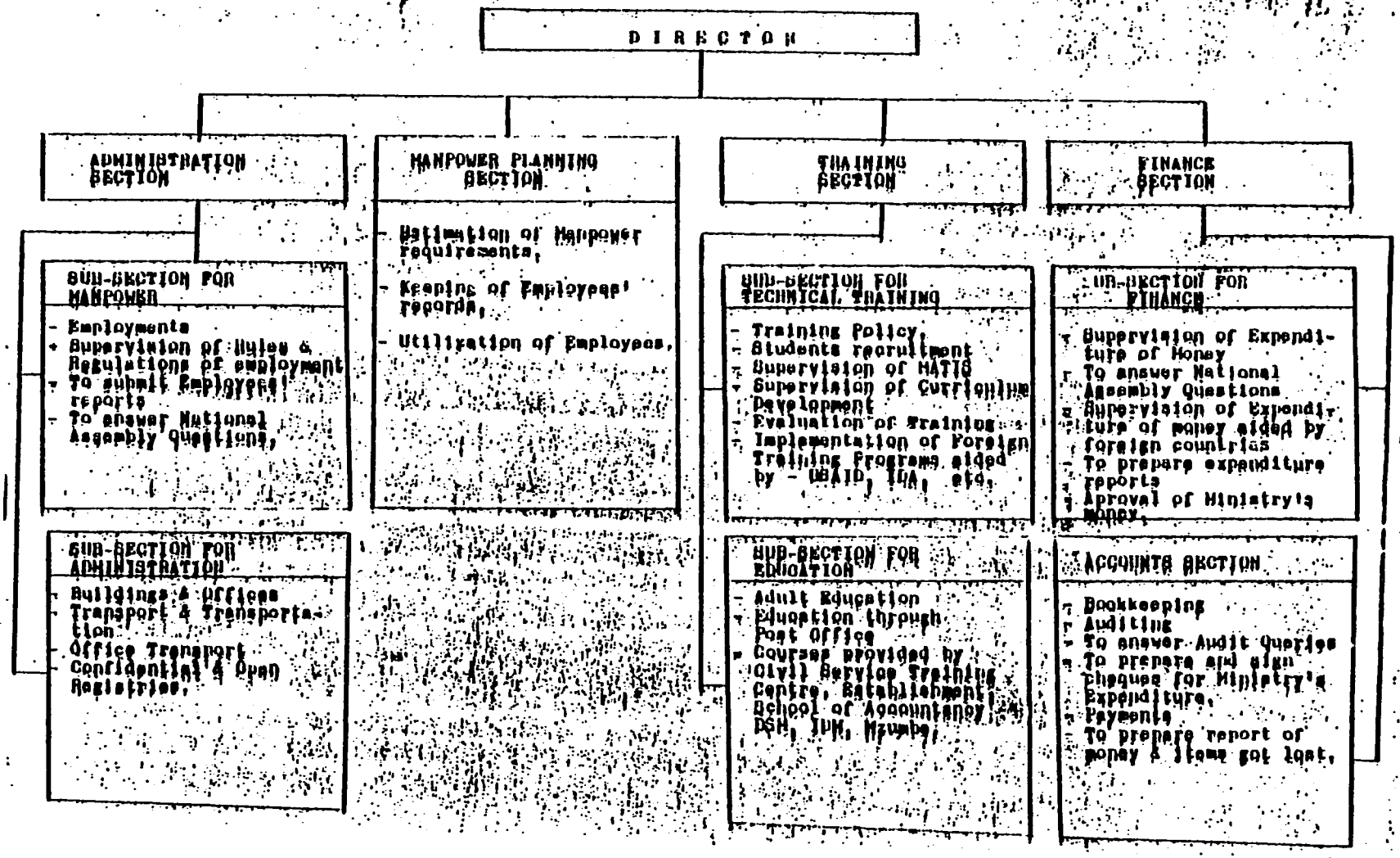
ANNEX 15

ORGANIZATION CHART FOR MINISTRY OF AGRICULTURE



ANNEX 16

ORGANIZATION CHART FOR DIVISION OF MANPOWER AND ADMINISTRATION (Finance, HRD)



ANNEX 17

Tanzanian imports and exports of food crops, 1975/76 through 1978/79

Imports (000 tons)

Product	1975/76	1976/77	1977/78	1978/79
Wheat	41.1	33.6	40.5	60.0
Maize	106.5	41.6	34.2	nil
Rice	20.8	14.9	49.2	36.8
Sorghum	13.5	21.9	16.2	nil
	181.9	112.0	140.1	96.8

Exports (tons)

Maize	nil	nil	nil	49,000
Cassava	n/a	n/a	n/a	70,390
Sorghum	nil	nil	nil	52,272
Bullrush millet	n/a	n/a	n/a	22,962
Finger millet	n/a	n/a	n/a	16,346

n/a = not available

Source: MinAg, Price Policy Recommendations for the 1980-81 Agricultural Price Review. Annex I Cereals (Dar es Salaam, September, 1979).

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ANNEX 18

Trends in National Milling Corporation purchases* of food crops, 1974/75 through 1978/79

Product	1974/75	1975/76	1976/77	1977/78	1978/79
Maize	23.9	91.1	127.5	213.1	222.3
Paddy	24.7	11.7	12.2	24.6	26.9
Rice	--	4.4	6.7	19.1	16.3
Wheat	14.4	24.5	27.1	35.0	27.5
Sorghum	2.0	3.0	10.6	33.6	59.8
Bullrush millet } Finger millet }	2.5	2.2	6.1	14.4	16.8
Cassava	17.3	16.5	4.5	22.3	24.1
Beans	--	--	20.2	36.9	63.2
			11.5	30.3	28.3
	84.8	153.4	226.4	429.3	485.2

Source: MinAg, Price Policy Recommendations for the 1980-81 Agricultural Price Review. Annex I Cereals (Dar es Salaam, September, 1979)

*Some production is marketed outside TanGov channels. Most maize production is for personal consumption and of that sold, only about half moves through TanGov channels. The TanGov purchases almost all wheat production. A small and variable proportion of the other crops are purchased by the TanGov.

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ANNEX 19

Degree Holders in Division of Manpower Development HDQS Staff, 1975 & January 1980

Professional Title	1975	1980	Person filling Post Jan. 1980
Director Manpower Development	DIP	B.S.	Mchechu
Chief Training Officer	DIP	M.Sc.	Rwasa
Professional Training Officer	--	B.S.	Mziray
Technical Training Officer	Expat M.SC.	B.S.	Lulandalla
" " "	Expat PHD	Expat PHD	Pickett
" " "	Expat DIP + Tanz. DIP	DIP	Nkuruvi
Planning Officer Manpower	--	B.S.	Mende
" " "	--	B.S.	Ngirwa
Senior Manpower Management Officer	DIP	DIP	Senkondo
Asst. Manpower Management Officer	CERTI-FICATE	CERTI-FICATE	Njuu
Head, Extension Section	B.S.	M.SC.	Kibwana
Asst. Extension Section	DIP	DIP	Selemani
Nutrition & Curriculum Development Officer	M.SC.	M.SC.	Kaijage
Curriculum Development Officer - Research	--	M.SC.	Ibrahim
Curriculum Development Officer - Materials	--	B.S.	Shayo
Asst. Training Officers	DIP	2 People DIP & CERTIF.	Kayombo & Swai

...../2.

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	1975	1980
TOTAL Professional Staff	12	17
TOTAL Tanzania Professional Staff	9	16
TOTAL B.S. & above	4	11
TOTAL Tanzania B.S. & above	2	10

ANNEX 1 - STUDENT, STAFF, AND COST DATA FOR THE MATI SYSTEM, 1978-79 SCHOOL YEAR

MATI	Location	Total Student Enrollment During 1978-79 School Year	Student Capacities	Staff Strengths June 30, 1979 (Establishment)	Student Teacher Ratio Total	MATI Allocations for 1978-79 in Millions of T. Shs.	Per Student Costs Based on 1978-79 Allocations in T. Millions
Bunda	Bunda	261	268	63	5.7	[illegible]	
Nyakato	Mwanza	249	307	42	5.9	1.8	7229
Tengeru	Arusha	244	320	57	4.3	2	8196
Ukiriguru	Mwanza	225	246	42	5.4	1	4420
Mpwapwa	Mpwapwa	168	137	35	4.9	1.8	7101
Mlonga Kilosa	Kilosa	~~[illegible]~~ 117	134	50	2.3	1.2	10256
Tabori	Tabora	117	70	24	4.9	.8	6055
Mtwara	Mtwara	113	74	24	4.4	1	8696
Ukiriguru	Ukiriguru	114	~~[illegible]~~ 64	26	4.4	1	8772
Morogoro	Morogoro	~~38143-834444~~	102	31	3.9	.718	8651
Mlingano	Tanga	61	53	33	1.9	1	16129
G.V.L. Tanga	Dar es Salaam	31	63	2	*****	.5	16129
TOTAL		1805	1944	420	Ave. 4.5	12.218	Ave. 8001

* Data provided by the Division of Manpower Development, based upon the capacity of the most limited facility, usually hostels where 3m² floorspace was deemed adequate per student.

**Actual funding generally fell short of allocations

***Comparative figures are not presented due to the MATI's status as a parastatal

**** MATI Morogoro retained 135 field staff during the school year equivalent to 45 regular students per full year.

*****As researchers at G.V.L. Tanga assist in teaching, the ratio is unknown.

ANNEX 21

STUDENT ENROLLMENTS AT NATI, BY COURSES 1970-7044

NATI	Agro Vet	Land Use	Lab Tech	Animal Health	Ag. Prod	Agro Mech	Crop Prod	Farm Mgmt.	Home Econ	Nutr	Human Nut	Fish-ery	Range Mgmt	TOTALS
Uyole	24				127		103		27					361
Hyogosi		119				63						68		249
Tengeru	218									26				244
Mlingano	138						88							226
Mpwapwa	135			34										169
Ilonga	86										41			117
Tumbi	117													117
Mtwara	115													115
Maruku	114													114
Mlingano						22		40						62
Morogoro													38	38
CVL-Tanga			31											31
TOTALS	927	119	31	34	127	84	271	40	27	26	41	68	38	1843

*This NATI also conducted 3-month retraining courses for 135 field staff

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ANNEX 22

[illegible] DISPOSITION OF THE MATIA AS OF DEC. 1, 1973

MATI	OFFICE HOLDERS	DIPLOMA HOLDERS	[illegible] HOLDERS	[illegible] HOLDERS	[illegible] HOLDERS	PATRIATES	TOTAL
MATI UYOMBO	16	22	13	1	[illegible]	[illegible]	[illegible]
MATI UKIAKOMBU	13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	43
MATI TEMBERU	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	13
MATI MPWAPWA	[illegible]	14	[illegible]	[illegible]	[illegible]	[illegible]	47
MATI MYANGWI	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	35
MATI MTAMA	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	41
MATI MLINGANO	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	34
MATI [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	31
MATI [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MATI [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MATI [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	24
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	26
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	428

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ANNEX 21

CERTIFICATE AND DIPLOMA TRAINING OUTPUT, MINISTRY OF AGRICULTURE TRAINING INSTITUTES, 1966 through 1979

		1966-70	1971	1972	1973	1974	1975	1976	1977	1978*	1979**	TOTALS
I. CERTIFICATE LEVEL (Pre-Service)												
(a) MATI System (Tanzania)												
	COURSE											
Mlingano	Agro-Vet	340	108	81	142	71	101	88	94	34	83	1126
Nyegezi	Agriculture	474	72	69	81	80	101	84	42	0	0	737
	Land Planning	0	0	0	0	0	273	21	35	30	44	161
Morogoro	Veterinary	149	76	87	89	74	67	76	0	0	0	630
	Poultry	0	0 00	0	11	12	14	14	0	0	0	51
Uyole	Vet and Agro-Vet	0	0	0	0	0	0	0	74	53	68	195
Tengeru	Ag and Agro-Vet	156	00	0	0	0	0	0	0	80	80	316
	Veterinary	81	0	0	0	0	0	0	0	0	0	81
	Dairy	0	0	0	19	20	44	37	48	0	0	168
Hanyigi	Ag and Agro-Vet	0	10	40	45	18	53	35	43	44	45	333
Tuchi	Ag and Agro-Vet	0	0	28	38	24	48	50	50	46	49	333
Ilonga	Nutrition and Agro-Vet	0	0	0	32	28	38	18	0	30	34	197
DVL-Temeke	Lab Technicians	0	3	4	5	9	0	13	0	0	0	34
Mtwara	Ag and Agro-Vet	0	0	0	0	0	0	0	60	45	50	155
Mbeya-Uyole	Ag and Agro-Vet	0	0	0	0	0	0	0	78	30	30	138
	Veterinary	0	0	0	0	0	0	0	42	0	0	42
	Home Economics	0	0	0	0	0	0	0	14	0	0	14
(b) Kenyan Institutions												
Kenya Polytechnic												
Nairobi	Institutional management	2	3	3	2	3	3	3	0	0	0	16
Ahita-Kabete	Range Management	19	10	13	10	8	8	4	1	7	0	87
TOTAL		930	301	344	491	364	(520)	417	600	631	(445)	4777

* Beginning in 1978 most Certificate graduates had followed an Agro-Vet or Multi-Purpose course for the first time.
**The figures are estimates based upon the number of students who sat for exams minus a 3% anticipated failure rate.
In 1979, Uyole students transferred to other MATIs near the end of the academic year.

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EXHIBIT 2 (Cont.)

		1969-70	1971	1972	1973	1974	1975	1976	1977	1978/1979 *	TOTALS
2. DIPLOMA LEVEL (Pre-Service)											
(a) Kenyan Institutions	Courses Prior to 1978										
Egerton College, Njoro	Agric. Engineering	32	11	11	2	0	6	6	6	0	84
	Ag. Husbandry	30	12	9	8	0	5	6	11	0	81
	Range Mgmt.	27	10	7	3	0	5	6	7	0	65
	Dairy Tech.	11	3	4	1	0	3	1	0	0	19
	Agric. Education/Ext.	0	0	6	4	0	6	6	1	0	23
	Home Economics	0	0	0	1	0	6	4	1	0	16
	Farm Management	0	0	0	0	0	0	2	9	0	11
	Horticulture	0	0	0	0	0	0	1	0	0	1
3. DIPLOMA LEVEL (In service)											
(a) MATI System - Tanzania											
Uyogori	Irrigation (2 yrs.) (2 yrs.)	0	0	0	0	0	0	0	0	0	0
	Agro-Mech. (2 yrs.)	0	0	0	0	0	0	0	0	19	19
Tengeru	Horticulture (1 yr)	0	00	0	0	0	0	0	0	289	29
Mlingano	Agro-Mech. (2 yrs)	0	0	0	0	0	0	22	24	0	46
	Farm Management (2 yrs.)	0	0	0	0	0	0	0	29	0	29
Uyole	An. Health (2 yrs)	0	0	0	0	0	0	79	0	40	0	119
Horogoro	Ranch Management (1 yr)	0	0	0	0	0	36	34	0	33	0	103
Ukiriguru	Crop Production (2 yrs)	0	0	0	0	0	0	30	0	33	0	63
Mapya-Dyale	An. Prod. (2 yrs)	0	0	0	0	0	0	0	43	41	44	128
	Crop Prod. (2 yrs)	0	0	0	0	0	0	0	29	30	58	117
	Ag. Hum. Ed. (1 yr)	0	0	0	0	0	0	0	31	31	94	156
Ilonga	Nutrition (1 yr)	0	0	0	0	0	0	18	0	22	0	34
CVL-Tanaka	Lab. Tech. (1 yr)	0	0	0	0	0	0	0	15	0	12	27
TOTALS		4[illegible]	10	35	35	20	0	66	221	219	230	256	[illegible]

Key: * Number of student who sat for examinations in May 1979

NB: All Diploma courses are now of two years duration, although normal numbers do not have normal intakes

ANNEX 24

PROJECTED OUTPUT OF PROFESSIONAL AND TECHNICAL AGRICULTURAL MANPOWER FROM EDUCATIONAL/TRAINING INSTITUTIONS, 1979-80 THROUGH 1986-87, REQUIRED TO CLOSE THE 1986 SUPPLY/DEMAND GAP

LEVEL	79/80	80/81	81/82	82/83	83/84	84/85	85/86	86/87	86/87 TOTALS
Certificate Output	496	537	621	691	924	924	924	924	[illegible]
Diploma Output	412	406	274	275	275	275	275	275	2,348
B. Sc. Output									
Domestic	48	57	52	94	94	94	94	94	621
Foreign	24	6	31	101	63	56	52	56	391
TOTAL	68	63	83	195	157	150	146	150	1,012
Post Graduate Diploma Output	9	9	9	9	9	9	9	-	63
M. Sc. Output									
Domestic	28	15	25	26	27	28	29	29	207
Foreign	35	28	48	63	43	21	21	21	280
TOTAL	63	43	73	89	70	49	50	50	[illegible]
Ph. D. Output									
Domestic	2	0	3	5	7	7	9	9	42
Foreign	3	6	3	16	12	12	14	14	80
TOTAL	5	6	6	21	19	19	23	23	[illegible]
OVERALL TOTALS	967	1014	1156	1280	1221	1193	1194	1189	9,194

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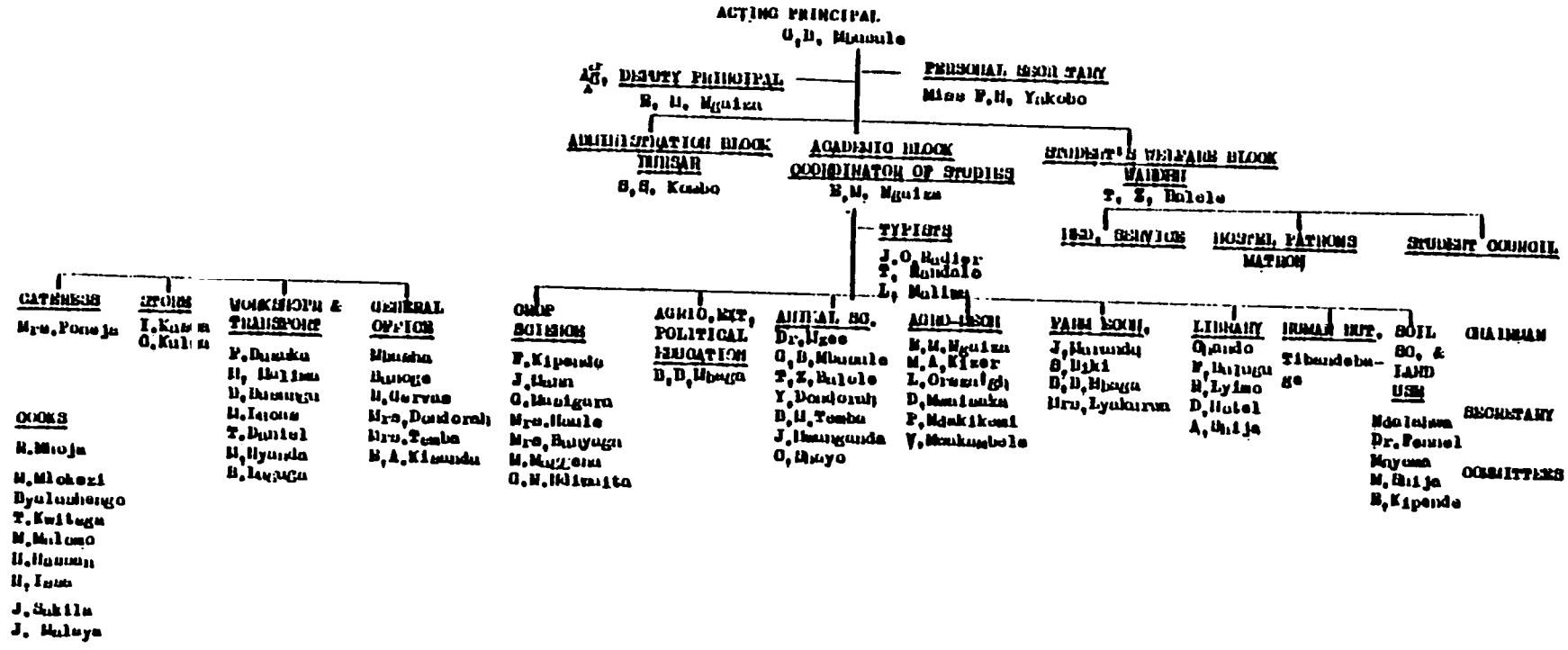
ANNEX 25

ORGANIZATION CHART – M.A.T.I. UKIRIGURU



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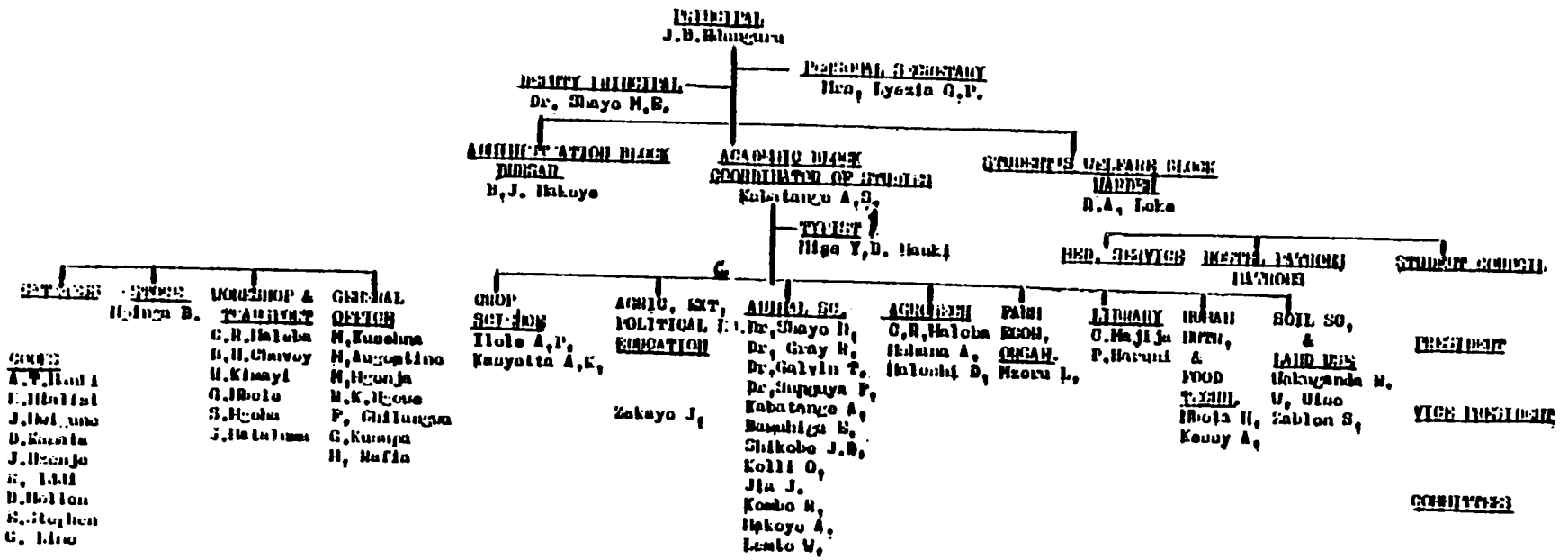
ORGANIZATION CHART - H.A.T.I. IBADAN

ANNEX 26



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ANNEX 27

List of USAID supplied equipment, MATI Ukiriguru

INVENTORY OF MATIU AGROMECHANICS EQUIPMENT

Item	Comment
1. Table Saw, Rockwell 10"	Used by workshop and carpentry staff in workshop
2. Drill Press, Wilton 15"	Used by workshop staff in workshop
3. Bench Grinder, Baldoar 8"	"
4. Arc Welder, Airco 225 Amp	"
5. Oxy-Acetylene Torch Set, Victor	One used by workshop staff in workshop. One in storeroom.
6. Portable Disc Grinder, Rockwell 7"	One used by workshop staff in workshop. One in storeroom.
7. Orbital Pad Sander, Skil	In workshop tool store, used by checkout.
8. Electric Drill, Miller's Falls ½"	"
9. Electric Drill, Skil 3/8"	"
10. Belt/Disc Sander, Toolkraft	"
11. Air Compressor, Englo	In operation in workshop.
12. Air Compressor, Englo	In workshop storeroom. Compression tank only (engine stolen).
13. Circular Saw, Miller's Falls 8½"	In workshop tool store. Motor ruined.
14. Battery Charger, Schauer 6/12 volt	In workshop tool store, used by checkout.
15. Maize Planter, Burch 4 row	In workshop. Assembled as 3 row unit for teaching and field use. 1 row stored.
16. Disc Harrow, John Deere	In workshop. In use for field and teaching.
17. Rotary Mower, Terrain King	In workshop. One operational, one with broken P.T.O. shaft and slip clutch.
18. Trailer, Burns & Blaine	In workshop. Two operational (tires missing).
19. Mouldboard Plough, Ford, 3 bottom	Operational in workshop.
20. Cement Mixer, Cherokee ½ yd^3	Operational in workshop.
21. Row Cultivator, SpeeCo	Unassembled, some parts missent by shipper.
22. Hand Tools, Carpentry	In workshop.
23. Hand Tools, Mechanics	In workshop tool store, used by checkout.
24. Hand Tools, Metalworking	"

Source: WVU-NCATSU Project Staff

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AID EQUIPMENTS IN THE VISUAL AIDS STORE

NAME OF EQUIPMENT	NUMBER	CONDITION	REMARKS
1. Screen W. Tripod 70x70	1	Okay	
2. Screen W. Mount 70x70	1	Okay	
3. Technicalor Teaching Projector	1	Needs checking	
4. Technicolor Instant Movie Film Projector	1	Out of order	
5. Califone Player & Speakers	1	Player out of order	
6. Viewlex (35mm) slide Projector	1	Okay	
7. Viewlex Automatic (16mm) film Projector	1	Out of order	
8. 3M Overhead Projector & bulb	5	Okay	
9. Transformer	1	Okay	
10. Ken A. Vision Projector	1	Okay	
11. Automatic slide Projector	1	Okay	
12. Slide Corouser	10	Okay	
13. Viewlex Previewer Projector	1	Okay	
14. I set of small size screw drivers.	1	Okay	

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ITEMS RECEIVED ANIMAL SCIENCE LABORATORY

	TOTAL
Aluminum cattle leaders	9
Animal clippers	6
Black ink for tags	3 bottles
Bull rings	47
Bull leaders	10
Burdizze emasculatome castrators	5
Cattle hand brush	20
Cattle trocar	1
Calf sehorners with wooden handles	2
Clipping blades	8
Cleaver 1½ lb.	1
Curry combs with tail comb	6
Ear notchers small size	4
Ear notchers large size	5
Elastrators rings	2,759
Elastrators	6
Ford stethoscope	2
Horn branding irons	12
Handy hoof trimmer and dehorners	2
Hoof nippers	5
Hoof and searcher knives	11
Hoof chisel	6
Hay hook	2
Improved keystone dehorners	2
Keystone dehorners handles	4
"Kantslips" cattle leaders	6
Large ear tags	496
Manure fork	11
Metal curry combs	6
Milk and teat tubes	71
Mouth speculum	1
Milk scale	1
No-kick cow hobbles	5
Plain rasps	4
Pig teeth nippers	5
Plain emasculators	2
Professional and home sheep shearing machine	2
Rigged sheep shear	1
Sandwick bow saw	4
Stainless steel branding irons	15
Single-edge blades	250
Shoat rings pig rings	394

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Shoe rasp	3
Teat slitter	2
Teat tumor extractors	2
Test tubes	246
Veterinary injections pumps	2
White ink for tags	3 bottles
Hoof pick	6
Bulkfat gauge	7
Surgeon gloves	5 pair
Shoulder length gloves	1000
Electric dehorner	1

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ANIMAL SCIENCE EQUIPMENT

Missing Equipment

Sticking knife	1
Sharpening stones	2
Milkscales	2
Skinning knives	2
Boning knives	2
Meat cleaver	1
Knife steel	1
Teat tumor extractors	4
Mouth speculum	1
Ear notchers	2
Castrating knives	9
Cattle trocar	1
Butcher knives	2

MICROFICHE
AVAILABLE

CROP SCIENCE LABORATORY

Peat pots	500	Being used
Plastic pots (6")	500	being used up to 50 times
Platform balances	2	o.k.
Triple beam balance	1 (gm.)	o.k.
Triple beam balance	1 (oz.)	useless
Razor blades (single edge)	250	being used
Maize sheller		o.k.

OFFICE EQUIPMENT

Facit typewriter	1	o.k. in use
4 drawer filing cabinets	5	4 - o.k. 1 - broken lock
3M photo copy machine	1	o.k. in use
Punches, pencil sharpeners, etc.		o.k., in use

LIBRARY

Books	all on shelves available for use (checkout or reference)
Magazine rack	in use

MICROFICHE
AVAILABLE

USAID EQUIPMENT USAGE LAND USE DEPARTMENT MATI UKIRIGURU

		Percent Usage
Microscopes	8	80%
Large Balance	2	60%
Glassware	(composite)	15%
Farm levels	10	80%
Staff rods (targets)	10	80%
Compasses	10	80%

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ANNEX 28

List of USAID Supplied Equipment, MATI Mpwapwa

USAID [illegible]

Date	Issue Note Number	Description	Qty.	Remarks
17/7/76	442551	Viewlex Sound Projector	1	Visual Aid - Good
17/7/76	442551	Viewlex Slide Projector	1	Visual Aid - Good
17/7/76	442551	Overhead Projector	1	Visual Aid - Good
17/7/76	442551	Micro Projector	1	Visual Aid - Good
17/7/76	442551	Black-board Projector	4	Class Rooms - Good
17/7/76	442551	Blackboard Set Square	4	In Stores - Good
17/7/76	[illegible]	Blackboard Compass Chalk	4	In Stores - Good
17/7/76	442551	De-lite White Screen	1	Visual Aid
17/7/76	442551	De-lite Picture Ring screen	1	Visual Aid
17/7/76	442554	Maize Planter Complete	1	Good
17/7/76	442555	Gas Cooker	2	Grade 1 Housing
9/8/76	442564	High Speed Desk Top Copier	1	On Use
9/8/76	442566	Ring Brand Rotary Slasher	1	Good - On use
1/10/76	442569	Hand Maize Sheller	1	Good - In Store
1/10/76	442569	Dyne Tapemaker	1	Good - In Store
1/10/76	442569	Gas Cooker	1	Grade 1 Housing
10/11/76	442573	John Deere Disc Harrow	1	Good
10/11/76	442574	Microscopes Model 160	6	Laboratory - Good
10/11/76	442575	4 Drawer Filing Cabinet	5	Admn. Block - Good
10/11/76	442575	Magazine Rack	1	Library - Good
10/11/76	442580	Animal Clipper Wooden Hand	14	In Stores - Good
10/11/76	442580	Hoof Nipper	7	In Stores - Good
10/11/76	442580	File Rasp Half Round	4	Used
10/11/76	442580	Hoof Chisel	12	5 on use - 7 in store
10/11/76	442580	Rasp 14"	7	Used
10/11/76	442580	Hoof Knives	26	Lab. and Stores - Good
10/11/76	442580	Hoof Pick	7	2 used - 5 in Stores
10/11/76	442580	Pig Teeth Nippers	13	4 on work - 9 in stores
10/11/76	442580	Ear Notcher	7	In Stores - Good
10/11/76	442580	Sheep Shear	3	In stores - Good
10/11/76	442580	Hot Shear	8	On use.
10/11/76	442580	No-Kick Cow Hobble	18	In Stores - Good
10/11/76	442580	Surgeon Gloves (Pairs)	60	Used - Laboratory
10/11/76	442580	Heavy Shoulder Long Gloves Pairs	20	Laboratory - On use
10/11/76	442580	Veterinary Stethescope	3	Laboratory - Good
10/11/76	442580	Needle Holder	12	Used - Pair Laboratory
10/11/76	442580	Saw Wires	6	Used - Pair
10/11/76	442580	Saw Handle	2	On Use - Laboratory
10/11/76	442580	Cannulas	9	In Stores - Good
10/11/76	442580	Milk Tubes (pairs)	18	In stores - Good
10/11/76	442580	Teat Dilators	18	Good
10/11/76	442580	Teat Clitters	4	Good - In stores
10/11/76	442580	Injection Pump	3	In Stores - Good

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Date	[illegible]	Description	Qty.	Remarks
10/11/75	442580	Stomach Tubes	5	In stores - Good
10/11/75	442580	Cattle Trocar	4	Lab. & Stores - Good
10/11/75	442580	Hoceth speculum	4	Lab. & Stores - Good
10/11/75	442580	Burdizzo clamp L.	8	In stores - Good
10/11/75	442580	Burdizzo clamp M.	8	In stores - Good
10/11/75	442580	Burdizzo clamp S.	8	In stores - Good
10/11/75	442580	Castrating Knives	42	Some on work
10/11/75	442580	Elastrator	14	In stores - Good
10/11/75	442580	Elastrator Ring (pk.)	1	Some used
10/11/75	442580	Emasculator	3	Lab. & Stores - Good
10/11/75	442580	Electric Dehorner	3	In stores - Good
10/11/75	442580	Heat Dehorner	8	In stores - Good
10/11/75	442580	Animal Clipper	3	In stores - Good
10/11/75	442580	Clipping Blades	6	In stores - Good
10/11/75	442580	Clipping Blades	6	In stores - Good
10/11/75	442580	Hand Brushes	30	Used
10/11/75	442580	Curry Combs Round	3	In stores - Good
10/11/75	442580	Curry Combs with hand	3	In stores - Good
10/11/75	442580	Bull Rings	84	72 In stores - Good
10/11/75	442580	Scale Beam Box	3	In stores - Good
"	"	Bull Leaders	14	In stores - Good
"	"	Cattle Leaders	14	In Stores - Good
"	"	Cattle Leaders with Belt	8	In Stores - Good
"	"	Ear Notcher	16	Stores & Lab. Good
"	"	Large Tags	500	Some used
"	"	Tag Installing tool	12	Some on work
"	"	Fence stretchers	2	Good - In stores
"	"	Hand Probe Puller	12	Some on work
"	"	Hog catchers	2	Piggery Unit
"	"	Hill Hog Rings (Box)	5	In stores - Good
"	"	Hog Ringers	2	Piggery & Lab.
"	"	Knapsack sprayers	2	On use - Unit
"	"	Hay Hook	6	In stores - Good
"	"	Calf Dehorner	2	In use - Lab.
"	"	Electric Burner	10	In store - Good
"	"	Russell Sticking Knives	2	Poultry
"	"	Knive Sharpen stove	2	Used
"	"	Dehorning Saw	2	Unit
"	"	Dehorner-Large	2	In stores - Good
"	"	Milk Scale	4	Dairy & Stores
"	"	Skinning Knives	5	Laboratory
"	"	Boning Knives	5	"
"	"	Butcher Knives	5	"
"	"	Meat Tenderer	2	Kitchen

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DATE	ISSUE NOTE NUMBER	DESCRIPTION	QTY.	REMARKS
10/11/76	442680	Steel Knives	2	Laboratory
"	"	Hoof Trimmer	7	In Stores - Good
"	"	Branding Iron	3	In Stores - Good
"	"	Post Hole Digger	12	In store - Good
"	"	Tongs	6	Pillory
"	"	Manure Fork	5	On work
"	"	Hay Fork	6	"
"	"	Hay-Stone Debarner	1	In store - Good
"	"	Barn Scrapers	2	Used
9/4/77	442687	Duplicating machine Banco Model 475	1	Visual Aid - Fair
1/5/77	442591	Scale Balance - 20kg.	2	Nutrition - Good
"	442591	Laboratory Tool Kit	1	Laboratory
"	"	Glass Covers	50	In stores - Good
"	"	Hot Plate 220 volt	1	Nutrition - Good
"	"	Soil Testing Kit	2	Land Use - Good
"	"	Filter Papers (3oz)	5	In stores - Good
"	"	Magnifiers 20x	3	" "
"	"	Assorted Conic Stoppers	1	Some used
"	"	Funel Cylinder Separator	1	In stores - Good
"	"	Burret Teflon Aut Kr	5	" "
"	"	Burret 50 ml	6	" "
"	"	Graduated Cylinder	20	" "
"	"	Buchner Funnels	2	" "
"	"	Crucibles porcelain	12	Some used
"	"	Pipet 15 Kr	25	"
"	"	Evaporating Dishes	24	"
"	"	Mortar and Pestle S.	24	" Labor.
"	"	Mortar and Pestle S.3	24	" Labor.
15/1/77	442687	File Cleaner Brushes	6	Workshop
"	"	Wood Rasp 12"	5	"
"	"	File Flat 18"	18	"
"	"	File Flat 10"	18	"
"	"	File Flat ½ round	18	"
"	"	File Round 9"	18.	"
"	"	File Square 9"	18	"
"	"	Handles for File	48	Workshop & Stores
"	"	Soldering Iron	3	"
"	"	Hacksaw Frames	6	"
"	"	Spirit Level 9"	3	"
"	"	Spirit Level 18"	3	"
"	"	Spirit Level 24"	3	Workshop
"	"	Nipper Cutter 9"	3	Workshop

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DATE	[illegible] NUMBER	DESCRIPTION	QTY.	REMARKS
15/1/77	442681	Pincher 8"	3	Workshop
"	"	Pincher 10"	3	"
"	"	Slip joint Plier 6"	6	"
"	"	Slip joint Pliers 8"	6	"
"	"	Slip joint Pliers 10"	6	"
"	"	Pickup Tongs	3	"
"	"	Butane Torch	4	In stores
"	"	Punches 5/8" x 10"	3	Workshop
"	"	" ½ x 10"	3	"
"	"	" ¾ x 10"	3	"
"	"	Cold Chisels	6	"
"	"	Chisel Round Nose	3	"
"	"	HD Safety Gloves	3	"
"	"	Pipe Wrenches 14"	3	In Stores
"	"	" " 18"	3	"
"	"	Reaming Tool 10"	3	"
"	"	Socket Spanner ½" (Set)	2	Workshop
"	"	Drive Socket Sets	2	Workshop
"	"	Metric Socket Sets	2	"
"	"	Screw Driver Sets	3	"
"	"	Pipe Vice	2	In store
"	"	Pipe Die Set	1	Plumber
"	"	Philips Screw Drivers (Set)	3	Workshop
"	"	Breast Drill	4	In Stores
"	"	Bow Saw 30"	4	In stores
"	"	Funnel Galv.	2	Workshop
"	"	Oil Cans	4	In stores
"	"	Meter Sticks	2	"
"	"	Punches Set	3	Workshop
"	"	Glass Cutter	6	"
"	"	First aid Kits	2	Dispensary
"	"	Tin Snip 10"	3	
"	"	Tin Snip 8 lbs	3	In stores
"	"	Hammer 8 lbs	3	In stores
"	"	Tee Squares	6	In stores
"	"	Workshop Vice	5	
"	"	Adjustable wrench 12"	6	
"	"	Adjustable Wrench 10"	6	
"	"	Adjustable Wrench 8"	6	
"	"	Adjustable wrench 5"	6	
"	"	C. Clamp	6	
"	"	~~Welding Gloves~~	4	
"	"	Welding Aprons	2	
"	"	Welding Face Shields	4	In stores

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DATE	[illegible]	DESCRIPTION	QTY.	REMARKS
15/1/77	442581	Welding Goggles	2	In Stores
"	"	Chipping Hammer	2	In stores
"	"	Gas Welding Set	1	In store - Good
"	"	Brace Jackets	5	In store - Good
"	"	Jack Plane 2" Cutter	6	In store - Good
"	"	Smooth Plane 2" cutter	6	In store - Good
"	"	Block Plane 15/3" cutter	6	1 Broken
"	"	Nail Claw 10½"	3	In store - Good
"	"	Tin Snips Stanley 10"	3	2 Broken
"	"	Tin Snips Stanley 12"	3	Workshops
"	"	Sledge Hammers 4 lb.	2	Workshop
"	"	Ball Pein Hammers 1 lbs.	5	"
"	"	Ball Pein Hammers 1½ lbs	6	In stores - Good
"	"	Spokeshave Blade 2½"	3	2 in stores
"	"	Flat carpenters squares	5	In store - Good
"	"	Wood Chisels (Set)	3	Workshop
"	"	Handsaws	6	In store - Good
"	"	Handsaws Stanley	5	- do -
"	"	Putty knives stanley	4	In stores - Good

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TSA AND INVENTORY

DATE	ISSUE NOTE NO	DESCRIPTION	QTY	REMARKS
15/1/1977	442881	Measuring tape	6	4 in stores-Good
- " -	"	Folding wood measuring	3	Carpentry-Fair
- " -	"	Paint scrapers W/changeabll	3	in store-Good
- " -	"	Anvils 100 lbs	2	in workshop
- " -	"	Auger bits 1"	6	In stores-Good
- " -	"	Auger bits ¾"	6	In stores-Good
- " -	"	Auger bits ½"	4	Issued to work
- " -	"	Auger bits ⅜"	5	In stores Good
- " -	"	Auger bits ¼"	4	In stores Good
28/3/1977	[illegible]	Shipping trailers	2	Garage-Fair
29/8/1977	442838	Kodak slide projector	-	Visual aid
- " -	"	A.O. student microscopes	12	In store-Good
- " -	"	Califone record player	1	Visual-aid-Good
- " -	"	Overhead visual preparation	1	Visual aid
- " -	"	Keuffel No 2 transit	10	Land survey-Good
- " -	"	Miros Electric Welder-complete	1	In stores-Good
- " -	"	Student note books	38	Issued to students
- " -	"	Dalite projectoin screen	1	Visual aid
- " -	"	220-110 volt transformer	1	Visual aid
- " -	"	Block stackle fence stretchers	2	In stores Good
- " -	"	Miros sign maker kit	1	Visual aid
- " -	442887	13 Ounce rip claw hammer	11	In store Good
- " -	"	Carousel slide trays 80 slide	1	In stores
- " -	"	Carousel slide trays 140 slide	1	In stores Good
- " -	"	12" Wood rasps	8	In stores-Good
- " -	"	Allen Wrench set-std sizes	1	In stores Good
- " -	"	Allen Wrench set-metric	1	- " -
- " -	"	14 Foot long chain ⅜"	1	Workshop
- " -	"	Branding Irons set	1	In stores-Good
- " -	"	Nylon tow strap	1	Issued to work
5/8/1977	442900	Powell 8½"	2	In stores-Good
- " -	"	Milton S. Clamp	5	In stores-Good
- " -	"	Pump oil can	4	In stores-Good
- " -	"	Spindle lever with plums	3	In stores-Good
- " -	"	Nipper 8" with grips	3	Workshop
- " -	"	Pincer 8"	3	- " -
- " -	"	Pincer 10"	2	- " -
- " -	"	Jack plane 2" cutter 14" long	5	- Carpentry
- " -	"	Smooth plane 2" cutter 9½" long	5	Carpentry
- " -	"	Block plane 1⅝" cutter 7" long	5	Workshop
- " -	"	Slip joint pliers 8"	5	- " -

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DATE	ISSUE NOTE NO	DESCRIPTION	QTY	REMARKS
8/5/1977	4428700	Slip joint pliers 10"	6	- do -
- " -	"	Slip joint pliers 6"	6	- do -
- " -	"	Nail claw 10½" longil stock	3	In stores-Good
- " -	"	Tin snips straight pattern 10"	3	Workshop
- " -	"	Bloodroker vise 4" x 10"	6	In stores-Good
- " -	"	Tin snips straight pattern	3	Workshop
- " -	"	Auxillity work shop vise	6	Workshop
- " -	"	Double Pick-up tongs 18"	3	Workshop
- " -	"	Ball pein hammer 16 OZ	6	- do -
- " -	"	Ball pein hammer 24 oz	6	- do -
- " -	"	Solid steel head hammer	12	Carpentry
- " -	"	Spokeshave blade 2-½"	3	Carpentry
- " -	"	Flat carpenters square 24" x 18"	6	In stores-Good
- " -	"	Center punch 5" x 12 3/16"	3	Workshop
- " -	"	Starter punch	3	- do -
- " -	"	Pin punch	3	- do -
- " -	"	Starter punch	3	- do -
- " -	"	pin punch	3	- do -
- " -	"	A mitre try square	6	In stores-Good
- " -	"	A Luminum Level	3	In stores-Good
- " -	"	A measuring tape	6	In stores-Good
- " -	"	Folding wood measuring rule	3	Carpentry
- " -	"	Air cooled ARC welding transformer	1	Morogoro
- " -	"	Cable for above	1	- do -
- " -	"	Electro holder for above	1	- do -
- " -	"	Earth clamp	1	Morogoro
- " -	"	Welding gloves	4	Workshop
- " -	"	Welding aprons	2	In stores
- " -	"	Welding face shield	4	Workshop
- " -	"	Chipping hammers	2	In stores
- " -	"	Welding goggles	2	In stores
- " -	"	Journey man kits	1	Visual aid
- " -	"	Auger bit ½" solid center	1	Carpentry
- " -	"	- " - 7/16" - " -	1	and workshop
- " -	"	- " - 7/8" - " -	1	- do -
- " -	"	- " - 1" - " -	1	- do -
- " -	"	- " - ½" - " -	4	- do -
- " -	"	- " - ¼" - " -	4	- do -
- " -	"	- " - ½" - " -	4	- do -
- " -	"	- " - ¼" - " -	4	- do -
- " -	"	- " - ½" - " -	4	- do -

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DATE	ISSUE NOTE NO	DESCRIPTION	QTY	REMARKS
6/8/1977	442200	Auger Bit 1" solid center	4	- " -
- " -	"	½" LB Soldering coppers straight square	2	
- " -	"	1 LB Soldering copper straight square	1	
- " -	"	Hack saw blade single edge 12"	36	Workshop
- " -	"	Auger brace ratchet 12"	6	- do -
- " -	"	File cleaner brush	6	- do -
- " -	"	Wilton assembly clamp 8"	2	In stores
- " -	"	Hack saw frame	6	Workshop
- " -	"	Forge protable 24"	1	Workshop
- " -	"	Spirit level with plumb 9"	3	Workshop
- " -	"	Spirit level with plumb 18"	3	In stores
- " -	"	Paint scrapers	2	Carpentry
- " -	"	Cold chisel ½" point	3	Workshop
- " -	"	Diamond point chisel	3	- do -
- " -	"	Cold chisel ½" point	3	- do -
- " -	"	Round nose chisel ½"	3	- do -
- " -	"	Heavy duty safety gloves	3	- do -
- " -	"	Wood rasp 12" half round	6	In stores.
- " -	"	Wood rasp 12" flat	6	In stores
- " -	"	Rigid pipe wrench 14"	3	One broken
- " -	"	Rigid pipe wrench 18"	3	In stores-Good
- " -	"	Allen key wrench set	1	Workshop
- " -	"	Allen key wrench set	1	- " -
- " -	"	Fence tool & staple puller	3	In stores
- " -	"	Hand file flat 10"	18	Workshop
- " -	"	Hand file ½ round	18	- do -
- " -	"	Hand file flat 10"	18	- do -
- " -	"	Hand file round 8"	18	- do -
- " -	"	Hand file square 8"	18	- do -
- " -	"	Handles for files W/Steel	48	- do -
- " -	"	½" pine socket set 17 pe	2	In stores
- " -	"	13 Pe ½" drive socket	2	Workshop
- " -	"	Metric socket set	2	- do -
- " -	"	Rigid Adj. Wrench	6	- do -
- " -	"	Rigid Adj. Wrench	6	- do -
- " -	"	Rigid Adj. Wrench	6	- do -
- " -	"	Rigid Adj. Wrench	6	- do -
- " -	"	Screw driver set for straight	3	- do -
- " -	"	Wilton combination pipe	3	- do -
- " -	"	British std pipe tap	1	- do -
- " -	"	Phillips screw driver	3	- do -
- " -	"	Phillips screw drivers	3	- do -

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DATE	[illegible] NUMBER	DESCRIPTION	QTY.	REMARKS
6/9/77	442700	Phillips Screw Drivers	3	Workshop
"	"	Phillips Screw Drivers	3	"
"	"	Chisels wood	3	"
"	"	Hand saw Light Weight	6	"
"	"	Breast Drill 2 speed ½"	4	In stores
"	"	Hand saw Light weight	6	Workshop
"	"	Bow Saw for 30" Blade	4	In store - Fair
"	"	Putty Knife	4	Workshop
3/10/77	799001	Sewer Paper rods	12	[illegible]
"	"	Needle Nose Pliers	3	Workshop
"	"	Centrifuge Tube	80	In Store
"	"	Third cut file Folders	1	Registry
"	"	Pencil sharpeners	5	Admin. Block
"	"	T I - SR 40 Calculators	6	In stores - Good
"	"	Paper cutter	1	Visual Aid
"	"	3 ring Binders 1" & 2"	20	Registry
"	"	Adjustable Punches	2	Workshop
21/11/77	799007	Cartons Copier Paper	8	Registry 5 - 3 in store
2/12/77	799011	Cartridges of Multi-	100	Workshop - Finish
"	"	Lincoln Grease gun	2	Workshop
"	"	Head Rest Creeper	1	"
"	"	Steel Character Dies - No. set	1	"
"	"	Steel character Dies - Letters Set	1	"
"	"	Steel Tote Trays	20	In stores
"	"	Wrecking Bars 24"	4	" - Good
"	"	Welders cup Goggles No.5	7	Workshop
"	"	Manilla rope ½" coil	1	"
"	"	Manilla rope 5/8" coil	1	"
"	"	24 ½ Electric Hand Drill	1	Workshop - Good
"	"	24 ½" Electric H/Drill	1	" "
"	"	Chippers Goggles Pr.	6	"
"	"	½ HP Bench grinder	1	" - Good
"	"	7" 24 Electric disc grinder	1	" "
"	"	3 ton hydraulic Jacks	2	" - out of order
"	"	5 ton hydraulic Jacks	1	" - Out of order
"	"	Welder helmets No.10 shade	2	In stores
"	"	1½ ton Schain hoist	1	Workshop - Good
"	"	8½" HD Skilsaw W/two	1	Maragaro
"	"	Cylinder Hand trucks	2	Workshop
"	"	GP Pump Oilers	4	
"	"	Hand Shields No.10 Shade	2	In stores
"	"	5 Gallon Jerry cans	5	Workshop
"	"	Combination disc/belt sander	1	Workshop

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Date	Issue Voucher Number	Description	Qty.	Items
2/12/77	799011	[illegible] Bolt cutter	3	In stores
"	"	Saddle Stands [illegible]	2	Workshop
"	"	Twinkle change 6/12 volt	1	Workshop
"	"	Hand Grinding Machine	2	"
"	"	Orbital Sander Electric	1	In stores — Good
"	"	Hi-clad 30m steel tapes	12	"
"	"	Hi-clad replacement tapes	5	"
"	"	10" Tilting arbor table	1	In stores — Good
"	"	15" Drill Press Complete	1	Workshop
"	"	[illegible] Wheelbarrows	20	"
"	"	[illegible] copier Paper	8	Workshop
5/1/78	799017	Pinnotile A-J Table	1	In store — Good
9/1/78	799019	Packer single edge razor	50	In stores
"	"	Peat Planting Pots [illegible]	1	Workshop
"	"	Plastic Planting Pots	500	Workshop
"	"	Half Pint display Bottles	250	In stores
"	"	Double Beam Platform	1	Animal Science
13/2/78	799022	Card Catalog cabinet	1	Library
"	"	Harvard Scales	2	Nutrition
"	"	Set of scale weights	1	Nutrition
"	"	Load Binders	4	In stores
"	"	Spark Lighters	2	"
"	"	Bar replacement Chisels	1	Workshop
"	"	[illegible] countersinks	2	In stores
"	"	[illegible] Countersinks	2	"
"	"	Expansion bit	1	"
"	"	Compass Saw W/Handles	4	Carpentry
"	"	Tubing cutter	1	In stores
"	"	Flaring tool	1	In stores
"	"	Mitre Box	1	In stores
"	"	Long Chains 3 by 14 feet	4	Workshop
"	"	Seed Scale	1	
"	"	Automotive Tune-up Instrument	1	
"	"	Micro Kjeldahl Apparatus	1	
"	"	Teaching Wall Charts	5	Visual Aid
"	"	3 Drawer lateral file case	1	Admin. Block
"	799023	Max. Min. thermometer	1	Laboratory
"	"	Hi-pressure Tyre Pump	2	Workshop
10/4/78	799024	Tasco Wall chart	1	Visual Aid
"	"	Set Masonry Drills	1	Workshop
"	"	Set Steel Twist Drill Bits	1	"
"	"	Set Dry-out screw Extractors	1	"
"	"	Needle-Nose Pliers	1	"
"	"	Accumulator/charger for T.V.	1	In stores

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DATE	ISSUE NOTE NUMBER	DESCRIPTION	QTY.	REMARKS
13/10/78	799026	Dymotape Refills	12	Issued for Use
"	"	6 x 48 Sanding Belts 100x	10	
"	"	DBK Projector Bulbs	3	Visual Aid
"	"	No. 0 Cover Glasses	16	In stores
"	"	Magazine Holders	24	Library
"	"	Lentool Bead Breakers	1	
"	"	Battery Testers	5	Workshop
13/10/78	799026	Replacement chalk lines	4	In stores.

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Source: MATI Magazine

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ANNEX 29

29 April 1980

Recent Donor Assistance Projects in the MATI System

(Estimates)

Donor and Project	Location & No.Staff		Construction	Participants	Commodities
Dutch Government Hort Project	Tengeru	7	Major	Yes	Yes
FRG	Nyegezi	5	Major	Yes	Major
British Volunteers	Nyegezi Mpwapwa (1)	1 76-79	--	-- many via B Council	--
Nordic Project UAC	Uyole	3 or more	Major	Many	Major
Dutch Govt. Volunteers	Ilonga Temeke	2 1	-- --	-- --	-- --
Bulgarian	Ukiriguru	1	--	--	--
Dutch Government	Mlingano	0	--	Short Course for entire student body	In process
Hungary	Mlingano	1	--	" "	--
New Zealand Dairy Project	Tengeru	1 or 2	--	Some	A little
USAID Loan	Ukirguru Mpwapwa	-	9 houses	--	Major
USAID Manpower Project	Ukiriguru Mpwapwa DMD	5 3 1	--	Major	Some
Development Fund Various Donors	All MATIs eligible		Major	--	A little
IDA Loan	11 MATIs		Major	--	Major
Direct Hire Expatriates	Most MATIs at some time, fewer now.		--	--	--

Source: Evaluation Team interviews and discussions.

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ANNEX 30

AID/T Project Managers/Officers for Agricultural Manpower Development Project

September 1973-June 1974	Olean Hess
June 1974 - February 1978	Larry Abel
February 1978 - September 1979	Barry Hill
September 1979 - October 1979	Ron Harvey
October 1979 - July 1980	Marion Kohashi

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ANNEX 31

Planned Male and Female Enrollment in MATI System,
1977 through 1979

Initial enrollments as planned in
Some dropped out soon after entering
a number appointed

Institute	Field	Diploma Entr.									Proposed		
		1977			1978			1979			1980		
		M	F	T	M	F	T	M	F	T	M	F	T
Tengeru	Hort.	–	–	–	18	10	28	17	13	30			30
Tengeru	Dairy	–	–	–	–	–	–	32	8	40			40
Ilonga	Nut.	5	7	12	4	17	21	–	20	20			20
Mpwapwa	L.E. 29/5	29	5	34	–	–	–	35	6	41			45
Uyole	C.Prod.	40	3	43	27	12	39	44	6	50			50
Milingano	Agro-Mec.	–	–	–	22	–	22	27	1	28			30
Milingano	F/Nat.	–	–	–	24	1	25	15	–	15			20
Kyegezi	L.E.	19	–	19	48	2	50	51	–	51			50
Kyegezi	Agro-Mec.	29	–	29	32	–	32	31	–	31			30
Morogoro	Ranch M.	–	–	–	38	–	38	–	–	–			40
Mbeya	C.Prod.	31	12	93	72	15	87	80	17	97			95
Mbeya	A.Prod.	52	6	58	53	8	61	65	3	68			64
Mbeya	Agric E/E	–	–	–	–	27	27	3	33	36			36
TOTAL		255	33	288	338	92	430	400	107	507			571

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Institute	Field	Certificate List									Proposed			
		1977			1978			1979			1980			
		M	F	T	M	F	T	M	F	T		M	F	T
Tengeru	Agrovet	75	7	82	120	9	129	107	36	143				140
Ilonga	"	29	6	35	29	7	36	43	9	52				50
Mtwara	"	49	3	52	58	7	65	48	4	52				50
Mpwapwa	"	48	10	58	70	10	80	59	17	76				80
Uhrigum	"	51	6	57	47	11	58	75	12	87				90
Kyegezi	L/F	49	—	49	43	4	47	42	—	42				40
Tumbi	Agrovet	41	9	50	41	11	52	56	13	69				60
Marcus	"	38	6	44	42	7	49	43	5	48				
Tanaka	Lab.	9	1	10	9	5	14	18	2	20				20
D'Salaam	EIS	3	2	5	1	1	2	6	4	10				10
Butiama	IT	—	—	—	29	—	29	—	—	—				
Total		392	50	442	389	72	461	497	102	599				590

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ANNEX 32

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