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AN ASSESSMENT
OF
AGRICULTURAL EXTENSION AND TRAINING
IN MALAWI
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by

John M. Curtis, Team Leader
M. Kalim Qamar, Extension Agronomist
Joseph Spatrisona, Extension Agronomist

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PREFACE

The Assessment Team expresses grateful thanks to Mrs. Vivian L. C. Anderson, USAID Representative, Malawi, and the entire AID/MA staff for their generous welcome and cooperation. Their advice, contacts, references, and logistical support were vital to the conduct of the project.

Our deep appreciation and thanks go also to Mr. M. Muwila, Chief Agricultural Development Officer, MOA, for his advice, assistance, logistical support and coordination efforts. His interest and administrative actions resulted in open and wholehearted support by all individuals and offices of the Malawi Agricultural Extension Service, other offices of the MOA, and other units of the Government of Malawi.

Our similar sincere thanks are extended to Mr. Brandon Robinson, Chief, Analysis Division, REDSO/EA and to the many other individuals who gave us the benefit of their frank advice and counsel. Most of these individuals are listed in Appendix A.



ABBREVIATIONS USED

ACADO	Assistant Chief Agricultural Development Officer
ADD	Agricultural Development Division
ADO	Assistant Development Officer
AES	Agro-Economic Survey
AETSM	Agricultural Extension and Training System, Malawi
APM	Assistant Program Manager
APO	Assistant Project Officer
ARS	Agricultural Research Station
AWC	Annual Work Calendar
CA	Credit Assistant
CADO	Chief Agricultural Development Officer, Chief of Extension, Malawi
CARO	Chief Agricultural Research Officer, Malawi
DAD	Department of Agricultural Development
DO	Development Officer
DPC	Data Processing Center
DATC	Day Agricultural Training Center
EAB	Extension Aids Branch
EAS	Extension Aids Section
EO	Evaluation Officer
EPA	Extension Planning Area
ES	Evaluation Survey
ESMSU	Extension Support Materials Storage Unit
EU	Evaluation Unit
FA	Field Assistant
FHA	Farm Home Assistant



GOM	Government of Malawi
IB	Internal Budgets
MOA	Ministry of Agriculture (in Malawi)
MOANR	Ministry of Agriculture and Natural Resources (organization which preceded the Ministry of Agriculture)
MOE	Ministry of Education
NRDP	National Rural Development Program
NSSA	National Sample Survey of Agriculture
PID	Project Identification Document
PM	Program Manager
PO	Project Officer
PP	Project Paper
PAETO	Principal Agricultural Extension and Training Officer
PWP	Project Work Plan
REDSO/EA	Regional Economic Development Support Office, East Africa (USAID)
RDP	Rural Development Projects
RATC	Residential Agricultural Training Center
SFO	Senior Field Officer
SMS	Subject Matter Specialists
TA	Technical Assistant
TO	Technical Officer
TRO	Training Officer
UNDP	United Nations Development Program
USAID/M	United States Agency for International Development, Malawi
USAID/W	United States Agency for International Development, Washington
VS	Veterinary Service (in Malawi)
WP	Work Plans



MAJOR CONCLUSIONS

This report represents the response by USAID to a request by the Government of Malawi (GOM) for an assessment of the Agricultural Extension and Training System (AETSM) in Malawi; to identify strengths and weaknesses; and to make recommendations for improving the System.

The Team was favorably impressed with the underlying goals and objectives of AETSM. Its organizational structure, management approaches, and operating procedures are functional and basically sound. Much reliable information exists on which to base programs. The individuals, both men and women, the Team met at all levels of the AETSM were alert, energetic, and interested in their assignments. They were informed and articulate within the limits of their training and experience. It is our opinion that they stand ready to accomplish the goals and objectives of AETSM if given the required resources: adequate training, appropriate information to extend (properly analyzed and packaged), combined with at least a necessary minimum level of facilities, equipment, and supplies; and the assurance their efforts will be recognized and rewarded.*

The pre-service training of extension staff is relatively satisfactory. In order to bring it in line with the policies and operations of the Ministry of Agriculture, a formal mechanism of coordination among the academic training institutions is needed. The training institutions under the Ministry of Agriculture especially need more equipment and instructional staff development.

*The reasons behind this generally favorable over-all conclusion and the major recommendations in the next Section are given in Section III. The procedure used in Section III is a statement of findings followed by conclusions and recommendation on each part of the whole.



In-service training of extension staff is far from satisfactory. This is especially true for the staff occupying positions at the Agricultural Development Division and Project Headquarters level, created as a result of reorganization of the extension service. Both training staff and locations need considerable technical and material assistance. Training of the staff is needed at top, middle and lower levels.

A group approach to contracting farmers is being emphasized because of the large number of farmers each FA must serve. Both farmers and the extension staff seem satisfied with the group approach. This approach has facilitated the operations related to demonstrations and credit. No formal study has been conducted to compare the different extension approaches.

Most training of farmers takes place at Day Agricultural Training Centers and Residential Agricultural Training Centers. The attendance of farmers is often quite large. The staff needs more training and the Centers lack appropriate physical facilities to support instruction effectively.

The Extension Aids Branch is doing an impressive job within its considerable constraints. The availability and use of extension support materials and equipment in the field, however, leaves much to be desired.

The smallholders (men and women farmers) in Malawi, working within the limits of their natural and cultural constraints, are hard working and resourceful producers of agricultural commodities. They deserve the assistance of high quality and effective agricultural extension service. The extension service is doing its utmost, again within its constraints, to meet the educational needs of the smallholders.

The assessment team spent most of its time in Malawi in the field, visiting and observing the Agricultural Development District (ADD), Project,



and Extension and Planning Area headquarters, interviewing officials at each of these three levels, in the Ministry of Agriculture, and in the three major agricultural academic training institutions, visiting farms, talking to extension agents and smallholders, and observing the farmer training in the various kinds of farmer training centers.

The two major conclusions that emerged from reflection on this experience are the following. First, Malawi has an unusually extensive and comprehensive structure or organization for assisting its smallholder sector. Indeed, Malawi has the basic organizational infrastructure that it needs for improving its presently inadequate system of extension and training of farmers.

Second, the needed improvement in extension and training of farmers depends on satisfying certain conditions in four major interrelated areas: (1) administrative procedures; (2) the generation and use of information; (3) personnel practices; and (4) the training of extension agents and other agricultural officials. Another way of stating this conclusion is that, without the support of reforms and improvements in the first three areas, the provision of in-service training to extensionists and other agricultural officials will not be sufficient to bring about the improvement in extension and farmer training that is desired by the Government of Malawi. In order to fully motivate and properly guide extension agents and other agricultural officials in their task of obtaining the appropriate information and extending it to the smallholder, mutually reinforcing improvement will be needed in the areas of administrative procedures, generation and use of smallholder information, personnel practices, and training of extension agents and other officials.



MAJOR RECOMMENDATIONS

ADMINISTRATIVE PROCEDURES

1. Retain and strengthen the current AETSM organization and management structure. The structure, as now developed, provides for functional and sound administrative linkage and reporting procedures. Opportunities should be provided for managers at each level to improve their administrative skills through specialized training.

2. Keep the annual WP and IB process in place and take steps to improve its efficiency. This means specialized training in WP and IB formulation for the current responsible leaders at each administrative level, and pre-service training for individuals appointed in the future.

3. Keep the program coordination process in place and improve it by providing specialized training for those involved in the various responsibilities at each level.

4. It is recommended that top AETSM officials investigate the ADD problems with vehicle repair parts and service. A central office to negotiate contracts to fill these needs would have bargaining power which is national in its scope. Vendors would have to perform effectively or face great financial risks. The PMs do not feel that they, with the administrative power of a single ADD, have enough leverage to assure performance by the vendor. Outside experts may be needed.

GENERATION AND USE OF INFORMATION

1. It is recommended that extension research linkage improvement start with a joint declaration of intent and the establishment of a pattern of implementation by the Principal Secretary, CADO, and CARO at MOA. Regular meetings should be scheduled and held to coordinate the needs of extension with the capacity, plans, and resources of research.



The declaration of intent by top MOA officials would include required research coordination meetings at the ADD between the PM, the officers in charge at the research stations, and appropriate staff from each unit. Use of research personnel to train the trainers should be encouraged and funded.

2. It is recommended that a research officer (with training at least equivalent to a degree from Bunda) be assigned to each ADD headquarters staff. This individual would be administratively a part of the research station staff, on "TDY" at the ADD, and would coordinate day-to-day activities through the office of the PM. A clear job description is required to prevent possible conflicts. The primary job of this research officer would be to travel throughout the ADD, discuss research needs with all extension workers, and conduct extensive field verification trials in cooperation with them. He/she would be thoroughly familiar with the ADD's research needs, and would assist the PM and staff in the analysis of the research needs reports submitted by the field workers and SMSs. Every three months the Research Officer would report to the PM and to the Officer-in-Charge of the research stations and their staffs, in a joint meeting. The results of these discussions would be forwarded to CADO by the PM, and to CARO by the research leader. The information would then be discussed and decisions made by the officials at MOA.

3. The philosophy and directions for more effective use of present and future agricultural and related data in the AETSM must come from the linkage of CADO and CARO at MOA. This will lead to the total ADD management team involvement, which is essential.



It is recommended that this policy be clearly stated and implemented as soon as possible. In addition, a series of workshops and seminars should be initiated, and continued on a routine basis at the beginning and end of the survey periods. Participants should include the Central Evaluation Unit at MOA, all EOs, and senior ADD staff. The National Statistical Office is willing to participate in data analysis and interpretation training.

4. Beyond these seminars and workshops and the pro-data policy declarations, many of the EOs need advanced training in data processing and analysis. Information and AIDS Branch personnel need to be involved also. If mini-computers can be obtained for the results already mentioned, the training of EOs must include the use of this equipment.

PERSONNEL PRACTICES

1. Some positive personnel action is possible with little cost. Non-monetary recognition is important to employees in any organization. It is suggested that thought be given to a more extensive system of individual and group recognition in the AETSM for outstanding performance.

2. It is recommended that a study of the promotion procedure be initiated to consider the feasibility of a policy which would include combining the written exam with an oral exam and an evaluation of an individual's work record. Admittedly, such a policy would involve more people and consume more time than the current procedure. However, it is felt that the results would be very positive in terms of employee morale.

3. It is recommended that a study of the possibilities of a technical career ladder be initiated as soon as possible. Appropriate titles would be



required for each rung in the ladder. A similar plan was initiated in Maryland a few years ago. A County Agricultural Agent there can now progress through four levels and still remain in the local area, continuing to carry out the same responsibilities with farmers, but with increased skill gained from experiences and the additional training required for promotion. The same procedure could be applied to SMSs at the Project and ADD levels.

Although more funds will be required in the future to implement such a plan, the program delivery improvement is needed and would be a result. Increased technical qualification requirements obviously would be a part of the technical career ladder plan.

4. When possible attention should be given to increase the number of FAs to a ratio of 1 to about 300 farmers. In the future, when roads and communication channels and facilities improve, the ratio can be increased to 1 FA to about 500 farmers.

5. Move as rapidly as possible to fill the critical vacancies with qualified personnel, with appropriate training prior to employment and an effective orientation immediately afterward.

TRAINING

1. In-Service Training - (a) Job-related in-service training should be provided to extension staff at top, middle and lower levels as early as possible. (b) The training staff of Residential Agricultural Training Centers and Day Agricultural Training Centers should be given intensive training in technical subject matter and instructional methodology. (c) Day Agricultural Training Centers and Residential Agricultural Training Centers should be provided with more space, applicable audiovisual aids, teaching supplies and better classroom facilities.



2. Pre-Service Training - (a) The competence of the teaching staff at Colby College and Thuchila Farm Institute should be improved through training and the institutions should be provided with more audiovisual aids and equipment. (b) An effective, routine coordination mechanism should be established among Bunda College, the Ministry of Agriculture, representatives of Forestry and perhaps other agencies. (c) The national faculty at Bunda College should be provided advanced training at a faster rate for an early start of a Master's Degree program.

3. Extension Methods and Farmers' Training - (a) Formal research studies should be conducted to determine the effects of various extension approaches on agricultural practices of farmers. (b) Income-generating operations should be initiated at Residential Agricultural Training Centers and Day Agricultural Training Centers to ease the burden on the Ministry of Agriculture budget.

4. Extension Support Materials - (a) The Extension Aids Branch should be strengthened by providing needed equipment and staff training. (b) Complete Extension Support Materials Storage Units should be created at selected Residential Agricultural Training Centers, or Farm Institutes. (c) At a later stage, when the Extension Aids Sections at the ADDs are fully operational, the mobile cinema vans should be transferred from the EAB to the ADDs.



AN ASSESSMENT OF AGRICULTURAL EXTENSION AND TRAINING IN MALAWI

I. INTRODUCTION AND PURPOSE

This report is the response by USAID to a request by the Government of Malawi for an overall review and assessment of the smallholder Agricultural Extension and Training System in Malawi (including crops and livestock); to identify strengths and deficiencies in the existing Extension System, and make recommendations which can be utilized by the GOM in developing policies and procedures to improve the System, if required.

The findings also may be used by USAID/Malawi, assisted by REDSO/EA, and in cooperation with MOA/Malawi, in the development of an effective Project Identification Document (PID), and Project Paper (PP), if such action is appropriate, based on the assessment findings.

II. PROCEDURES AND METHODOLOGY

Parts of the scope of work of the assessment project (tasks to be performed) were assigned to each team member, based on the correlated background and experience of each. The results are reported in Section III: "Findings, Conclusions, and Recommendations."

In order to prevent undue repetition, the often-used "Agricultural Extension and Training System of Malawi" is identified throughout this report as AETSM.

Information on which to base the reports of the current situation, conclusions, and recommendations, was accumulated as follows:



1. Review of relevant documents provided by USAID/Washington, USAID/Malawi, MOA/Malawi, and other sources. (Appendix B)
2. Interviews with individuals and groups in MOA/Malawi, and all levels of the AETSM, including participating farmers. (Appendix A) (In these interviews and those reported in 3. and 4. below, each team member followed a list of inquiries related to his delegated assignment.)
3. Interviews with individuals in USAID/Washington and Malawi, and REDSO/EA. (Appendix A)
4. Interviews with individuals and groups in research and educational institutions (training) in Malawi which have close association with the staff procurement of AETSM, and information used by AETSM. (Appendix A)
5. Observations made by individual team members.

The field travel schedule utilized by the team is shown in Appendix C, but it does not include the extensive research and interviews conducted prior to April 13. It was approved by MOA/Malawi and USAID/Malawi.

It is clearly understood, however, that conclusions drawn and recommendations made by the team are not the direct responsibility of any specific individual who was interviewed.

In conducting these interviews the total team visited ADDs in Lilongwe, Salima, and Blantyre. One member visited the ADD in Mzuzu and Ngabu. Long discussions were held with the assembled ADD staff under the direction of the Program Manager. These conferences were followed by extensive visits to Day Agricultural Training Centers, Project Headquarters, Residential Agricultural Training Centers, Farm Institute, ADMARC facilities, farmers' groups, Extension Aids Branch, National Statistical Office (Zomba), and talks with individual farmers in each ADD. In some ADDs the team visited the Agricultural Research Station. Visits were made to Colby Agricultural College, Bunda Agricultural



College, and Thuchila Farm Institute. Usually the team talked with the Principal and other officials. At Bunda, several faculty members joined the discussions. A tour of the facilities and discussion of curricula at each institution provided valuable information. The total team interviewed some MOA officials. One member spent three days in follow-up interviews with various MOA officials.

In order to accomplish the objectives of the assessment, the team worked in Malawi from April 1 through May 17, 1982.

III. FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

INTRODUCTION

The Team was favorably impressed with the underlying goals and objectives of AETSM. Its organizational structure, management approaches, and operating procedures are functional and basically sound. The individual, both men and women, the team met at all levels of the AETSM, were, without obvious exception, energetic, alert and interested in their assignments. They were informed and articulate within the limits of their training and experience. They, in our opinion, stand ready to accomplish the goals and objectives of AETSM if given the required resources--adequate training, appropriate information to extend (appropriately presented and packaged), combined with at least an effective minimum level of facilities, equipment, and supplies to do the job successfully; and the assurance that their sincere efforts will be recognized and rewarded.

Obviously, we start from a generally favorable set of conditions. The sections which follow will more completely describe the strengths and detail



the weaknesses which must be recognized and adjusted if the full potential of AETSM is to be achieved.

ADMINISTRATION AND MANAGEMENT

OVERVIEW

Organization Structure

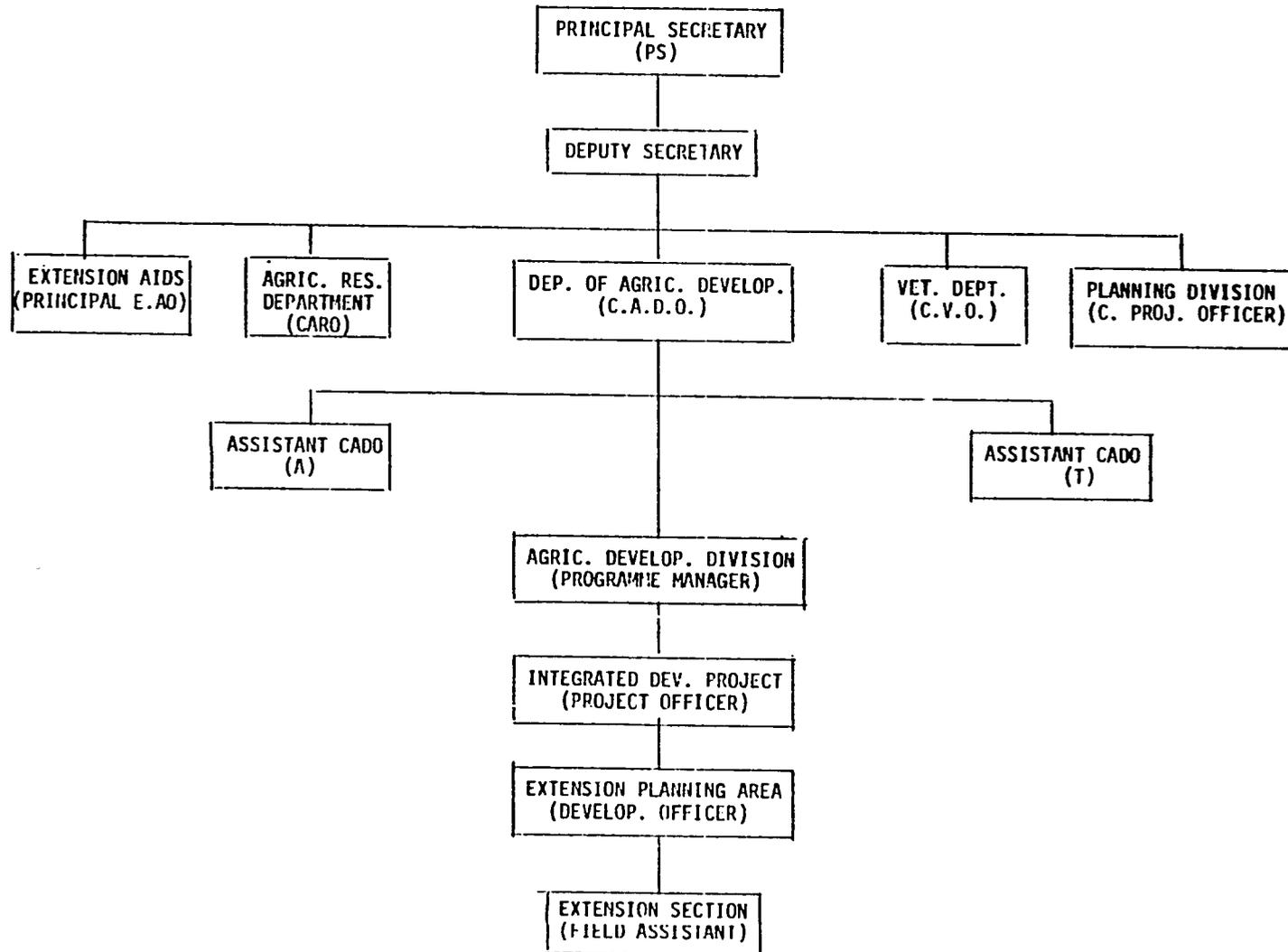
A significant assist in the preparation of this overview statement and indeed other segments of the total report was gained when the Team received permission to use a very helpful report, dated March 30, 1982, "The State of Extension Services in Malawi," by Mr. F. M. Kangaude, Program Manager, LADD. It provides a written description of many AETSM policies and relationships on which the Team gathered verbal observations during the extensive interviews. It is an informed interpretation of what is intended to be in AETSM, and can be, but not always is at present; presented by an experienced member of the extension staff who is in a very responsible position.

Excerpts from the paper, presented in edited form for brevity, and therefore not quite direct quotes, are identified by single spacing below. The very helpful organization charts (identified as Organogramme 1 and 2) and Maps 1 and 2, are presented intact for clarification, exactly as developed by Mr. Kangaude. Deep appreciation and full credit are expressed for permission to use the paper in our assessment.

The Agricultural Extension and Training Service in Malawi (AETSM) is administered by the Ministry of Agriculture (MOA), as are the Agricultural Research Service (ARS) and the Veterinary Service (VS). Until 1978 the MOA had the title of Ministry of Agriculture and Natural Resources (MOANR), and administered the AETSM on a three region basis. At that time the service was reorganized

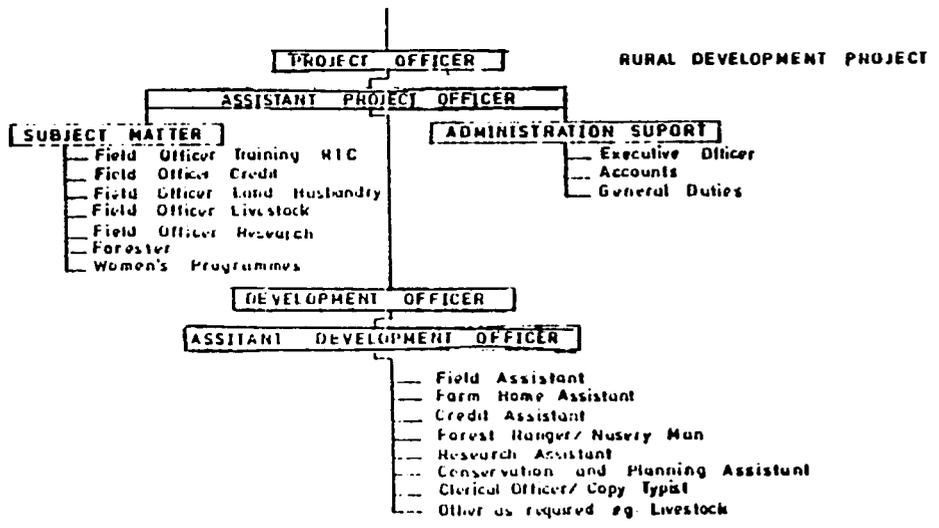
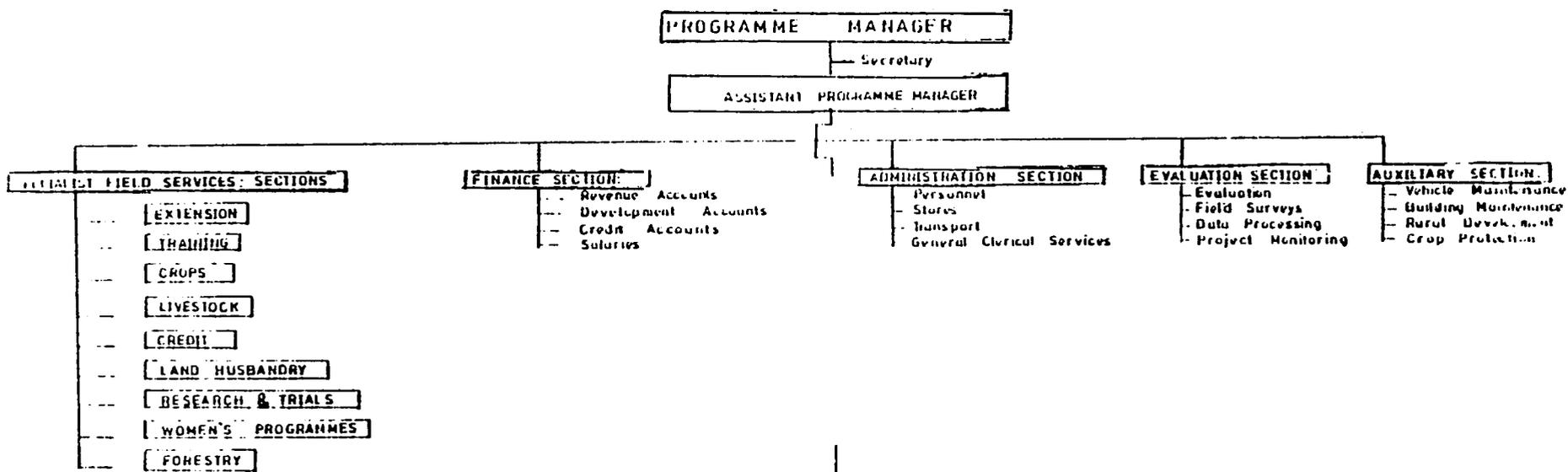


**ORGANOGRAMME 1. POSITION OF DEPARTMENT OF AGRICULTURE DEVELOPMENT
IN THE MINISTRY OF AGRICULTURE, MARCH 1982**



NOTE: DIAGRAM REPRESENTS PROFESSIONAL DEPARTMENTS ONLY

A. D. D. ORGANIGRAMME 2



as the National Rural Development Program (NRDP),* based on about 180 Extension Planning Areas (EPA), 40 Rural Development Projects (RDP), and 8 Agricultural Development Divisions (ADD).

The Chief Agricultural Development Officer (CADO), located in the MOA, administers the AETSM within the NRDP. The office is supported by two Assistant Chief Agricultural Development Officers (ACADO), one for administration and the other for technical matters. The total management staff includes Subject Matter Specialists (SMS) in such areas as Extension and Training, Credit, Marketing and Inputs, Land Husbandry, Animal Husbandry, Food and Nutrition, Women's Programs, and Project Monitoring and Internal Budgeting. (These points are shown in Organogramme 1, except that the SMS staff is not shown in the CADO office.)

Under the NRDP the country is divided into 8 ADDs which include the 40 RDPs and 180 EPAs. (Geographical boundaries for the ADDs, RDPs, and EPAs are shown on Maps 1 and 2.) An ADD is administered by a Program Manager (PM). (See Organogramme 2) The PM is supported by an Assistant Program Manager (APM), various SMS (which generally parallel those listed for the CADO), and an administrative unit for finance, administration, evaluation, and auxiliary services. In addition, the leaders of the RDPs, described below, are a part of the total ADD Management Team.

The 40 RDPs are planned for phased implementation during a 15-20 year period. (As resources become available.) To date 16 RDPs are in operation. Each is headed by a Project Officer (PO) who is responsible for the management coordination, and administration of all activities in the RDP. Each RDP is planned to serve approximately 25,000-30,000 farm families (about 125,000-150,000 people), although many have more. The PO is supported by an Assistant Project Officer (APO), a SMS staff, and an Administrative unit. As necessary and when possible, a Residential Agricultural Training Center (RATC) is planned for each RDP area. Many already exist (see Map 3). The RATC is used to train farmers and extension staff. The Training Specialist is also Principal of the RATC. A Senior Field Officer (SFO) assists the PO in the supervision of all field services, and is head of the agricultural extension work.

*A brief but effective description of the NRDP is found in a publication, "NRDP," prepared by the Extension Aids Branch, MOANR, September, 1980. The stated objective of the organizational change was ". . . to extend to other areas of Malawi some of the benefits which have been experienced with the major Agricultural Development Projects. . . . A change in emphasis . . . which stressed projects with minimum capital investment . . . immediate impact on production. . ." (pp. 1, 2).



A Project Officer (PO) is responsible for a number of Extension Planning Areas (EPA). In establishing the EPAs an attempt was made to attain general geographical uniformity. Each EPA has a headquarters facility with administrative offices, housing, and a Day Agricultural Training Center (DATC) which is used for training extension field staff and farmers. The DO usually is supported by an Assistant Development Officer (ADO), a Farm Home Assistant (FHA) who is a woman, a Credit Assistant (CA), and a Planning and Conservation Assistant (PCA), who are housed at the DATC, plus clerical assistance. Some DOs have additional assistance in livestock and forestry, when appropriate.

The EPA, under the DO, is divided into sectors which include 500-700 farm families (however, some have more than 1,000), depending on terrain, population density, road conditions, communication, etc. A sector is served by a Field Assistant (FA).

Linkage and Reporting

The chain of command of the AETSM is direct, and extends through the organizational structure from the Chief Agricultural Development Officer (at MOA), to the Program Manager (at each ADD), to the Project Officer (at each RDP), to the Development Officer (at each EPA), and on to the Field Assistants (in each EPA sector). The Assistants and Subject Matter Specialists at each administrative level are a part of the management team at that level. They are responsible only to their immediate administrative superior for any duties they perform within their job description, or as specifically assigned to them from time to time.

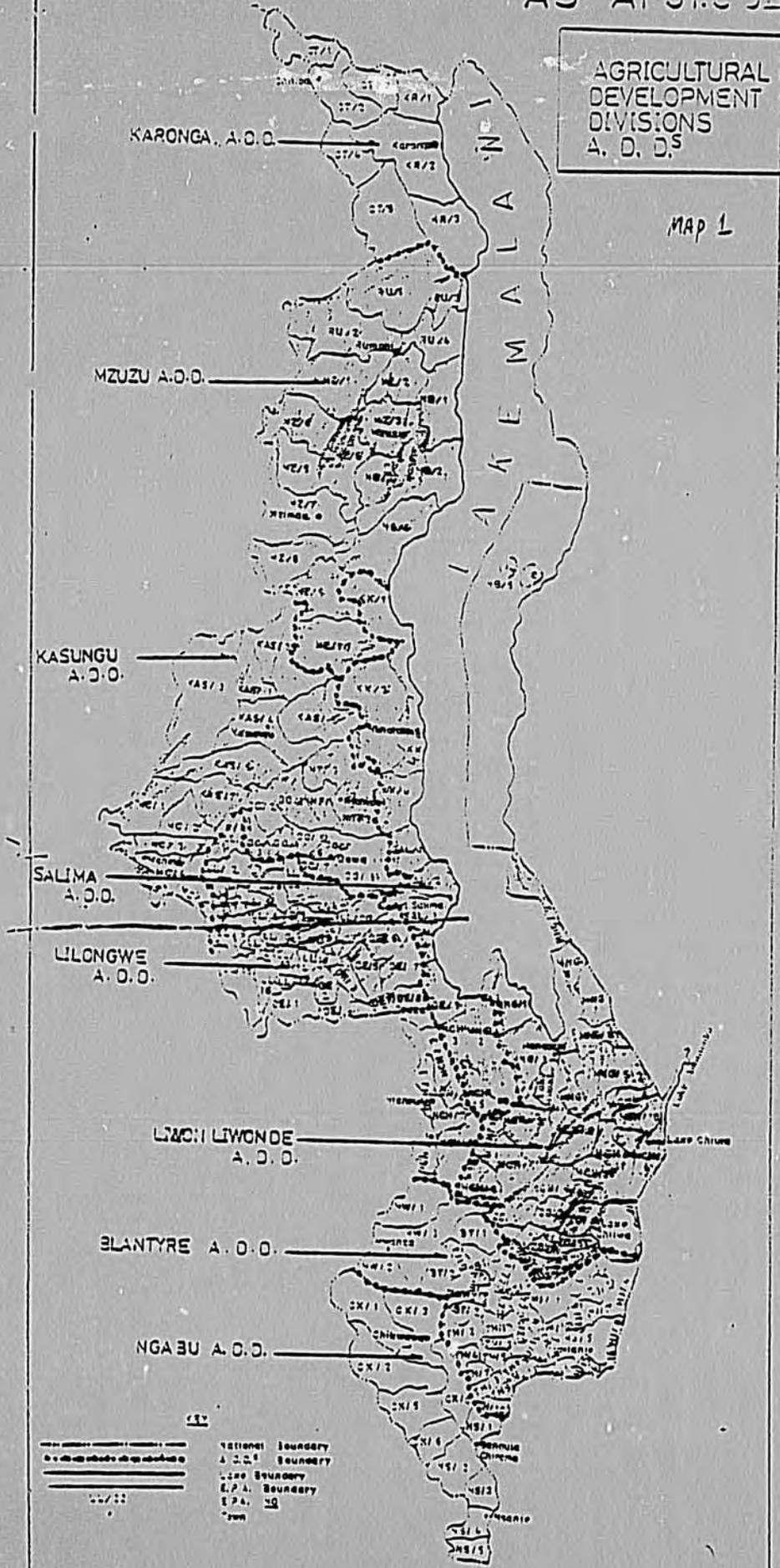
Administrative headquarters of AETSM usually are located at a District* headquarters or at growth points in the rural areas, where other Government of Malawi (GOM) also are located.

The administrative structure of AETSM is designed for decentralization to provide for flexibility and considerable autonomy in the management of activities in each ADD. Program Managers (PM) have the same rank as the ACADO at the MOA. Thus they are involved in discussions of policy formulation concerning the NRDP, and are given significant flexibility in the management of projects in their ADD. This includes the development of Annual Work Plans, Budgets, and the supervision of project implementation, project monitoring, and the evaluation of program impact on farmers. These annual and day-to-day duties are carried out with minimum consultation with their superior in the administrative chain.

*Malawi is divided into 24 administrative Districts for the conduct of the work of government ministries except as herein defined for Agriculture.

N. K. D. P.

EXTENSION PLANNING AREAS (EPAS) AS AT 31.3.32



AGRICULTURAL
DEVELOPMENT
DIVISIONS
A. D. D.^S

MAP 1

National Boundary

 A.D.D. Boundary

 EPA Boundary

 EPA

 Town

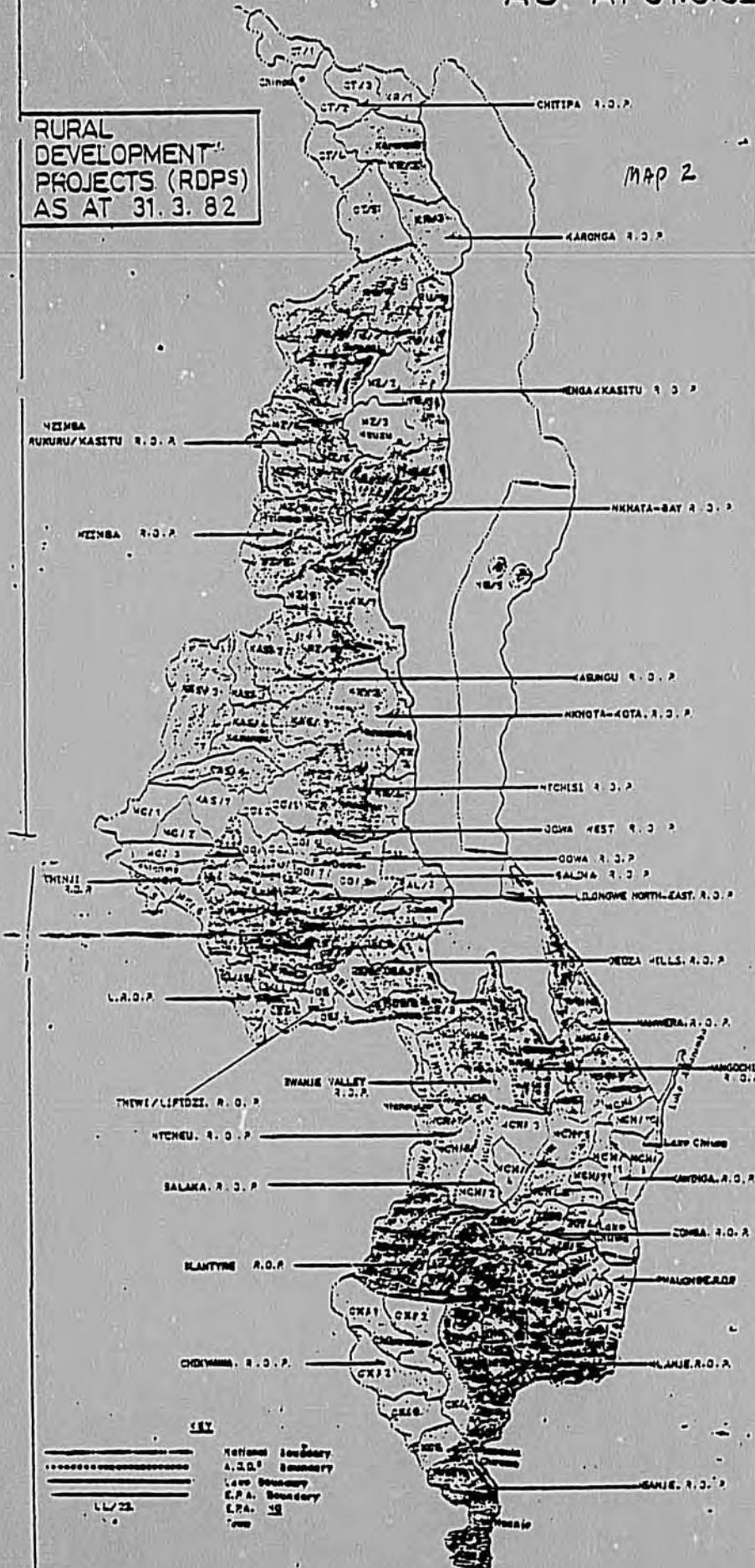
APPROX. SCALE 1:2,090,880

N. R. D. P.

EXTENSION PLANNING AREAS (EPAS) AS AT 31.3.82

RURAL
DEVELOPMENT
PROJECTS (RDPS)
AS AT 31.3.82

MAP 2



APPROX. SCALE 1:2,090,880

Conclusions

The organization structure, administrative linkage and reporting procedures of AETSM, as written, are functional and basically sound. As outlined, the administration and management structure has the capacity to deliver an effective extension and training educational program to the smallholder farmers of the country. However, while the basic structure is sound, some points of stress were identified in the implementation phases. This comment is not meant to be negative. The overview is in fact a clear statement of what the AETSM organization structure is intended to be, and can be, but present human and other resources do not permit it to be today. The AETSM is making progress, and has a firm base on which to build. The key points are that many vital positions remain vacant, and the pressures of putting the system into operation led to the appointment of many people, who, although intelligent, willing to work, and dedicated, were not adequately trained for the jobs they accepted. In-service training (to be discussed later) has not closed the gap. More will be said later about the need for facilities, supplies, and equipment in the structures implementation. The final comment at this point is that, given the conditions of transport and communications, and the number of smallholder farmers to be reached, in the long run the number of Field Assistants (FA) must be increased significantly.

Recommendations

Retain and strengthen the current AETSM organization and management structure so that it can perform as intended. Provide opportunities for managers--the administrators--to improve their skills through specialized training. Move as rapidly as possible to fill the critical vacancies with qualified personnel, with appropriate training prior to employment and an



effective orientation immediately afterward. Move as rapidly as possible to increase the number of FAs to a ratio of 1 to about 300 farmers. In the future, when roads and communication channels and facilities improve, the ratio can be increased to 1 to 500.



ANNUAL WORK PLANS AND BUDGETS

Introduction

A "Bottom to Top" process generally is used in the development of Annual Work Plans (WP) and Internal Budgets (IB) in the AETSM. The Fiscal Year for the Service is 1 April to 31 March. Work on the next year's WP and IB should start about a year ahead (in April, 1982, for the budget which begins on 1 April 1983). In the case of fully funded projects financed by donors, the funding for the next budget year generally is known through the PM's office at ADD, when the process begins. For projects funded by GOM revenue accounts, however, the more normal budget process is built on estimates and requests which flow through the system to the GOM Treasurer's Office, where an allotment is made and the decision passed down through the system. Both WP and IB processes begin at the EPA level.

Mr. Kangaude's paper gives a detailed explanation of how the system was designed to work. Again it is noted that the comments stated below are not direct quotes but are identified by single spacing to show the basic relationship to the section of his report:*

The Process

Annual Work Plans (WPs) are initiated by the DOs and their staff with input from local leaders who represent the farmers. The DO holds a series of meetings, and invites the SMS from the RDP to attend when their assistance is needed. The process involves:

1. Collection and up-dating available data by FAs, EPA staff and SMSs prior to the meetings.
2. Review of progress made on the past year's WP. This includes an appraisal of achievements compared with set targets, a list of successes and failures, and possible causes of both successes and failures.

*Mr. Kangaude indicates that his description applies to his experience at LADD. However, information gained from the interviews did not reflect substantial variations from this generalized description.



3. Formulation of the WP, after considering: a. Conclusions reached during the review; b. New National Policy Directives; past and new recommendations and analyses issued as a result of surveys conducted by the Evaluation Section of ADD.
4. Development of Annual Work Calendar (AWC) for each activity listed in the WP. At this point a budget is proposed by the DO for the equipment, supplies, facilities, etc., needed in the WP activities. (Refer to Figure 1 for the steps to the MOA.)

After the WP is drafted at the EPA, it is forwarded to the Project Officer at the RDP. There the PO discusses the proposed WP and budgets with his staff and the assembled DOs. All WP proposals and budgets are examined in view of anticipated project fund limits, both for fully funded and revenue accounts projects. After necessary adjustments and agreements have been made for each EPA, the PO consolidates a Project Work Plan (PWP) and budget, and sends it to the PM at the ADD.

At the ADD each PWP and budget is examined and discussed in conferences arranged by the PM. These meetings include the ADD staff and all POs. Budgets, including capital and operating funds, are developed which include allowances for each RDP and EPA in the ADD, in support of the approved WP. The total WP and IB for the ADD is consolidated by the PM and forwarded to the CADO at the MOA.

The CADO, after discussing the WPs and IBs for each ADD with his staff and the PMs, prepares a consolidated WP and IB which is forwarded to the office of the Principal Secretary of Agriculture, and finally to the Treasurer, GOM.

The goal is to have the WP and IB information back down to all administrative levels before the FY starts on 1 April. Thus, for example, appropriate personnel know their WP and IB as they start the 1 April 1982-31 March 1983 program year. They also have the information as they begin the development of WP and IB for the year beginning 1 April 1983. (See Figure 1 for the flow back through the system.)

Conclusions

The procedure for Annual Work Plans and Internal Budgets is comprehensive, inclusive, logical, and administratively sound. If done efficiently it should not take an undue amount of time from program efforts. This is an always present danger in all organizations. No specific reference to this problem was noted in the interviews, however, but there was reference to the



lack of training in developing WPs and IBs by those who are responsible for the final consolidation decisions at each administrative level.

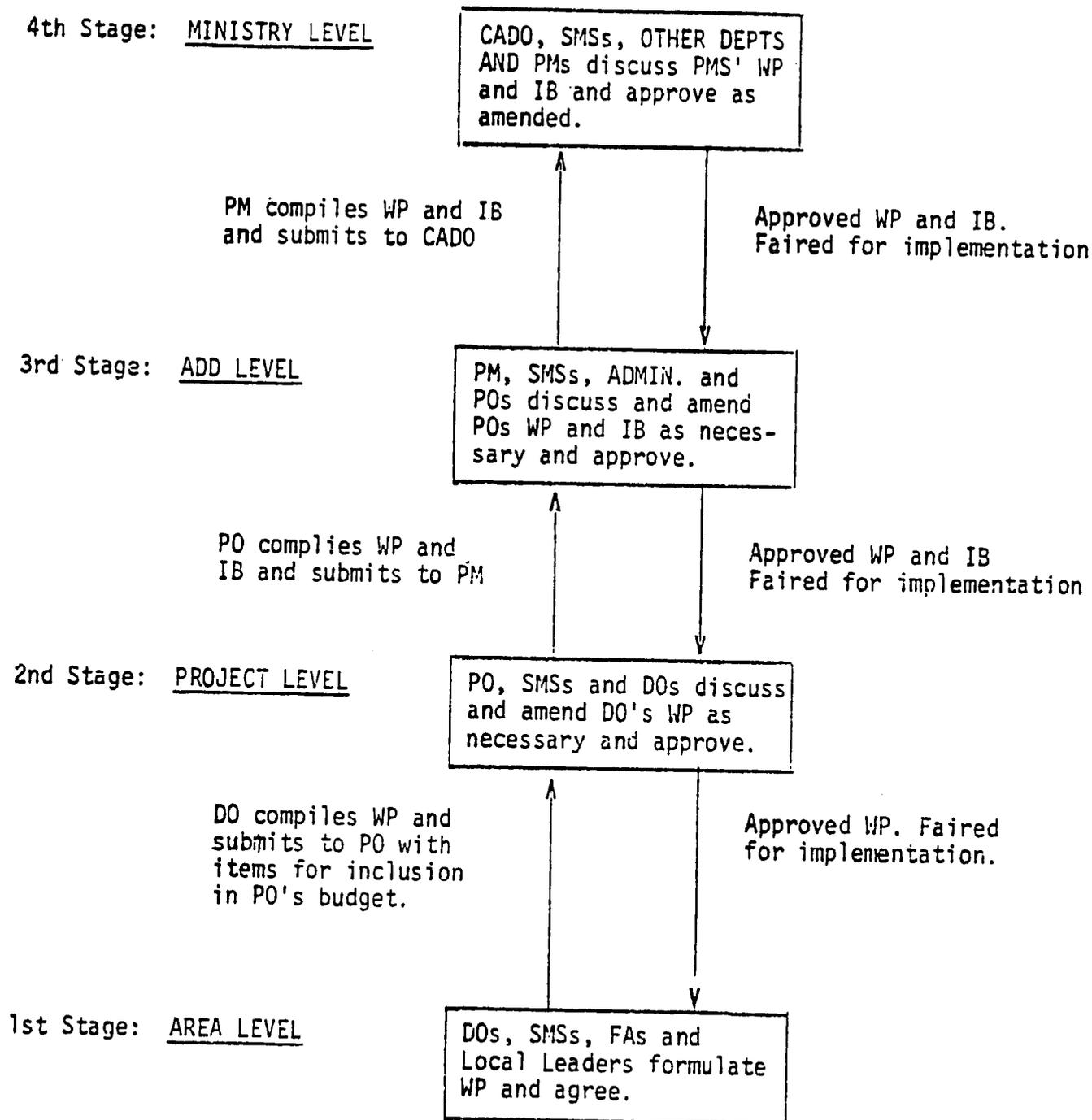
Recommendations

Keep the annual WP and IB process in place and take steps to improve its efficiency. This means specialized training in those areas for the current responsible leaders at each administrative level, and pre-service training for individuals appointed in the future.

During the interviews it was stated that some years ago all new appointees to administrative posts were required to attend six months of instruction in administration. This practice has been eliminated in recent years, reportedly because of a shortage of funds. It should be revived.



FIGURE 1. STAGES IN ANNUAL WORK PLAN AND INTERNAL BUDGET PREPARATION



PROGRAM COORDINATION

Introduction

Effective program coordination and communication is essential in an extension educational effort. Mr. Kangaude explains the required program coordination in the AETSM at the ADD level as follows (again these are near quotes in edited form):

The Process

The DO at the EPA is required to hold at least two scheduled meetings with his staff, including FAs, each month.

The first meeting includes the preparation of calendars of work as outlined by the Annual Work Calendar. Each individual prepares a schedule for each working day of the month, indicating what specific subject will be covered, and for whom (groups of farmers, farmer's clubs, women, and individuals). The DO checks to see that all workers are prepared by conducting demonstration sessions in which they show their ability and knowledge in the transfer of information to farmers.

The second meeting is for a review of the activities planned in the past two weeks. Successes and failures are discussed. Again, in this meeting the DO checks to see that the extension workers are prepared to carry out their duties during the next two weeks.

Project Officers hold monthly meetings with DOs and Subject Matter Specialists. Various project activities are discussed including successes and problems in the EPAs and new recommendations. Action is suggested when appropriate. Minutes of these meetings are forwarded to the PM for his information and appropriate action.

The PM holds scheduled monthly program meetings with POs and SMSs. Instructions for POs and DOs may be issued as a result.

Thus program related information flows up and down the ADD administrative line, not only through correspondence and staff visits, but also through the follow-up of meetings held at each level.



Conclusions

The process outlined for program coordination in the AETSM is detailed and thorough. In the interviews it was reported that the process is working, but not as effectively as wished. It was observed that often the information finally transferred to smallholders was too late for effective implementation, and sometimes was distorted. More immediately relevant information is needed. Again, the comment was made that DOs and FAs need more training in their special responsibilities, and that more Field Assistants are needed. The problem of transporting farmers to training sites needs to be resolved.

Recommendations

Keep the program coordination process in place and improve it. Again, the need is for specialized training for those involved in the various responsibilities, and appropriate resources to conduct the educational program to meet the needs of the smallholder.



PERSONNEL RELATIONSHIPS

Introduction

Throughout the interviews there was an undercurrent of dissatisfaction. This dissatisfaction did not relate to any particular administrator or manager. It basically centered on certain uniform national policies and procedures which are applied in extension: salary levels and their relationship with retirement policies; promotion procedures, and career ladder opportunities. These points, it is recognized, are not unique in Malawi's civil service. They are reflected worldwide by equivalent workers, to some degree.

At present the undercurrent of dissatisfaction is simply that--an undercurrent. It does not have a significant impact on the motivation and dedication of extension workers to carry out their duties to the best of their abilities. But it exists, and should be recognized.

Salary Levels and Retirement

Most extension workers are in the Technical Assistant (TA) grade. They are identified in Extension as Field Assistants (FA) and Farm Home Assistants (FHA). These individuals and their direct supervisors, the Development Officers (DO) are the key contacts with smallholder farmers, and thus are the main educational delivery personnel in the extension service. The current salary dissatisfaction extends through these workers, and into the middle management groups. It was also mentioned by some senior level personnel who are nearing retirement.

Civil service employees in Malawi are forced to retire at age 50. Annuities are based on years of service and salaries. Many soon-to-be-retired workers, and some younger workers, are worried about their financial



security when forced to retire under this policy. The purpose of this policy appears to be to provide openings for new workers to enter the job market. However, in agricultural extension, where vacancies now exist, and some positions have been filled with marginally qualified candidates in order to quickly staff the system, this policy seems short-sighted. Many qualified and experienced people will be lost to extension as they enter their most productive period as educators.

Promotion Procedures

This policy generated more negative comments than any other. At present, promotions are based entirely on a written exam. It is felt that this single procedure is unfair, that too little attention is given to what an individual has accomplished; his/her job-related knowledge--including academic and specialized training--and that it tilts the decision unfairly toward people who have the most time to prepare for the exam and who are naturally good in written exam techniques.

Many individuals felt that a more equitable policy would include (1) the written exam plus (a) an oral exam, and (3) careful consideration of the individual's work and academic accomplishments. It was suggested that each part should be one-third of the total score for the candidate. Tied in with this point was dissatisfaction with the annual evaluation procedure. It was not so much an objection to the forms and process. Instead, it was the fear felt by managers that a person receiving a strong evaluation was in danger of being promoted away from his/her job. This means a continued shift of experienced personnel away from jobs they are doing well, and replacement by less experienced personnel who are new in the job.



Career Ladder Opportunities

The point here is that most agricultural extension workers feel that the only way to make substantial career progress is to shift from the technical fields to some degree of administrative responsibility. Their plea is for a professionally and financially rewarding ladder which would permit them to remain in their chosen technical area throughout their careers. The technical career ladder would involve FAs, FHAs, and SMSs at RDP, ADD, and MOA. Possible steps in the ladder could be I, II, III, IV at each level. Additional time and study will be required to establish salary and rank comparability and the interrelationships, as well as the specific qualifications (experience, specialized training, academic achievement, and job performance) for each step. Outside experts will be needed in this study. This career ladder procedure would not prohibit individuals, with a flair for and an interest in administration, from moving into administration and management if they were qualified and interested. It would permit them to achieve equivalent career progress in their technical (educational) field without the necessity of moving into administration and management.

Conclusions

Obviously, there is a close interrelationship among policies which govern decisions on salary levels, promotion procedures, and career ladder opportunities. These subjects surfaced many times in group and individual discussions with extension workers. The undercurrent of dissatisfaction exists, and employees hope that top AETSM officials will attempt to seek remedies when possible. They know that some of the causes stem from national policies and pressures on available national resources, and are willing to be reasonably patient, but they do want to have their viewpoints recognized.



Recommendations

Some positive personnel action is possible with little cost. Non-monetary recognition is important to employees in any organization. It is suggested that thought be given to a more extensive system of individual and group recognition in the AETSM for outstanding performance. The comment was made that top officials of AETSM are seldom seen in the field, especially at the EPA level.

It is recommended that a study of the promotion procedure be initiated to consider the feasibility of a policy which would include combining the written exam with an oral exam and an evaluation of an individual's work record. Admittedly, such a policy would involve more people and consume more time than the current procedure. However, it is felt that the results would be very positive in terms of employee morale. External experts would be useful in the development of the procedure.

The AETSM exists primarily to provide useful information to farmers so that they can produce more agricultural products more efficiently. It also exists at present to provide home economics information to improve the life style of the people. Technical knowledge and the ability to transfer it effectively are essential in the success of AETSM's mission. Therefore, it is recommended that a study of the possibilities of a technical career ladder be initiated as soon as possible. Although more funds will be required in the future to implement such a plan, the program delivery improvement is needed and would be a result. Increased technical qualification requirements obviously would be a part of the technical career ladder plan. A similar plan was initiated in Maryland a few years ago. A County Agricultural Agent there can now progress through four levels and still remain in the local area,



continuing to carry out the same responsibilities with farmers, but with increased skill gained from experience and the additional training required for promotion. The same procedure could be applied to SMSs at the Project ADD and MOA levels.



EFFECT OF REORGANIZATION

INTRODUCTION

Many aspects of the effects of reorganization in the AETSM are reflected in the preceding sections which deal with administration, Annual Work Plans and budgets, program coordination, and personnel relationships. Most but not all of the responses to questions about the reorganization were positive. Most of the discussions centered on the ADD administrative level, which coordinates the basic extension education activities for which the AETSM exists. Therefore, it is appropriate at this point to note some additional findings and to comment on the extension-research linkage situation.

ADMINISTRATION AND MANAGEMENT

Introduction

Before reorganization (see pages 4-6 for a description of the reorganized structure) the country was divided into three governmental Regions: North, Central and South. There was a Minister for each region who reported to the Office of the President. The system of Regions and Regional Ministers was continued after reorganization and the Ministers still report to the Office of the President.

Before reorganization and after, there were and are 24 governmental administrative Districts in the nation, each under a District Commissioner, who coordinates with the Regional Minister, but who also reports directly to the Office of the President. These Districts administer governmental agencies other than agriculture.

The number of Districts in each ADD varies. The PM of the ADD coordinates with other governmental agencies in the Districts, and with the District Commissioners and the Regional Minister, but reports to superiors in the MOA.



Before reorganization a Regional Agricultural Officer was in charge of each Region. Both agricultural extension and research were administered on a Regional basis. There were three main research stations, with satellite units located within the Region.

When the National Rural Development Program (NRDP) was initiated, Extension was organized into 8 ADDs (Agricultural Development Divisions). At least one agricultural research station was planned for each ADD, and now 7 of the 8 ADDs have a research station. There are now 11 research stations in various ADDs throughout the country. Only Kusunga ADD does not have one. Thus, now all agricultural extension and research activities are administered through the 8 ADDs, while other government administration is still through the 24 Districts and the three Regions.

ADD Specifics

The job of the PM is largely administrative with little or no role in direct program delivery. It is a difficult job which calls for skill and ability.

When the ADDs were formed as an integral part of the RNDP, wide-ranging responsibilities were assigned to the Chief Administrative Officer, the PM. In addition to the significant responsibilities associated with the agricultural extension staff, facilities, equipment, budgets, and programs, these administrators reportedly were assigned other important, related, but non-extension duties. It was reported that certain financial matters of the research stations were added, funds allocated, but little authority given except to perform the functions. Much the same situation pertains to administrative duties associated with health buildings, roads, livestock dip tanks, and perhaps others we did not learn about.



These responsibilities grew out of the integrated nature of the RNDP. A supporting staff, shown in Organogramme 2, was supplied to assist the PM. If trained and capable, the assigned staff should be adequate for the task. In this regard, many references were made to the need for specialized training of current staff and the pre-service training needed for qualified replacements in the future.

With reorganization into 8 ADDs, Program Managers feel that budgets were increased and their authority to make decisions concerning funds and programs was expanded. On balance they like the ADD system. However, it was stated that there is a severe and limiting factor in the new budget allocation process. Under the previous system, the Regional Agricultural Officer received an annual budget. Now the PMs report that they receive the annual budget in quarterly allocations. If all funds available in each quarter are not spent during this time, the amount remaining at the end is lost (it reverts). The quarterly allocation does not really fit capital expenditures such as houses and other facilities. If, for example, four vehicles are requested and approved, and are needed immediately to conduct the program, not all can be purchased in one quarter, even though needed. Basically, the quarterly budget process does not seem to fit the administrative needs of the ADDs. Program Managers would prefer to return to the annual budget allocation. They feel that it would give them the administrative flexibility they need to conduct the affairs of the ADD more efficiently. Beyond this point, however, they did approve of the general increase in flexibility of using the approved PW and IB.

The PMs generally agreed that total ADD funds were increased under the reorganization. They were quick to point out that funds for non-project



areas (revenue funds) are extremely tight. However, they report that they have more money for training programs, are holding more smallholder training sessions, and with a smaller geographic area to cover can better gear training efforts to local needs. They also related this improved situation to their expanded program authority, and stated that action can now be taken more quickly to meet the changing program needs of local farmers. (See pages 39 to 66 for a detailed account of training under reorganization.)

However, other points of stress were voiced. They stated that soon they would need additional funds to replace old equipment, add equipment, improve teaching aids, and provide more adequate office and teaching supplies. Even so, they are proud of the job they are doing with what they have.

Finally, they described the great need for a more reliable source of spare parts and repairs for ADD transportation, including the motorcycles used by DOs. The PM is the contracting officer for vehicles, repairs, and spare parts. They feel that their bargaining power is too slight (at a single ADD) to affect vendors. They wonder about a centralized contracting office at MOA which would have nation-wide bargaining power. External experts would be useful in this study.



EXTENSION AND RESEARCH LINKAGE

Introduction

The extension-research linkage situation was discussed with extension personnel in every ADD visited. These discussions included individuals representing every administrative level. Interviews were held with top extension and research officials at the MOA, and with leaders and workers at agricultural research stations in some of the ADDs. The extension-research coordination is "tender" in several respects, and needs to be improved for the benefit of all concerned, especially the smallholder farmer.

Situation and Viewpoints

Every person asked about this point felt that the existing extension-research linkage needed to be improved, and no individual registered opposition to seeking ways to remove obstacles to effective linkage. Some offered suggestions. Almost all offered viewpoints.

The linkage situation is not uniform and does not fit a universal description. In some ADDs extension personnel have little or no contact with researchers. In others a good working relationship has been established, with close personal contacts. Some ADDs have a research officer stationed at the headquarters. These positions were established as a part of the early major projects and have been continued. It was explained that these research officers report extension's research needs (through the PM), and conduct field verification trials within the ADD area.

Some of the viewpoints contain an element of contradiction, which, while perhaps not always understandable, do serve to keep focus on the situation:



Extension: Feels that (1) often there is a conflict between the national priorities of research and the practical needs of extension within the ADD. (a) National research recommendations are not adjusted for specific areas. (3) Research should be planned at the ADD level and coordinated nationally. (Focus on the individual ADD's problems and opportunities and do not attempt to apply findings to other ADDs unless they are determined to be reliable transferable.) (4) Research in Malawi, at this period of its history, should be primarily aimed at solving practical agricultural needs (applied rather than basic or theoretical), with the results packaged so that extension can use them effectively to assist smallholders, most of whom cannot read. (Gear research to solving Malawi's agricultural restraints.) (5) Research station findings are sent first to the research unit at MOA, where there is a significant lapse of time before they are made available to extension. (6) Extension needs a more positive and routine way to have input in research planning. (7) Many of the above viewpoints would be improved if a research officer could be assigned to each ADD staff.

Research: Maintains that (1) with limited budgets national research priorities must be set, but an effective program of specific area verification is followed (although budget restraints have resulted in some reductions in some areas). (2) There are national crops and livestock research coordinators who oversee efforts in these areas nationwide, and they are aware of the different needs of various ADDs. (3) Much of the research work is practical, but often basic investigations must be made prior to practical application. (4) Extension Aids Circulars are prepared by the MOA research staff after findings are forwarded; and, while this process still takes too much time, the situation is improving. (5) Extension contributions to research planning



are welcome, but too often junior extension officers are sent to coordination meetings with research personnel. (6) Many of the viewpoints expressed by extension would be improved if Extension Specialists could be assigned to each research station.

CONCLUSIONS

The NRDP is a unique integrated development effort. AETSM is an extremely important part of the total effort. The ADD system of administration for AETSM operates within the Regional and District channels of other governmental services. It seems to work, and much of the success probably rests on the coordination between the PM, the Regional Minister, and the various District Commissioners, plus the program and budget flexibility given to the PM.

While the PM at ADD has several non-extension responsibilities, the staff provided, if trained and capable, should make the total job manageable. Again, it is functioning at an administrative level; and is performing the assigned duties to a degree. Staff training needs were stressed.

The reported quarterly allocation of budgets seems to provide problems for the PMs, in addition to the tightness of funds in the non-project areas. Funds for certain equipment, supplies, and training materials needs to be increased.

The decentralized authority delegated to the PM related to the purchase, spare parts, and repairs of vehicles needs to be reviewed in light of the problems reported.

The gap between extension and research concerning the research linkage situation is not as wide as might be assumed from the viewpoints listed.



It does need to be improved for the benefit of all concerned. Extension does need a more effective way to make its research needs known. The research should be focused on problems faced by smallholders in their efforts to improve production and increase incomes. It should be packaged for efficient use by extension personnel in their education programs. Some appropriate research results are packaged as Extension Aid Circulars, and these are effective visual and written extension training aids. Plans are in the process to send 33 Malawians to the U.S. to earn M.S. and Ph.D. degrees in agricultural research. This will upgrade their qualifications and improve their research effectiveness. Research and extension personnel are willing to cooperate. If funds become available, researchers are willing to send their personnel out to train the trainers in extension. They are considering workshops for researchers and each ADD staff to discuss research needs and better linkage. The situation has hope.

RECOMMENDATIONS

The ADD and the AETSM structure below it must function effectively if the extension mission is to be achieved. Administration at the ADD is the key, and training recommendations for the staff there have been listed and are again urged. At the ADD level and below, there were complaints about excessive "paperwork" interfering with the delivery of educational programs. This is a worldwide complaint of extension workers. However, it is always appropriate for administrators to review paperwork requirements and seek the minimum level consistent with effective administration and management.

In addition, if the quarterly budget allocations are used, it is suggested that the process be reviewed by AETSM top officials. At least one PM was emphatic in his negative stand on this issue.



It is recommended that top AETSM officials investigate the ADD problems with vehicle repair parts and service. A central office to negotiate contracts to fill these needs would have bargaining power which is national in scope. Vendors would have to perform effectively or face great financial risks. The PMs do not feel that they, with the administrative power of a single ADD, have enough leverage to assure performance by the vendor.

It is recommended that extension-research linkage improvement start with a joint declaration of intent, and the establishment of a pattern of implementation by the principal Secretary, CADO, and CARO at MOA. Regular meetings should be scheduled and held to coordinate the needs of extension with the capacity, plans, and resources of research.

Research needs felt by extension workers could be reported on a one page form which would be forwarded to the PM as the need surfaces. Each extension worker would have a supply of the forms.

The declaration of intent by top MOA officials would include required research coordination meetings at the ADD between the PM, the officers in charge at the research stations, and appropriate staff from each unit. Use of research personnel to train the trainers should be encouraged and funded. Extension visual aids and information officers plus SMSs should be encouraged (and trained) to play a more active role in the interpretation of research results for use in extension's educational program with smallholders.

Finally, it is recommended that a research officer (with training at least equal to a degree from Bunda) be assigned to each ADD headquarters staff. This individual would be administratively a part of the research station staff, on "TDY" at the ADD, and would coordinate day-to-day activities through the office of the PM. A clear job description is required to prevent possible



conflicts. The primary job of this research officer would be to travel throughout the ADD, discuss research needs with all extension workers, and conduct extensive field verification trials in cooperation with them. He/she would be thoroughly familiar with the ADD's research needs, and would assist the PM and staff in the analysis of the research needs reports submitted by the field workers and SMS. Every three months the Research Officer would report to the PM and to the Officer-in-Charge of the research station and their staffs, in a joint meeting. The results of these discussions would be forwarded to CADO by the PM, and to CARO by the research leader. The information would then be discussed and decisions made by the officials at MOA.



INFORMATION--THE KEY ELEMENT

INTRODUCTION

The success of agricultural extension programs throughout the world rests squarely on their base of appropriate information. Malawi is fortunate that methods and processes are in place which generate a steady supply of information which potentially can be used by policymakers and extension staff, and made available for practical use by smallholder farmers.

INTERNAL SOURCES

These sources of information are Evaluation Surveys (ES), Agro-economic Surveys (AES), the recently established National Sample Survey of Agriculture (NSSA), and results from projects conducted by the Agricultural Research Stations. Some ADDs also mention "Special Surveys" but the team did not see any written reports based on them. Another important source of information for extension workers is the contents of agricultural courses they take in academic institutions prior to employment, and any in-service training they receive.

The research, pre-service and in-service sources of information are discussed in other sections of this report. The three Surveys will be emphasized in this section.

All three Surveys utilize the same general methodology. A type of cluster sample is selected, based on the 1977 Census of population. Each cluster consists of several hundred individuals (the number varies) and includes at least one village. A sample is selected from each cluster, usually 25 households (again the number varies). Each enumerator works with a sample within each cluster. Trained economists and statisticians interviewed in Malawi feel that the sampling procedure is sound, and that the process generates a wealth of generally reliable data.



General guidance in survey work is provided by a Central Evaluation Unit at MOA headed by a Senior Economist for Evaluation. Close cooperation of this unit was given in the conduct of the NSSA. Each ADD has an Evaluation Officer who leads a data collection, processing, and analysis unit. This unit, often referred to as the Evaluation Unit (EU), is responsible for the ES, and cooperates in the conduct of the AES and NSSA. Evaluation Officers (EO) are assumed to be economists (general, not agricultural economists) with statistical training. The team was told that all EOs do have economics degrees and that 6 are expatriates. It was generally felt that the EOs and their staffs needed more training in data processing and analysis if the information gathered is to be of maximum use in extension programs. The basic analysis of survey data is handled by the EU in each ADD.

EVALUATION SURVEYS

The ES covers only the project areas. In some ADDs this means that a considerable geographical area is not covered.

Three basic "core" survey forms are used in the ES: Household compositions, Garden, and Yields. Enumerators are organized into teams of 5 or 6 each with a team leader. Data are collected over a period which varies as follows:

Household Composition Data: Demographic information, but also includes farm occupation and extension training data. Data are usually collected over a period of about eight months, and are available in January of each year.

Garden Survey Data: Rather lengthy and detailed information about the production of fruits, vegetables, and many other crops, including maize, rice, groundnuts, etc. Data collected



over a crop year are usually available in March of each year. Information includes: garden type, location, years used, authority to use, crops grown, rotation details, cultivation details, and soil quality. There is no reference to extension assistance.

Yield Study Data: Excellent data base for extension program uses. Includes information on how many times an extension worker visited the farms, and what type of advice was given. Also includes information on crops grown, variety, and source of seeds; manure, fertilizer, fungicides and insecticides used, amount, time of application, and reasons for following certain recommended practices; natural factors which affected yields; and diseases present. There is an actual measurement of yields. Data are usually available in August of each year.

When the completed "core" evaluation survey forms arrive at the ADD (through the PM to the Evaluation Officer), the Evaluation Officer and staff can (and some do) "hand extract" important data before sending the forms to DPC. The decision of whether to do this seems to be left with the Evaluation Officer. Some of the information could be very important in program planning: shifts in planting patterns, changes in crop acreages, use or non-use of certain inputs, and the role extension has played in the past year.

The "hand extract" process is used in some ADDs because it is felt that information is needed for work planning prior to the receipt of the more formal printouts from the DPC. (However, in some ADDs the "working papers" described below are essentially the only analyses made from the Evaluation Surveys.)



The "core" survey forms are then sent to the Data Processing Center (DPC) at Blantyre for processing, using a computer program developed at MOA. (One ADD uses the computer at Zomba.) A printout is returned from the DPC and a "working paper" is prepared by the ADD Evaluation Unit. These "working papers" are now available for the period 1978 through 1980/81. A great deal of information exists for policymakers, and starting in 1980/81 the information gathered through Evaluation Surveys will become a part of the national data report by a tie in with the NSSA.

In one ADD visited, this year, for the first time there, a serious effort was made to utilize the evaluation surveys more effectively. Information on the 3 "core" survey forms was processed and analyzed "by hand" before the edited forms were sent to the DPC. It was felt that the computer generated printouts are too late for efficient program planning and training use. The Evaluation Officer developed analyses by hand and discussed them with the PM and ADD management staffs. They then discussed this information with the DOs, who informed the Field Assistants. Information was used in farmer programs and in developing the next year's WP.

When the computer printouts arrived, the Evaluation Officer prepared "working papers" which were distributed throughout the ADD, including the DOs and FAs. Data were adjusted to fit each EPA. Also, data previously issued from the "hand" calculations were adjusted as necessary.

AGRO-ECONOMIC SURVEYS

These surveys are coordinated by a central evaluation unit at MOA. A team is sent out to conduct the survey. The EU at the ADD cooperates in the effort, but the work is done by the visiting team. In the past, these surveys have been used to gather baseline data for planning new project areas. These have been conducted in certain non-project areas not covered



by the ES. They are conducted when needed, not on a routine basis each year.

The "core" evaluation survey forms are used, and data are processed by a computer programmer at DPC. Data needs beyond the "core" forms are handled by adding appropriate survey segments; for example, manpower and labor information. However, the additional data collected are processed by hand since the computer program cannot include it.

In general, since the NSSA is in process, and its annual update will cover the non-project areas, the Agro-economic surveys will not continue except for special situations. Some evaluation people would like to initiate special farm management surveys.

The information generated by these surveys reportedly is not made available to the ADD Evaluation Unit on a routine basis.

NATIONAL SAMPLE SURVEY OF AGRICULTURE

The National Sample Survey of Agriculture is capable of generating data on various decision-making levels: Project area; ADD (8 in country); District (24 in country); and National.

It is basically a cluster sample survey originally designed to include one/half of 1% of the total farm population. Planners now believe that about 7/10ths of 1% of the total farm population will be included. The National Statistics Office (NSO) is the responsible agency.

The National Sample Survey of Agriculture (NSSA) planners started recruiting staff in 1978. They were placed with EOs in each ADD for training. They participated in the Evaluation Surveys in 1978 and 1979, and thus worked on project area data.



When the NSSA became operational in 1980-81, the Evaluation Officer and staff still conducted the ES as usual. The NSSA sample covered the total ADD area, project and non-project. Some Evaluation Officers at ADD covered the clusters in the project area selected by NSSA, plus others that they had covered in the past. Others covered only the clusters selected by NSSA.

The NSSA selected clusters in the non-project areas and used their own personnel to cover them. The staff of the Agro-economics Survey cooperated with NSSA, much like the Evaluation Units.

The three "core" survey forms of the Evaluation Surveys were slightly revised and used in the NSSA. Seven additional survey forms were used. These additional survey forms cover such areas as nutrition, crop storage, home and farm resources, livestock income and expenditures and energy sources. One of the forms was a separate Extension Survey, which includes important information about the extension assistance received, method of information delivery (group meetings, field days, day training, and individual visits by FAs), and how useful the information was. These data should be very useful to extension for policymaking, program planning, program evaluation, and program delivery. Most ADD Evaluation Units "hand extracted" some data from the additional 7 survey forms before forwarding them to the National Statistics Office for processing at DPC. The National Statistics Office is the responsible agency, but was guided by a Steering Committee headed by MOA personnel. Members of the Steering Committee represented the subject matter covered in each of the 7 survey forms.

A preliminary report is expected by the end of April 1982, and the final report by the end of the year. For the first time, Malawi will have national data on agricultural crop production yields, livestock, and the other areas covered in the forms.



The NSSA effort will be continued each year as an annual survey of agriculture. A smaller sample (50% of the original sample) will be used. In 1981/82 and beyond, NSSA will use only the three "core" survey forms for the annual update. Both project and non-project areas will be covered. It is funded for the next four years.

APPROPRIATENESS AND PACKAGING

A great deal of information useful in decisions related to agriculture and the extension service has been and is being generated in Malawi. National data will be available soon, for the first time. As generated, these data are appropriate for policy matters, extension staff training, and for programs with smallholder farmers. Improvement is needed in the data analysis and packaging for each audience. Some data have been analyzed and used by extension. However, a great deal of data remains to be analyzed and used for its policy and management value, and for the vital information transfer requirements of extension workers in their educational programs with smallholder farmers.

Evidently the research data are chiefly transferred to extension via the Extension Aids Circulars (see research-extension linkage). It is assumed that policymakers are aware also of their findings, and do consider them in their decisions. The alert use of these data plus the information generated by the various surveys would be extremely valuable in national policy decisions.

The Agro-economic Surveys certainly have been used by policymakers in their decisions related to establishing new project areas. Unfortunately, it appears that these data have not been made available to extension on a routine basis.



Evaluation Survey data have been used effectively in some ADDs. Others evidently have not utilized them too well. Some Evaluation Units at ADDs have relatively inexperienced personnel, and the EO often is responsible for a number of duties which interfere with the data processing and analysis sector.

It is clear that much reliable data exist, and better analysis and packaging is needed if they are to be used effectively to train extension workers, and if they are to be used by extension workers to guide the small-holder farmer in reaching national goals. The vast amount of excellent information which soon will be available from the NSSA will be a challenge. It has great potential for use by policymakers and the AETSM. However, significant improvements must be made in analysis and packaging if the potential is to be reached.

CONCLUSIONS

A vast amount of reliable data now exists in Malawi, and more will be generated in the future. The key to usefulness for which data exist or are in process is the analyses used.

For the future, both extension and research have a responsibility to indicate what each needs to provide a base for its research and educational programs. Some survey people do not feel that either is filling this responsibility adequately. They also feel that neither is fully utilizing the information now generated.

They may have a point. However, certainly extension personnel are interested and willing. Some of the ADD Evaluation Units personnel are relatively inexperienced. It was felt, generally, that all needed additional training in data analysis, processing, and packaging to more adequately meet



the information needs of other extension personnel in the ADD. Basic sample selection and collection processes are determined for them. They need micro-computers which are compatible with computers at DPC. This will permit more thorough processing and analysis at the ADD than is possible now using the "hand extraction" method. But personnel must be trained in the use of micro-computers, or else their acquisition will be useless.

But it is wrong and misleading to assume that ADD data collection, processing and analysis starts and stops with the appointment of an Evaluation Officer. Management must know what it needs and inform the assigned people. More of a total ADD management team interest and participation is needed in data processing, analysis and use. The efficiency of the information package for extension will depend on actions taken at each ADD, including the management team plus trained people in the Evaluation Unit.

RECOMMENDATIONS

The philosophy and direction for more effective use of present and future agricultural and related data in the AETSM must come from the top. This will lead to the total ADD management team involvement, which is essential.

It is recommended that this policy be clearly stated as soon as possible. In addition, a series of workshops and seminars should be initiated, and continued on a routine basis at the beginning and end of the survey periods. Participants should include the Central Evaluation Unit at MOA, all EOs, and senior ADD staff. The National Statistical Office is willing to participate in data analysis and interpretation training, but cannot (does not have resources) to basically train Evaluation Officers and others in this speciality.

Others who could participate are economists and agricultural economists already in Malawi, in the Division of Planning and Evaluation Central Unit



at MOA, the Evaluation Offices at ADD, the Department of Agricultural Research, Chitedze Agricultural Research Station, Bunda College, and at Chancellor College.

Beyond these seminars and workshops and the pro-data policy declarations, many of the EOs need advanced training in data processing and analysis. Information and Aids Branch personnel need to be involved also. If mini-computers can be obtained for the results already mentioned, the training of EOs must include the use of this equipment.

Finally, it was mentioned that the World Bank may assist in the establishment of an Agricultural Statistics Office at MOA. If so, top officials should gear its activities to the data needs of extension.



PRE-SERVICE TRAINING OF EXTENSION STAFF

INTRODUCTION

Almost all the staff now working in the agricultural extension service received their pre-service training from one or more of the Malawi educational institutions discussed in this section.

A review of their curricula combined with discussions with faculty members and observation of their teaching and practical facilities, indicates that these institutions generally are doing a good job of preparing men and women for future jobs. This opinion is supported by the relatively successful record of their graduates as trained generalists performing in positions which require specialized training.

TRAINING INSTITUTIONS

Bunda College of Agriculture

Two kinds of academic programs are offered. One leads to a Degree in agriculture (5 years) and the other to a Diploma in agriculture (3 years). The training is expected to prepare Degree holders for many high level positions in agricultural extension such as CADO, ACADO, PM, TRO and other subject-matter related senior staff positions in the ADD. Those with diplomas are qualified to hold intermediary positions such as Development Officer and Evaluation Officer. The number of students is 427, including 72 women.

Bunda College offers a good blend of theory and practical work in extension in its courses. More emphasis could be placed on the practical aspects of the extension related courses. However, considering the fact that the objective of the curriculum is to produce generalists in agriculture rather than specialists in extension, the present approach of the College is not unsatisfactory.



The College has a well qualified faculty, both national and expatriate, and enjoys good physical facilities for instruction. Heavy dependence on the expatriate faculty (about 60%) causes a problem related to continuations of specialized instruction since these faculty members have contracts ranging from one to three years. This is one of the main reasons for not starting a Master's program. About 25 national faculty are at present overseas for advanced training.

The institution does not offer any continuing specialized, in-service training programs for the extension staff. Two main reasons are given: financial constraints and organizational affiliation with the Ministry of Education (MOE). During interviews with extension administrators and field staff, the College received some criticism. Although it is the major institution producing agriculture graduates, its position under the MOE sometimes means that it is not familiar with the policies and operations of the MOA. A more effective linkage system is needed. The faculty of the College who were interviewed also mentioned that in order for them to offer any in-service training to extension staff, prior approval of the University of Malawi is necessary. They, however, expressed their willingness to provide specialized courses, especially during the summer months, provided the MOE gives approval through the University of Malawi and funds are available.

The College recently started some outreach educational activities on a limited basis.

Colby College of Agriculture

This institution provides a two-year course leading to a Certificate in Agriculture. The pre-service training provided through this college is expected to prepare its graduates to function as Field Assistants (FA), the



front-line field extension agents who make up the main part of the extension force in Malawi. The College also provides in-service training to old "Demonstrators" so that they can be promoted to the position of FAs.

At present, the College has an enrollment of 358 students, including nine women. There are 30 faculty members and only one is an expatriate. Its curricula are presently being revised. Although still located in its original building, it has good residential and practical facilities for its students. Experimental plots are associated with most subjects taught and provide students a firsthand opportunity to learn about crops and livestock. Specialists from nearby Chitedze Agricultural Research Station participate from time to time as guest speakers. A very positive policy of the College is that faculty members make follow-up field trips throughout the country to observe the performance of its graduates and note problems identified by them so that the instruction can be as realistic as possible.

The main reason for having a rather small number of women is that both Colby College and Thuchila Farm Institute advertise for students at the same time. More women are attracted to Thuchila because of its shorter course (one year as compared to two years at Colby) and its emphasis on home economics (Colby's emphasis is on agriculture).

The interview at Colby College revealed a serious shortage of specialized faculty. Almost all faculty members are Colby graduates with long records of service as extension workers. Only a few have received further training at Bunda College or overseas. As such, the faculty are generalists, but are required to teach specialized subjects like horticulture, soil science, crop production, zoology, botany, etc. Although they can be commended for their personal preparation to teach the subject, their need for intensive, in-service training cannot be overemphasized.



Colby College is under the MOA. On completion of the Natural Resources College in 1983-84, Colby will be absorbed by the new institution and will move.

Thuchila Farm Institute

Pre-service training of one year leading to a Certificate is offered to women. Graduates are eligible for the position of Farm Home Assistant (FHA). There are 20 students at present and a few more can be accommodated. The curriculum of the Institute is being revised for two reasons. First, the admission requirement has been raised to junior school graduation, and second, more emphasis will be placed on agriculture. The present curriculum focuses mainly on training in home economics.

The Institute has reasonable classroom, land for practical work in agriculture and livestock, equipment for sewing and cooking, and residential facilities.

The faculty is reasonably qualified in view of the objectives. Still the need for in-service training of faculty in special subject matter areas was expressed by the administration.

Audiovisual aids are not used much because they are old and spare parts often are not available. Better aids and relevant material are needed.

The Institute is presently providing in-service training for employed FHAs in subjects like agriculture and animal husbandry. The ADD specialist staff is providing the instruction.

The function of training FHAs now carried out by Thuchila Institute will be absorbed by the Natural Resources College. The Institute's facilities will be used for residential training of farmers and extension staff.



CONCLUSIONS

Bunda College of Agriculture is providing satisfactory pre-service training for future agricultural extension employees. It can prove to be a valuable source of in-service training also if bottlenecks due to financial and organizational constraints can be removed. With its current heavy dependency on expatriate faculty, recruited on a short-period contract basis, the College is unable to offer specialized subject-matter training through a Master's degree program. This fact underlines the need for advanced training of national faculty at a faster rate than that at present so that a core faculty could be established on a permanent basis. Specialized programs could then be initiated without the danger of discontinuation.

Colby College of Agriculture has been doing a good job of producing potential Field Assistants. Hopefully, when it and the Thuchila Farm Institute merge with the Natural Resources College, the competition for women students will be adjusted and more women can be trained as FAs. Colby College suffers from a serious shortage of well-trained faculty. There is an urgent need to upgrade the faculty, especially since these same experienced faculty members with appropriate subject-matter training could then continue at the Natural Resources College.

Thuchila Farm Institute needs urgent revision of its curricula to include agriculture. Some of its faculty need more training in specific subjects. The use of audiovisual aids in instruction is unsatisfactory. The Institute needs more and better audiovisual aids, with appropriate training of the instructional staff in their use.



Since both Colby College and Thuchila Institute are under the MOA, their operations are in line with policies and procedures of that Ministry. Bunda College, under the MOE through the University of Malawi, presents a different case. Apparently, there is no effective, routine mechanism of collaboration between Bunda and the MOA. Lack of such a mechanism does not permit the reflection of MOA's priorities and concerns when the decisions related to short- and long-term goals of the College are made by the authorities concerned.

RECOMMENDATIONS

An effective, routine coordination mechanism be established between Bunda College and the MOA

Better coordination between the MOA and Bunda College is necessary for more realistic pre-service training of potential MOA employees. A committee consisting of appropriate senior officers of the MOA (such as PAETO and PM), possibly representatives from Forestry and other agencies, relevant faculty members (those responsible for teaching extension and rural sociology courses, plant protection, agronomy, etc.) and key college administrators could function as a coordination mechanism. This committee should meet at least twice a year, and more if necessary. The agenda should be based on issues such as correlating training with job descriptions, explanation of the MOA policies and operations, in-service training needs, and other matters of mutual interest. It is imperative that such a committee have appropriate authority and status.

The quality of teaching staff at Colby College and Thuchila Institute be improved through appropriate training

A competent teaching staff to conduct meaningful pre-service training



is essential in the production of a competent extension staff. Considering the level of instruction and students at these institutions, training of teaching staff leading to advanced degrees is not essential, but it is preferred. If the present staff is to be transferred to the Natural Resources College on the merger of these institutions, they must be provided additional training in the specific subjects they teach, and also in teaching methodology. Such training could be provided through refresher courses of, say, one to two weeks' duration, focusing on technical subject matter, and through intensive workshops on teaching methodology. The training in technical subjects can be provided by the faculty at Bunda College and by senior research staff stationed at agricultural research stations. The MOA should take appropriate steps to obtain the services of Bunda College and the research stations. The training in teaching methodology can be provided by the national officers who have taken such courses overseas, or a short-term consultant from overseas could be requested.

The national faculty at Bunda College be provided advanced training at a faster rate for an early start of a Master's Degree program in Malawi

The main reason for having no advanced programs such as Master's degree in technical subjects is, as discussed earlier in this section, the shortage of national faculty at Bunda College. Although the College is under the MOE (through the University of Malawi), it is of significant importance to the MOA since it is the only institution in the country which produces agriculture graduates with Diplomas and Degrees. The present speed with which the national faculty are earning advanced degrees overseas and taking positions now occupied by expatriates is slow. The demand for qualified men and women in agriculture will increase in the future as Malawi expands and



reorganizes its agricultural development policies. This demand can be effectively met by expanding, at a later stage, the academic programs at Bunda College. Steps to ensure the availability of enough qualified faculty should therefore be taken now before reaching the critical stage.

Hopefully, funds from a technical assistance project may be found for overseas training of the faculty or to provide adequate faculty for in-country training. Although the MOE has given the green light for such a step, the MOA should play a more active role in deciding how many faculty members should receive advanced training, and have input concerning the subjects and degrees they should concentrate on. The DAD in the MOA should exercise control of funds for this purpose. Obviously, both MOA and the MOE will have to develop a collaborative mechanism for a smooth operation. The coordination committee suggested in an earlier recommendation could perform this function.

More audiovisual aids and equipment be supplied to Colby College and Thuchila Institute

It is estimated that the Natural Resources College will not begin operating at full capacity before late 1983 or 1984. Until that time, Colby College and Thuchila Institute will serve as the pre-service training institutes for FAs and FHAs. Both of these institutions, therefore, must be supplied more audiovisual aids and equipment both to assist in teaching and in practicals. An inventory of such equipment and accompanying materials should first be prepared in consultation with the administrators concerned. Later, these audiovisual aids and equipment can be transferred to the Natural Resources College.



Specialists at agricultural research stations should be involved more actively by pre-service training institutions

At present, the involvement of research specialists in pre-service training is negligible. In view of the training needs of the teaching staff, especially at Colby College and Thuchila Institute, the involvement of researchers specialized in applied agricultural sciences becomes even more important. FAs and FHAs, the front-line extension workers, could benefit greatly from their assistance in subjects like identification of plant insects, diagnosis of plant diseases, basic soil problems, etc., which are of great importance to farmers. Such collaboration, organized so that it would not excessively burden the research staff, should result from coordination between CADO and the CARO.

More effective measures be taken to interest more women in education in agriculture

It is a fact that most of the fieldwork on farms in Malawi is done by women. But the majority of extension agents are men. At present, the increasing emphasis on agriculture in the training of FHAs reflects the recognition that the role of women extension agents in the agricultural development of Malawi is gaining more importance. The need for larger numbers of women extension agents is also being felt. Despite such developments, the number of women students in all pre-service training institutions, including Thuchila Institute, is low.

At present, routine advertisements are placed in the newspapers announcing academic admission requirements and procedures for women. Announcements are made at some high schools for women. Although a large number of applications are received, many of the applicants are rejected after interviews.



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More effective techniques such as publicity focusing on the role of women in agricultural development, the growing importance of women extension agents, career-building for women in agriculture, etc., should be adopted to attract larger numbers of women applicants. Needless to say, the objective is to increase the number of women in fields like extension. With more women students, steps to expand existing pre-service training facilities will be necessary.

Curriculum at Thuchila Institute be revised soon in favor of agricultural emphasis

The curriculum for pre-service training of FHAs needs immediate revision to place more emphasis on agriculture. Hopefully some work is already being done in this direction, but a more organized approach based on the future role of FHAs is needed, and the earlier the better. A part of the revision may be region-specific training, especially if information on possible placements after graduation is available. Understandably, women extension agents most probably will be involved in women farmer's group organizations and field demonstrations. The practical side of training, therefore, should be job-oriented and strong. They might be involved in activities concerning credit, fertilizers and other inputs. Necessary components related to these activities must be included in the curriculum. FHAs should be given all the basic training currently being given to FAs, although not as detailed, in addition to their training in home economics.

Course on extension offered at Bunda College should put more emphasis on practical work

Although it is not the aim of the Degree program at Bunda College to produce extension specialists, and although the courses on extension presently offered do have substantial practical components, more emphasis on practical extension activities seems necessary. The theory as indicated by the



curriculum is quite extensive. In order to teach skills of extension such as demonstrations, contacts with farmers' groups, preparation and use of audio-visual aids, and familiarity with farm inputs (credit, fertilizers, insecticides, etc.), the students must be placed in real life situations in collaboration with the DAD. Such an exercise will not only help the students to learn rural development skills, but it will also assist them in making up their minds about adopting the profession of extension as a career. Moreover, as a result of conversations with farmers' groups and discussions with extension agents in real life situations, the students will be able to appreciate problems and prospects of rural and agricultural development in their country before they face them as employees.



IN-SERVICE TRAINING OF EXTENSION STAFF

INTRODUCTION

The team was favorably impressed with the performance of the extension staff in certain jobs for which they had received no special training. The interviews and observations, however, revealed that in-service training is the most urgent need. A very encouraging factor is the awareness of this need among the staff members. They are motivated to learn relevant skills for better performance of their jobs.

For the sake of convenience in isolating strengths and weaknesses in in-service training, the findings are discussed under specific components.

TRAINING COMPONENTS

Needs' Determination

Training needs' determination is done most frequently and actively for FAs, and to a lesser extent for FHAs by DOs. However, there is no systematic procedure followed, and the DOs perform this task just by observation.

For positions above FAs and FHAs but based in a project area, the training needs are decided by the POs. Again the decision is based on the difficulties of the staff on their jobs as observed by the POs. For positions like POs, SMSs, EOs, PMs, and more senior positions, the training needs are determined in an even less clear way.

Budget for Training

The shortage of funds for training purposes was generally cited by the TROs. They would like to have more in-service training activities if more funds are made available.

Training Sites and Institutions

Most of the training activities for FAs and FHAs take place at Day Agricultural Training Centers (DATCs) and Residential Agricultural Training



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Centers (RATCs). A group of FHAs is now training at Thuchila Institute while Colby College is providing upgrading training for Demonstrators. Bunda College offers an upgrading program for TAs. The College organized a UNDP-financed seminar on communications last year. The College is not actively involved in in-service training of extension staff because of its organizational affiliation to the MOE.

An observation of several DATCs and RATCs indicated unsatisfactory physical facilities especially at DATCs. A DATC is in fact the office of the DO. It has a small room which serves as an office, and another larger room which is used as a classroom. There are bulleting boards outside some DATCs. Many classrooms at DATCs have poor seating and lighting facilities. There are almost no audiovisual aids and few teaching supplies. The demonstration plots are perhaps the best feature of the DATCs. But they need expansion and organization.

The RATCs have better classrooms, residential facilities and demonstration plots. They, however, also lack supplies of teaching materials, equipment for farming practicals and audiovisual aids. Some RATCs have outdated audiovisual aids which are seldom used because of lack of spare parts. The furniture needs improvement. The RATCs are supplied with vehicles to collect trainees from their posts but they do not have comfortable seating arrangements. They sometimes have no top thus exposing the passengers to the weather. There is always a danger of falling out of the vehicles.

Some ADD headquarters based staff members are sent overseas for short courses and a few enter advanced Degree programs. According to some officers who have returned from overseas training, the programs are of little practical value. For example, a course on teaching methods offered in Zambia was



said to be highly theoretical. Similarly, a five-month course on program planning offered in Israel did not benefit the officer interviewed because all the participants, regardless of their academic qualifications and experience, were placed into one single group. Such views reflect the need to correlate overseas programs in terms of the participants' real training objectives.

There are certain seminars for the staff held at project and ADD headquarters but more than training, they seem to be an exercise in discussing project matters.

Training Staff

The training of extension agents at DATCs is the responsibility of the DOs. The SMSs based at ADD and project headquarters also function as trainers. The competence of DOs, SMSs and other headquarters staff as trainers is subject to question. They have not received intensive training even for their own jobs, much less in training others. The TROs are mostly engaged in administrative duties and only in rare cases do they conduct training sessions themselves. Few have received substantial job-related training.

The researchers based at agricultural research stations are also involved in providing subject-matter training to the extension staff but not often.

The faculty of Bunda College are not invited as trainers partly because of their busy schedule and partly because of their emphasis on theory. Another reason is that the College is not under the MOA.

Both Colby College and Thuchila Institute provide some in-service training but their faculty members are not competent in technical subjects and training methodology. They are at least generalists with long experience as FAs.



The RATCs have their own resident training staff. Unfortunately, they too have received very little, if any, intensive training in the subjects that they are supposed to teach and are, therefore, learning on the job. They also lack training in training methodology.

Not only quality but the number of trainers also is very low. In some cases, there is only one instructor who travels widely from one RATC or DATC to the other.

Training Approach

There are no pre-tests conducted to determine participants' prior knowledge about the training topic. The training methodology mainly consists of lectures and practical demonstrations. Some printed matter is distributed among the trainees. The participants sit in one group and are seldom divided into subgroups. More emphasis on practical aspects through demonstrations will be a constructive change.

Audiovisual Aids and Equipment

The use of audiovisual aids in in-service training is very limited unless the course itself is on audiovisual aids. Charts are the main aids used. There are many reasons for limited use of audiovisual aids. Some training sites do not have electricity. The equipment is outdated. Much of it needs repairs but spare parts are not available in the local market. Some equipment, such as projectors, is available but there are not enough films and slides. In some cases, equipment is too sophisticated and the staff members do not have training in its operation. Several circulars and other publications are sent to ADD's headquarters by the Extension Aids Branch but they are not always distributed among the field staff.



It must be pointed out that the staff members in training positions are aware of the potential benefits of audiovisual aids and they would like to use them if they had equipment, accompanying materials and the training to operate them.

There is a definite need for more equipment and tools for practicals and demonstrations at DATCs and RATCs. Whatever is available at these centers is being used to the maximum extent and this provides an encouraging base for further additions to and operation of audiovisual aids and equipment.

Frequency

Although the budget and facilities for in-service training are limited, the frequency of training activities especially at DATCs and RATCs is quite high. These centers are being used to their fullest capacity. Training sessions for staff other than FAs and CAs are not so frequent. If necessary funds and facilities are available, in-service training programs can be expanded.

Evaluation and Follow-up

Evaluation of the training by the participants is informal and there are no structured evaluation forms for this purpose. Likewise, follow-up is also informal. The supervisors observe in the field how much an extension agent has benefitted from a particular in-service course. At least one ADD maintains staff training records in the form of cards.

Course Content and Target Audience

In-service training is meant to fill the gaps between the professional readiness of employees by virtue of their pre-service academic training and knowledge and skills required to perform the relevant jobs. In-service training is also a tool to keep the employees updated in terms of their



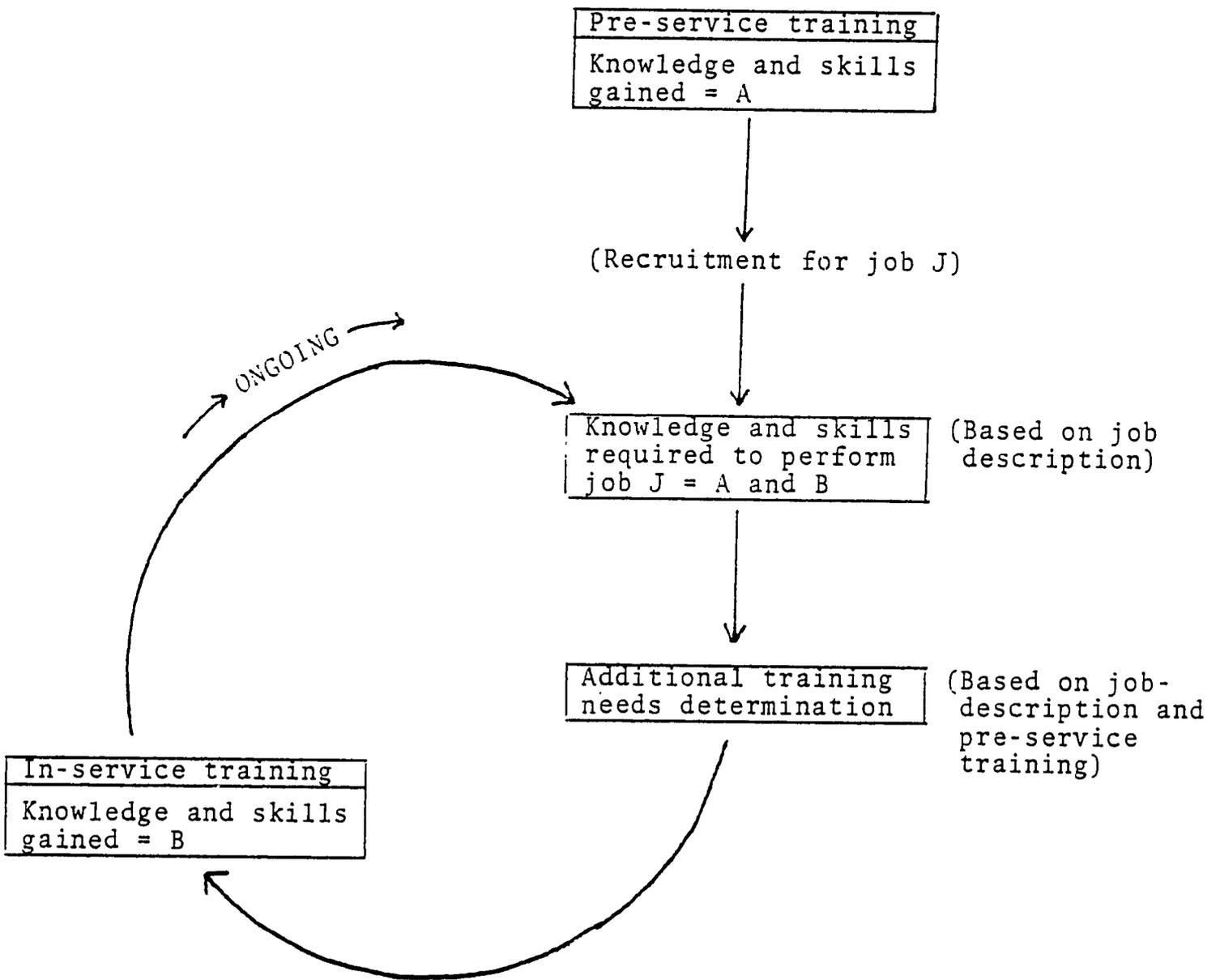
technical knowledge and skills. The interrelationship among pre-service training, in-service training and job performance is shown in Figure 1.

The discussions and review of in-service training programs indicate that FAs, CAs and FHAs receive more training than other employees. The course content is somewhat relevant to their jobs but if the curricula of the courses presented throughout the year are judged against their duties, there is not much offered to fill in the gap between pre-service training and their job descriptions. For example, an analysis of in-service training sessions spread over a ten month period in an ADD shows not a single course on group dynamics and organization for FAs, although organizing farmers' groups is one of their major responsibilities. The training plans do not closely match the pressing training needs of some staff members. Almost all new staff in the positions (due to promotions, transfers or fresh recruitment) expressed their frustration over the lack of in-service training that could make them more competent in their new jobs.

A prime example of this problem is EOs at ADDs whose job is to analyze and interpret relevant data and put it into action-oriented terms. They have received no training for this particular job and as a result piles of valuable data collected at great expense of time, money and energy are waiting to be analyzed and interpreted. Similarly, the SMSs attached to the ADDs and other projects are in fact generalists rather than specialists. Very few of them, if any, have received specialized training in their subjects. The same is true for other positions such as PMs, TROs, ROs, POs and Agricultural Extension Officers. The PMs carry important responsibilities regarding administration and finance but few of them have received training in financial management. The DOs lack training in supervision which is one of



Figure 1: Inter-relationships among pre-service training, in-service training and job-performance.



their main duties. Similarly, senior staff based at the MOA also need in-service training related to their duty assignments.

Although Thuchila Institute is providing some in-service training in agriculture for the "old" FHAs, it is not enough. During assessment activities it was learned that the FHAs are known as "cake bakers" because of their pre-service training emphasis on home economics. Their new role in which they are supposed to advise farmers on agriculture also demands in-service training which could equip them with necessary skills, knowledge and attitudes.

Another important content ignored in in-service training courses is "region specific" information. Since ADDs differ in climate, topography and crops grown, region-specific emphasis in training is necessary.

Farmers interviewed pointed out that the FAs need training in horticulture (vegetables and fruits) and poultry farming because these two subjects are gaining popularity among the farming community. Some of the farmers mentioned that FAs, new in their jobs, do not know much about fertilizer and insecticide application. Obviously, both of these practices are crucial and their wrong application could destroy the whole crop. The farmers acknowledged, however, that after some time, the FAs do learn about these things. At some ADDs, dissatisfaction was expressed on the lack of appropriate training for extension agents in credit related activities.

The staff based at the Extension Aids Branch (EAB) have several specific advanced technical training needs which cannot be met in Malawi. A more elaborate discussion on the EAB is presented elsewhere in this report.

All new recruits from Bunda College undergo a three weeks' induction course organized by the MOA, and later they receive some orientation at the ADD head-



quarters. The recruits from Colby College receive such orientation at the ADD headquarters only, while those from Thuchila Institute attend the orientation arranged by the MOA, although separate from the Bunda group. The EAB also offers introductory courses for new Audiovisual Aids Officers. All of these introductory courses are certainly useful for the new staff. But they fall far short of satisfying more specific job-related training needs.

CONCLUSIONS

There is a pressing need for in-service training of certain extension staff at the top, middle and lower levels. The programs now included in in-service training are useful but not sufficient because they ignore so many employees occupying important positions. The training procedures are not scientific and need-oriented. Both technical and financial assistance is needed to improve the situation.

Training centers, especially DATCs, have poor physical facilities and equipment, although they are performing their functions to the best of their ability and capacity.

Some short-term overseas training has not proved to be of much value to some participants. This fact underlines the importance of a careful selection of overseas training programs.

Pre-service training institutions do not make significant contributions towards extension staff development. Appropriate coordination measures are needed in order to make these institutions more productive in this regard.

The training staff, although hard working and serious in the performance of its duties, lacks much needed expertise in the subjects they teach. They



also need training in methodology and teaching aids. Extension suffers from a serious lack of competent trainers.

The main target of in-service training, i.e., filling in the gaps between the professional readiness of employees by virtue of their pre-service training and knowledge and skills required to perform the relevant jobs satisfactorily, is not being met at present. The senior staff members are conscious of this problem and are willing to benefit from appropriate in-service training opportunities.

RECOMMENDATIONS

Job related in-service training be provided to extension staff at top, middle and lower levels as soon as possible

If the reorganized agricultural extension service is to function effectively almost all the staff holding new position titles must receive intensive in-service training focusing on their job descriptions. This is true for staff at all levels but is especially urgent for those at ADD and project headquarters.

The specific training needs for some of the positions have been discussed earlier in this section. An appropriate way to handle such a vast in-service training program would be to divide the staff into several groups. The first group should consist of top level extension administrators based at the MOA who could be sent overseas for short-term training in policy, management, planning and administration. The second group will consist of the PMs, Assistant PMs and POs from all ADDs. Their training areas will be administration, financial management, work planning and job-related topics. The format of training should most probably be a series of in-country workshops organized by expatriate experts. Similarly, other positions based at different ADDs and projects should be placed into homogeneous groups for training in their



respective position-related areas such as evaluation, analysis and interpretation of data (for EOs), training administration and methodology (for TROs), liaison between extension and research, field trials (for ROs), extension approaches and administration (for Agricultural Extension Officers), preparation and operation of various kinds of audiovisual aids and equipment (for Extension Aids Officers), supervision and training (for DOs), and, of course, technical subject-matter (for SMSs). Their training, again, will be in Malawi by expatriate experts.

The FAs, FHAs and CAs will form separate groups and will receive short-term refresher courses in addition to special courses in the subjects not properly covered in their pre-service training. The examples of the latter are agricultural training for FHAs and training in horticulture and poultry production for FAs. Region-specific emphasis should be an important aspect of their training. The training of these groups will be provided in-country by national staff in collaboration with outside technical assistance.

A core group of national trainers be developed in the extension service

In order to plan and implement training activities effectively, the extension service should develop and maintain a core group of national trainers. The PAETO should, with the assistance of ADD training officers, develop a list of staff within the DAD and outside, such as at Bunda College, the National Statistical Office* and various research stations who are competent and can serve as training resource persons. The services of the persons outside the MOA could be requested on an ad hoc basis through proper channels. Most probably, they will expect some compensation from the MOA. The information on expertise and availability of the selected staff should

*The National Statistical Office expressed its willingness to organize training seminars for Evaluation Officers.



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then be matched with the training needs of the extension staff and plans drawn up.

The list of resource persons may be short at the beginning but it will gradually expand as more national officers receive advanced training either overseas or in-country. This list should be updated periodically for addition or deletion of names.

Appropriate organizational measures be taken to involve Bunda College in in-service training more actively

This particular recommendation has been discussed in detail under the section on pre-service training. Appropriate organizational measures mean establishing a coordination mechanism between the DAD and Bunda College, upgrading the faculty of the College, necessary approval from the MOE or University of Malawi, and funding by the DAD. If such measures are taken, Bunda College with its human and physical resources can be used as a valuable base for in-service training.

Day Agricultural Training Centers be provided with more space, applicable audio-visual aids, teaching supplies and better classroom facilities

The DATCs need more space for practicals and storage of equipment, better furniture, better lighting, more classrooms, teaching materials, and appropriate audiovisual aids and equipment. The DATCs which have electricity can be given electrical equipment while others should be supplied with battery operated teaching aids. Since a DATC is basically a DO's office, better office furnishings such as filing cabinets are needed. One or more bulletin boards should be placed outside for announcements and extension posters.



The DATCs are of great importance to the extension service. They serve as the office of DOs where FAs, FHAs and CAs gather for program discussions. They are also used for training of extension staff and men and women farmers within a radius of five miles or more. The DATCs should, therefore, be comfortable places equipped with necessary facilities.

Residential Agricultural Training Centers be supplied with more teaching materials and equipment, better audiovisual aids, and comfortable seating and transport facilities

Although RATCs are better equipped than the DATCs in terms of physical facilities, they need much improvement. They should be given more supplies of teaching materials, more equipment and tools for practicals and applicable new audiovisual aids. Their classrooms must have better seating and light facilities. Those RATCs which enjoy transport facilities because of the magnitude of their operation, should have better vehicles with comfortable and safe seating arrangements for passengers. Several bulletin boards should be placed for announcements and extension messages.

The Teaching staff of Residential Agricultural Training Centers be given intensive training in technical subject matter and instructional methodology

The instructional staff members at RATCs who are responsible for improving technical knowledge and skills of extension agents and farmers must themselves be competent in carrying out their duties. They should be given training in relevant technical subjects and teaching methodology (including the preparation and use of audiovisual aids). This training can be provided in-country most probably in the form of short-term courses and workshops by the SMSs based at training institutions and research stations with some technical assistance from outside.



A job-oriented training program for employees on joining the service be made an essential feature

All new employees in the extension service should undergo several weeks of training immediately after joining the service. This training program should consist of orientation to the organizational structures, policies and operations of the MOA and other relevant departments (something similar to the induction course given at present) and activities directly related to their job descriptions. This program should become a permanent feature of the extension service.

This training program can be organized by senior officers of the MOA in collaboration with the PMs. The orientation portion can be covered at the national level while the rest of the training may be given at the ADD level. At the beginning, some outside technical assistance will be needed to train the present ADD level staff. Later, this trained, experienced and senior staff could provide necessary job-related training to the new employees. An example of such training could be where a DO provides position-related information to the new FAs and FHAs, puts them in touch with the senior counterparts, and introduces them to local leaders.

Region-specific and project-specific training will be an important part of the recommended program. It is essential because some ADDs differ considerably from others in terms of their climate, topography, crops and irrigation conditions. Some ADDs have somewhat different organizational structures because of different donor activities. Similarly, various projects in various ADDs have different emphases.



A better decision-making process be followed for selecting relevant training programs in other countries.

Not all programs offered overseas are relevant to Malawian needs. As evidence shows, some overseas training programs have proved to be of limited use to the participants from this country. Before sending any national overseas, all possible information regarding the content and methodology of the course, duration, cost, level of education and experience of the other participants, instructional staff, and emphasis on practical versus theory should be obtained by the TRO of the ADJ concerned. The course should be compared with other similar courses offered elsewhere. On return of the participant to Malawi, his/her immediate reactions to the course should be recorded and judgments made as to whether more participants should be sent for the course or not.

Malawi is a developing country with quite limited resources. It cannot afford to waste time and funds on overseas training which will not address its real needs. The agricultural training programs offered in certain universities, mainly in the southern United States, are relevant to Malawian conditions because of climatic and agricultural factors. Similarly, there are several training institutions in the Third World Countries but the emphasis of their programs may not necessarily be related to Malawian needs. Extreme care, therefore, should be exercised in selecting the out-of-country training programs.

Selected extension staff be sent overseas on field trips of short duration

Selected extension staff should be sent in different groups at different times to other countries of Africa and Asia. These field trips should be of one to three weeks' duration and should cover several countries. The purpose of such trips will be the observation of extension organization,



operations and farming practices in other developing countries. Such study tours can be organized in collaboration with international donor agencies and missions of host countries.

The planning for these trips must include careful selection of the countries and the programs. The selection of programs should be based on the level of the participants, i.e., whether they are, for example, ADD senior officers or field extension agents. Before departure, the groups should receive an orientation concerning the objectives of the tour, details of the program, logistics, etc. It will be useful to send a senior officer from ADD with each group of extension agents. The participants should record their observations during the tour and later discuss them at ADD headquarters to identify any useful practices that may be applicable under local conditions. The selection of participants for these trips should not be biased in favor of only senior officers.

Inter-ADD field observation trips and meetings be organized frequently for different levels of staff

At present, only PMs and EOs from various ADDs meet about every two to three months. This is not enough. There should be more frequent meetings of extension staff from different ADDs, followed by field trips and discussions. They should discuss problems and possible solutions based on their individual experiences in their respective ADDs. Use of audiovisual aids should be encouraged. Such meetings of maximum three-days duration should be held at different times for different levels of staff. Conclusions and recommendations should be recorded at the end of each meeting. Exchange of practical experiences through such inter-ADD meetings, field trips and discussions will



broaden the outlook of participants and will also develop a team spirit to look into agricultural problems that are common to all regions. Such an exchange of ideas and experiences will be a powerful tool for enrichment and professional growth of the extension staff.



COLLABORATION AMONG EXTENSION TRAINING INSTITUTIONS

The interviews of officers of the MOA, faculty and administrators at Bunda College, Colby College and Thuchila Farm Institute indicated that there is no formal collaboration and communication mechanism among these institutions.

Colby College and Thuchila Institute are both under the MOA and are subject to the policies and operations of the DAD. Bunda College, under the MOE (through the University of Malawi) is isolated from the MOA. The assessment team found out that in the last two or three years, Bunda College had invited representatives of the extension services for discussions only once.

Residential Agricultural Training Centers' and Day Agricultural Training Centers' activities are dovetailed by their respective ADD program planners. Since they are under the MOA, they all operate within guidelines established by the MOA.

CONCLUSIONS

The three main academic institutions involved in the pre-service training of extension staff have no formal mechanism for collaboration and communication.

The activities of the extension in-service training centers are harmonious because they operate in line with the policies and guidelines of the MOA.

RECOMMENDATIONS

The important recommendation regarding establishing a formal mechanism of collaboration and coordination between MOA and Bunda College to facilitate pre-service and in-service training of extension staff has been presented in the section on pre-service training of extension staff. (See pages 39-40)



EXTENSION METHODS AND FARMERS' TRAINING

The Group Approach and Demonstrations

The main extension approach of the Malawi extension service is to contact farmers in groups. This approach is necessary because the number of extension agents is not large enough to contact farmers satisfactorily on an individual basis.

Initially there were (and in some cases still are) special commodity or interest groups of farmers, and recently the formation of Farmers' Clubs. has been encouraged by the Extension Service. Farmers get together and create a club. A club should have about 15 to 30 members. The club members must have a meeting place, a small building which, when necessary, could also serve as a classroom, and a demonstration plot. The members elect a chairman who is responsible for bookkeeping and who also serves as the contact farmer. Technical advice is given by the FAs, and in some cases FHAs, who are expected to visit each club approximately every two weeks. Following the technical advice from the FAs, and providing inputs from their own resources, the club members grow various crops on their demonstration plot. The income from the crops goes into the account of the club.

The visits to some farmers' clubs, their demonstration plots, and talk with the chairman and member farmers indicates that the system is working well. Farmers were generally satisfied with the club approach. In some cases, they complained about fertilizers not being delivered on time. This affected their tight timetable related to the short rainy season. Farmers expressed confidence in the technical advice and the method of demonstration used by the FAs. They like the club system because through it they can get



credit from the government more easily. According to an extension officer, the formation of groups and clubs has resulted in almost 100% recovery of loans and credits given to farmers, mainly because of peer pressure. Table 1 shows the position of Farmers' Clubs in Lilongwe ADD projects and the seasonal credit demand by the clubs.

At present, there are no clubs consisting totally of female members only, although some farmers' clubs include a few women. The average number of members in the clubs visited was 12.

Interviews with farmers also indicated that the clubs system has enhanced interaction between them and extension agents since extension agents visit the clubs on a regular basis. Dates for such contacts, demonstrations, and field days are part of the work plans prepared by all FAs and FHAs in consultation with their respective DOs. Both farmers and the extension agents pointed out that in most cases the attendance at demonstrations and field days was higher than expected. This indicates that farmers are accepting the technical advice and recommendations given by the extension agents.

FARM VISITS

Although the main extension method currently followed by the DAD is the group approach through Farmers' Clubs, there are several areas where such clubs have not been formed. Also, there are many local farmers who for some reason have not joined existing clubs. Under these circumstances, visits to individual farmers by the FAs is necessary.

At present, except in some project areas where the extension agent to farmer ratio is satisfactory, each FA has to cover a large area spreading over several miles. In some ADDs, the farm families are scattered over a





Table 1

Position of Farmers' Clubs in Lilongwe ADD Projects (March 1982)

General Development Project	No. of Farm Families	No. of Clubs	Membership	Club Fund (K)	Seasonal Credit Demand (K)
Lilongwe	120,000	1965	38,603	509,110.30	2,800,000
Lilongwe Northeast	40,000	145	8,776	4,960.96	460,000
Thiwi/ Lifidzi	35,000	73	5,010	3,728.48	469,000
Dedza Hills	28,000	67	2,515	2,352.28	219,000
Netcheu	40,000	87	2,882	1,893.96	126,000
Total	263,000	2337	57,786	522,045.98	4,074,000

Source: Lilongwe ADD documents.

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large area while in others they are more concentrated. The only transport he/she has is a bicycle. If he/she has to stay overnight, the only extra allowance he/she gets is 75 tamabla (about 70 cents) per night.

The frequency of farm visits made by extension agents is not uniform in all areas. Talks with the farmers reflected a positive impression about the farm visits. When asked whether the visits made by the FAs to their farms were too few or too many, most farmers answered that the number of visits depending on their needs and cropping seasons was about right.

It was interesting to find out that few of the extension staff, whether based on ADD headquarters or in the field, supported the idea that FAs should be equipped with motorcycles. The FAs themselves expressed satisfaction with their bicycles.

DAY COURSES FOR FARMERS

Day courses for the farmers, men and women, are held at DATCs (which also are the offices of DOs). Each EPA has one DATC. (See Map 3) There is a demonstration plot attached to each DATC. The training needs of the farmers are determined by the extension agents and farmer leaders and then a training program is prepared under the supervision of the DOs. The frequency of courses depends on the particular needs of the farmers, but the average is two training sessions each week. Each session lasts approximately two hours and includes lectures, discussions and practical demonstrations. The training staff consists of DOs, FAs and FHAs. In some cases, due to the small numbers of FHAs, one FHA covers several DATCs on a weekly basis.

In most cases, a DATC serves the training needs of farmers in a radius of about five miles, but in some cases the area is much larger. The farmers who live within five miles normally walk to the DATC, but those living beyond are given rides by the Project Officers in their official vehicles.

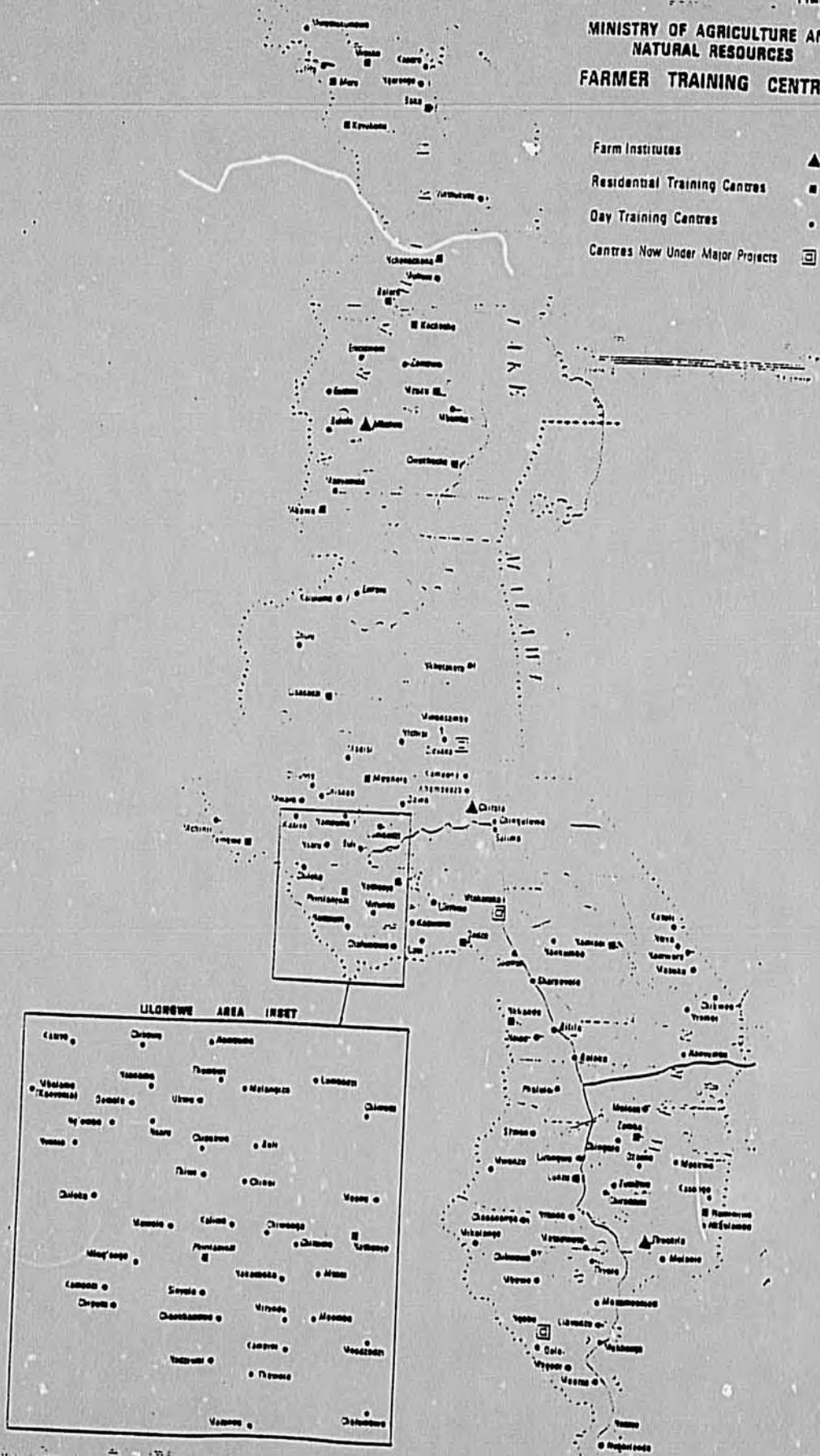


REPUBLIC OF MALAWI

Map 14

MINISTRY OF AGRICULTURE AND
NATURAL RESOURCES
FARMER TRAINING CENTRES

- Farm Institutes ▲
- Residential Training Centres ■
- Day Training Centres ●
- Centres Now Under Major Projects □



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The selection of farmers for training at the DATCs is made by the FAs. Those selected are informed in advance about the date and time of the course.

The curriculum of the course normally relates to the farmers' local needs during a particular period. But since courses of general interest are also offered to both men and women, the day courses are becoming a year round activity of DATCs. Normally, there are separate classes for men and women but sometimes women farmers attend courses with men farmers. The language of instruction is Chichewa.

The attendance of participants is satisfactory. Farmers said that they found the courses useful. A main advantage of these day courses is that topics are covered which FAs and FHAs cannot cover through regular contacts with the Farmers' Clubs.

Some examples of courses offered for both men and women as noted from the schedule of a DATC are: benefits of credit, credit payment and the role of club leaders (for men); health education (for women); topping, harvesting, and curing of tobacco and barn repairs (for men); introduction to food and nutrition (for women); use of livestock products and basic management practices (for men); vegetable growing (for women); seed selection in maize, and early ploughing guidelines (separate sessions for men and women). Thus, the courses cover a large variety of topics. The courses for women include both home economics and agricultural topics.

Detailed discussion on the findings and recommendations related to the physical facilities, instructional procedures, quality of training staff, audiovisual aids and equipment at the DATCs is found in the section on in-service training of extension staff.



An evaluation and follow-up of the day course is accomplished through visits to the farms by FAs, FHAs and the DO to see to what extent the farmers are adopting the practices recommended at the DATCs. However, no formal study has been conducted by the AETSM to determine the role of day courses in the adoption of new agricultural practices by farmers.

RESIDENTIAL COURSES FOR FARMERS

Residential courses of from one to two weeks duration for farmers, men and women, at Residential Agricultural Training Centers and Farm Institutes are held. Each ADD has at least one RATC or Farm Institute. (See Map 3) These training centers have better physical facilities than the DATCs. Such facilities include better classrooms, demonstration plots, practical facilities for training related to agriculture, livestock and poultry, dorms and dining halls, and equipment for farming, etc. The RATCs serving large areas normally have transport facilities of one or more vehicles, which are used to collect trainees in their villages. The residential capacity of RATCs varies from 30 to 100, depending on the size of the center.

During the entire period of training, the trainees are given free rooms and meals.

The selection of farmers for training at RATCs is by Training Program Committees consisting of local leaders and the extension staff. The same committees are also responsible for training needs assessment and follow-up.

Unlike year round training at the DATCs, the training sessions at RATCs start at the end of the active cropping season and end at the beginning of the next cropping season so that farmers are not kept away from their fields during periods of peak farming activities. The language of instruction is Chichewa.



Normally, there are no mixed classes and training courses for men and women are organized separately at different times. The assessment team was impressed by the large attendance of farmers, men and women, in the courses. According to the principal and instructional staff of the RATCs, the demand for residential courses is greater than the existing facilities can meet. The participants seemed motivated and they expressed their feelings about the usefulness of the training to them.

Follow-up and evaluation of the training program is also made by the staff of the RATCs during the active farming season through farm visits. Although both farmers and extension staff feel that residential training is a useful activity, no formal study of its effect on farming practices has yet been conducted by the DAD.

Examples of courses offered for farmers at one of the RATCs are: fruit and vegetable growing (for men); home economics (for women); and agriculture (separate sessions for men and women).

Detailed description of the findings and recommendations related to physical facilities, instructional methodologies, teaching staff, audiovisual aids and equipment is presented in the section on in-service training of extension staff.

CONCLUSIONS

The group approach to extension programs through Farmers' Clubs seems to be working well. Both farmers and extension staff indicated satisfaction with it. This approach has increased contact between the two groups, and the use of farm credit has been facilitated. Demonstrations and field days are being performed to the satisfaction of farmers.



Because of the relatively small number of Farmers' Clubs at the moment, visits to individual farmers by FAs and FHAs are still necessary. With large areas to be covered, using bicycles, the extension agents spend considerable time and energy on these farm visits.

In spite of the unsatisfactory physical facilities at Day Agricultural Training Centers, the day courses are appreciated by farmers. The DATCs remain busy throughout the year and record a large participation of farmers. In view of the important function being performed by the DATCs, the lack of appropriate facilities at the DATC is unfortunate.

The residential courses offered to the farmers at Residential Agricultural Training Centers and Farm Institutes are very popular among the farmers. This is indicated by their participation in the programs. The RATCs, although enjoying better facilities than the DATC, still need improvement in their resources. The total cost of residential training including accommodation and meals of participants is borne by the Ministry of Agriculture (MOA). Initiation of income generating activities by these training centers could ease the burden on the extension budget.

No formal studies related to the effect of different extension methods on the agricultural practices of farmers have been conducted. Therefore, apart from informal observation by the extension staff, there is no scientific basis for concluding that any particular extension approach has proved to be more effective than others.

RECOMMENDATIONS

These recommendations are in addition to those related to RATCs and DATCs presented in the section on the in-service training of extension staff.



Farmer groups be sent to study tours in other countries

Study tours for separate groups of men and women farmers to other countries should be organized by the extension service in collaboration with international donor agencies. Only those countries should be chosen which are comparable with Malawi in terms of climate, but which have a more developed agriculture. Each group should be accompanied by one or two extension staff members who could also serve as translators for the participants. Before departure, the participants should receive a thorough orientation. On return, the farmers and extension staff should have joint sessions to assess the usefulness of the tour and discuss measures for follow-up. The selection of farmers for such study tours can be made by the Training Program Committees who select farmers for training at RATCs and DATCs.

Income generating operations be initiated at RATCs and DATCs to ease the burden of the Ministry of Agriculture Budget

At present, the training at RATCs and DATCs is provided by the Ministry of Agriculture. Long courses at RATCs involve accommodations and food costs for a large number of participants. These activities consume a sizeable portion of the budget. If funds are available, DATCs and RATCs should add substantial acreage of land at each site for use for field trials, result demonstrations in crops, poultry, and livestock. The products should be sold and the income used to help support training activities. This would not be a conflict of interest with the smallholders because more production will be needed to feed the people and add to exports. The income will help meet training expenses.



Extension advice be given to the crowds at Rural Health Stations

Extension should consider presenting more of its programs at the Rural Health Stations where many people assemble and wait for long periods. Most of them are not desperately ill. They wait for treatment. Many of these people are women and agricultural and home economics subjects could be taught.

Formal research studies be conducted to determine the effect of various extension approaches on agricultural practices of farmers

One of the questionnaires included in the recently conducted National Sample Survey deals with the working relationship between farmers and extension agents. The data collected have not been tabulated, analyzed and interpreted. Apart from this attempt, no formal study has been conducted on the subject. All ADDs should take steps to initiate such studies. Perhaps the Evaluation Officers should lead the effort. Such studies will help in identifying strengths and weaknesses of different extension approaches.

FHAs assist in organizing women farmers' clubs

The finding that there are not many women in Farmers' Clubs suggests that there should be separate women farmers' clubs. In view of the significant contribution of women to the farming operations, women farmers would profit from the group extension approach and the distinct benefits associated with it. The FHAs should take the responsibility of assisting the women in forming such clubs. Since the FHAs are not yet well trained in giving advice on agricultural matters, they should be helped by the FAs and DOs.



EXTENSION SUPPORT MATERIALS

EXTENSION AIDS BRANCH (EAB)

Almost all printed and photographic materials and broadcasting programs which support extension programs are produced by the Extension Aids Branch (EAB) of the Ministry of Agriculture. In addition to the central EAB, each ADD has its own extension aids section which is not fully developed.

The main functions of EAB include mass coverage through radio, compilation of extension literature, development of visual materials, provision and maintenance of mobile cinema services, movie films, media evaluation services, and printing services for written media. These functions are carried out by seven sections: publications, technical, editorial, photographic, cinema, radio, and the evaluation and action research unit, all located in the same building. The EAB also organizes extension aids induction courses for all new Audiovisual Aids Officers.

Looking at the variety and magnitude of the functions performed by the EAB with limited resources, somewhat outdated equipment and materials, and a staff with little training, the achievements of the EAB are quite impressive.

Difficulties Faced by the EAB

Some of the difficulties faced by the EAB are as follows:

-- Color print and large sized posters cannot be produced because of lack of necessary equipment. The EAB, therefore, prints only black and white posters in rather small sizes.

-- The Department of Research and several other sections are involved in putting together technical circulars. Lack of coordination among them results in the late delivery of circulars to the extension agents.



-- The circulation of a bimonthly magazine for farmers, "Za Achikumbi," is 32,000 while it is 3,000 for technical circulars. In spite of increased demand, circulation cannot be increased because of lack of funds.

-- The EAB does not have equipment and materials for processing and printing color slides and photographs. The exposed rolls, therefore, have to be sent to South Africa. In addition to high cost, it takes over two months before the finished product is received by the EAB. This is one reason why several ADDs have projectors but no slides.

-- There is no equipment for printing color photographs in extension publications. The publications, therefore, have only black and white photographs. This may be confusing for the extension agents and farmers because they cannot distinguish features of interest in the pictures.

-- Most of the equipment is quite old. Some of its does not work properly while other equipment does not have the latest features.

-- Only some of the staff members have received in-service training. The others need training overseas but there are no funds. A detailed request for training of certain staff members has been submitted to the MOA for consideration.

SITUATION IN THE FIELD

An observation of extension aids sections and discussions with the staff in several ADDs indicate that they are not effective. The Officers-in-Charge of these sections have received no in-service training. The sections, in the first place, do not have enough equipment, and even if they have, its use is very limited because of lack of materials (films and slides), absence of electricity in villages, lack of training in operation procedures, and



maintenance problems. The main functions, therefore, performed by these sections are the distribution of printed materials among extension agents and organizations of film and puppet shows through mobile cinema vans dispatched by the EAB. Some ADDs have their own mobile cinema vans.

Visits to the Day Agricultural Training Centers, Residential Agricultural Training Centers and Farm Institutes indicated the availability and use of very few extension support materials. The FAs and FHAs have received no training in the preparation and use of those extension materials which do not need sophisticated technology and could be prepared under farmers' conditions. Also, there are no supplies for this purpose.

Many technical circulars prepared by the EAB and distributed among the ADDs are quite outdated, some of them being as old as ten years. These circulars need revision.

CONCLUSIONS

Almost all extension support materials and programs are produced by the Extension Aids Branch which, in spite of limited resources, is doing a good job.

Some of the problems related to extension support materials in the field stem partly from the lack of necessary facilities at the EAB. The staff members have clear ideas about their training and equipment needs. Satisfaction of these needs can improve the performance of EAB.

The performance of extension aids units in the field is not satisfactory. Audiovisual Aids Officers lack appropriate training. The distribution of extension materials needs improvement. The use of audiovisual equipment in



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the field and at training institutions is limited by several factors, such as their unavailability, outdatedness, lack of electricity and lack of relevant training.

RECOMMENDATIONS

The Extension Aids Branch be strengthened by provision of needed equipment and staff training

No extension services can work effectively without extension support materials. Most of the EAB's requests for equipment and staff training are justified.* A more intensive and technically sound identification of required equipment and material is needed. The technical training needs of the staff can be met through short courses overseas. The provision of new equipment and materials must be accompanied by the training of staff in their operation and maintenance.

Complete Extension Support Materials Storage Units be created at selected Residential Agricultural Training Centers or Farm Institutes

The creation of complete Extension Support Materials Storage Units (ESMSU) would solve the problem of limited availability and use of extension support aids and materials in the field. The existing facilities at RATCs could be extended to accommodate ESMSUs. Only those RATCs which are located at convenient locations should be chosen.

The ESMSUs should serve as storage locations for extension support materials like technical circulars, slides on important topics such as plant insects and diseases, colored posters on relevant subjects, charts, cassettes

*Increasing the circulation of the farmers' magazine, however, does not seem practical at this stage. Only a small percentage of farmers can read. The magazine should perhaps be read by educated farmers to their colleagues in groups.



with taped messages of a technical nature, pictures, cameras, puppets, films and transparencies. Depending on the access to electricity or availability of generators, selected audiovisual equipment such as tape records, transistor radios, and slide, film and overhead projectors should also be provided. Some of these aids (tape recorders and radios) can be operated with dry-cell batteries. The ESMSUs should also have supplies for preparing charts and posters. Slide and print films should also be available.

There should be a safe place for storage of equipment and materials. All the extension support materials should be kept in an orderly fashion in separate shelves with distinct labels and lists of the available materials. In sum, the ESMSUs should be organized and operated like a resource center or a library.

The principal of the particular RATC or Farm Institute will be responsible for the operation of the ESMSU. The transport requests to distribute the equipment and materials should be coordinated by the principal in consultation with the Project Officer. The use of extension support materials should not be limited to the materials and equipment, and to use them on occasions like meetings with farmers at Farmers' Clubs, demonstrations, field days, field visits, village ceremonies, and festivals. The instructional staff at DATCs, RATCs and Farm Institutes should be informed and encouraged to borrow them for their training programs. Depending on the needs and nature of the materials, the Farmers' Clubs could also use them with the guidance of extension agents. For example, the extension agents could leave a taped extension message and tape recorder at the Farmers' Clubs after instructing a leader how to operate it. These could be accompanied by relevant charts and pictures for better comprehension. The farmers could use those materials at their leisure and discuss the issue for several days while the extension agent covers some other areas. Later, on a mutually agreed date, time and place, the extension agent and farmers can get

Some of the operations of the ESMSUs could be dovetailed with the schedules of mobile cinema units. The Audiovisual Aids Officer and Training Officer based at ADD headquarters should coordinate these activities.

The EAB will be the primary source of materials for the ESMSUs but ADDs and the Project extension aids branch should also produce materials. The specialists at research stations could help in preparing slides on plant diseases, insects, soil problems, recommended agricultural practices, etc.

All the staff members associated with ESMSU will need necessary orientation courses in the objectives and operations of the ESMSU and in the use of equipment and materials.

The ESMSUs could be established through a sub-project funded by a donor agency. Some outside technical assistance will be required for putting this concept into operation.

Old extension technical circulars be revised and updated

Policies, operations and organization of the extension service, as well as field conditions, have changed considerably in the last decade, but several of the technical circulars used by extension agents remain the same. All old circulars should be revised and updated by the EAB with the assistance of relevant specialists.

Extension agents be assisted by their supervisors in interpreting the technical language of research bulletins

Some of the technical circulars used by extension agents are quite simple in language and description, while others are not. In cases of difficulty, the DOs or other specialists should assist the extension agents in understanding the circulars. It should be a regular practice by the DOs



to discuss all new circulars with the FAs and FHAs before they are sent to the farmers. With rather limited educational backgrounds of the extension agents, nothing should be taken for granted.

Major part of extension aids induction course organized by the EAB be conducted under field conditions

At present, the induction course in extension aids organized by the EAB for all the new Audiovisual Aids Officers in ADDs is held at the EAB headquarters in Lilongwe. The main reason for choosing this location is that all the equipment and materials are available at the headquarters, but not at the ADDs.

A better and more realistic way would be to organize only a part of that course at the headquarters so that the participants could become familiar with the organizational structure and facilities. Later, a major part of the course should be conducted under field conditions. This will help in focusing on realities of the situation, equipment, physical facilities, etc., with which Audiovisual Aids Officers work in their respective ADDs.

At a later stage when Extension Aids Sections in the ADDs are fully operational, the mobile cinema vans should be transferred from the EAB to the ADDs.

At present, the vans are dispatched from EAB in Lilongwe for work at the requesting ADD. Some ADDs are many miles from Lilongwe. The cost of fuel is high. In addition, there is always the risk of vehicle breakdown on the way, which causes serious disruption in the schedule. At present, the EAS at ADDs are not strong. When they are fully operational, the vans should be transferred from the EAB in Lilongwe to the ADDs. However, the EAB should continue to supply materials for use in the vans, in addition to materials generated by the EAS at the ADDs.



SELECTION AND SUPERVISION OF EXTENSION AGENTS

SELECTION

At present, the selection and recruitment of extension agents is done in a routine manner. There are required minimum academic qualifications for all positions. For most of the senior positions based at the Ministry of Agriculture (CADO and PAETO, for example) and ADD and Project Headquarters (PM, PO, SMSs, TRO, EO, etc.) the required academic qualification is a Bachelor Degree in Agriculture. For the position of DO, the basic qualification is a three year Diploma from Bunda College. The academic qualification for FAs is a two year Certificate from Colby College while the qualification for FHAs is a one year Certificate from Thuchila Farm Institute.

The senior officers, such as PAETO, go to Bunda College which encourages its graduates to apply for extension service positions by making speeches. Advertisements also appear in the newspapers.

Most of the staff members interviewed said that they did not see their job descriptions until they were recruited and took charge of their positions.

The graduates of Bunda College often have a choice of employment. They can either join departments within the MOA or they can get a job in the private sector, mainly with companies dealing in export crops. Until recently, the competition for agriculture graduates was quite strong. Many young graduates were attracted to the private companies because of better salaries and benefits than those in the government service. Now the private sector is unable to absorb as many agriculture graduates. Actually some employees have lost their jobs because of financial trouble in the private sector.



This situation has eased the competition in the job market and the extension service does not have as many problems in locating suitable candidates.

Unlike Bunda graduates, the graduates of Colby College and Thuchila Institute do not have several choices. As a matter of fact, the campaign for their recruitment starts much earlier, when they are still in the school. They must decide at this stage whether they would like to be FAs and FHAs. Only after making a favorable decision do they go to the relevant pre-service training institutions. On graduation, they are employed by the extension service.

The agricultural extension service in Malawi is still expanding. There are more vacancies than can be filled with qualified candidates; and, for the time being, there is no problem of saturation in this particular sector.

SUPERVISION

In the extension service, a key position with supervision responsibility is that of DO. The DOs are responsible for supervising FAs and FHAs who are the largest number in extension. Other staff members at other levels are supervised by their superior officers according to the chain of command.

The supervision practices mainly include pre-scheduled or surprise visits to the posts of junior staff and talks with farmers. Each officer in the supervisory position prepares an annual confidential report on the performance of the subordinates. In certain cases, special confidential reports are also prepared. There are specific forms for preparing these reports. The reports are later used in assessing the staff member's suitability for routine salary increment or promotion.

Hardly any staff member in a supervisory position has received in-service training in supervision. The little training received is during pre-service



study at the academic institutions. During interviews with staff members, it was pointed out that quite often new DOs have problems in supervising FAs and FHAs. The reason is that DOs are young and relatively inexperienced while the FAs whom they are to supervise often are senior in age, service, and experience.

CONCLUSIONS

The selection and recruitment procedure for the extension staff largely is based on the minimum academic qualifications required for different positions. There is less competition for agriculture graduates at present in the job market. The expanding agricultural extension service can absorb almost all qualified candidates. Some vacancies exist today.

A key position with major supervision responsibilities is that of Development Officer. The DO is required to supervise FAs and FHAs in his area. Other senior officers have supervisory responsibilities according to their positions in the chain of command.

Normal practice of supervision is pre-scheduled or surprise visits by supervising officers to the posts of their staff and discussions with the farmers. All officers in supervisory capacities prepare annual confidential reports on the performance of their subordinates.

Almost no staff in supervisory positions has received any in-service training in supervision techniques. They, therefore, can depend on little theoretical training they received prior to joining the service.

RECOMMENDATIONS

Training of staff with supervision responsibilities is the main training need in the area of supervision. This is especially true for DOs. This in-service training need and relevant recommendation has been described in the section on in-service training of extension staff.



IV. APPENDICES

APPENDIX A

PARTIAL LIST OF INDIVIDUALS INTERVIEWED*

- Mr. J. G. Adam, Senior Animal Husbandry Officer, LADD, Malawi
- Mr. Kilmet Adams, Visiting Faculty (USAID), Bunda Agricultural College, Malawi
- Mrs. Vivian L. C. Anderson, USAID Representative, Malawi
- Mr. W. J. N. Banda, Audiovisual Aids Office, LADD, Malawi
- Dr. Ray Billingsley, Chairman, Rural Development Department, Bunda Agricultural College, Malawi
- Mr. D. Bisika, Agricultural Development Officer, Mzuzu ADD, Malawi
- Miss E. Breituni, District Commission Office, Blantyre ADD, Malawi
- Mr. Donald Brown, Agricultural Economist, USAID, Washington
- Mr. L. Bulambo, Officer-in-Charge, Mpatsanjoka Livestock Extension Center, Salima ADD, Malawi
- Mr. M. D. Chagunda, Development Officer, Salima Project Headquarters, E.P.A., Salima ADD, Malawi
- Mr. H. H. S. Chanza, Senior Agricultural Officer, Blantyre ADD, Malawi
- Mr. K. M. Chavula, Senior Agricultural Economics Officer, Ngabu ADD, Malawi
- Mr. B. P. Chikabadwa, Crops Officer, Salima Project Headquarters, Malawi
- Mr. Chiluzi, Chairman of Farmers' Club, Salima ADD, Malawi
- Mr. E. F. Chinganda, Commissioner, National Statistics Office, Zomba, Malawi
- Mr. E. P. Chingansa, Technical Officer, Mzuzu ADD, Malawi
- Mr. Chiona, Community Development Assistant, Chinguluwe Day Training Center, Salima ADD, Malawi
- Mr. Sigman Y. L. Chirambo, Acting Principal, Colby Agricultural College, Malawi

*We apologize in advance for incorrect spelling of names, titles, and locations. Also, many other individuals participated in small and large groups at various locations. It was not possible to obtain and list all of their names. However, their contributions are hereby recognized and appreciated.

Mr. L. S. Chirwa, Training Officer, Blantyre ADD, Malawi

Mr. A. B. Chiuadza, Development Officer, Chinguluwe Day Training Center,
Salima ADD, Malawi

Mr. J. Chongugwe, Principal, Mzuzu ADD, Malawi

Mr. Edgar Chongwe, Training Officer, Lilongwe ADD, Malawi

Mr. John Doughty, Senior Economist, Evaluation, MOA, Malawi

Mr. S. Enos, Milk Collector, Lilongwe ADD, Malawi

Mr. Garuwapananji, Agricultural Extension Officer, Ngabu ADD, Malawi

Mr. Gelem, Village Headman, Salima ADD/EPA, Malawi

Mr. Golf Groge, AID Training Officer, USAID, Rosslyn

Dr. Art Hanson, Farming Systems Analyst, USAID/UF, Chitedze Agricultural
Research Station, Malawi

Mr. Alfred Harding, Project Officer, Malawi, USAID, Washington

Mr. Terry Hart, USAID, Washington

Mr. E. Heinemann, Assistant Evaluation Officer, Blantyre ADD, Malawi

Mr. J. Heleballi, Milk Collector, Lilongwe ADD, Malawi

Dr. William Judy, Agricultural Development Officer, USAID, Washington

Mr. Kaambanicandzanga, Farm Manager and Lecturer, Chitala Farm Institute,
Salima ADD, Malawi

Mr. E. Kabuye, Program Manager, Mzuzu ADD, Malawi

Mr. D. Kaihali, Development Officer, Mzuzu ADD, Malawi

Dr. J. S. Kaminjolo, Reader and Dean, Bunda Agricultural College, Malawi

Mr. F. M. Kangande, Program Manager, Lilongwe ADD, Malawi

Mr. C. M. Kangenda, Animal Husbandry Officer, Mzuzu ADD, Malawi

Mr. L. L. Kapalamuza, Farmer, Salima ADD/EPA, Malawi

Miss H. L. Kayila, Assistant Women's Program Manager, Salima Project
Headquarters, Salima ADD/EPA, Malawi

Dr. Terry Legg, Chief Agricultural Research Officer, MOA, Malawi

Mr. F. Lwara, Principal, Thuchila Farm Institute, Blantyre ADD, Malawi

Mr. R. Makamera, Beef Field Officer, Blantyre ADD, Malawi

Mrs. Malunga, Farm Home Assistant, Chitala Farm Institute, Salima ADD,
Malawi

Mr. K. D. Masangano, Assistant Program Manager, Blantyre ADD, Malawi

Mr. M. Masoamera, Professional Officer, Mzuzu ADD, Malawi

Mr. L. Masoo, Lecturer, Chitala Farm Institute, Salima ADD, Malawi

Mr. J. C. Mbaluld, Development Officer, Thuchila, Blantyre ADD, Malawi

Mr. R. M. Mbowera, Assistant Program Manager, Lilongwe ADD, Malawi

Mr. G. M. C. Mbubzi, Visual Aids Assistant, Salima Project Headquarters,
Salima ADD/EPA, Malawi

Dr. D. E. McCloud, Chief of Party, USAID/UF, Chitedze Agricultural Research
Station, Malawi

Mr. Goodwin Mchenga, Farmer, Chinguluwe, Salima ADD/EPA, Malawi

Mr. L. P. Mchonjera, Animal Husbandry Officer, Blantyre ADD, Malawi

Mr. J. A. Mhango, Principal Agricultural Extension and Training Officer,
MOA, Malawi

Mr. C. N. S. Mkandawire, Veterinary Assistant, Lilongwe ADD, Malawi

Mr. B. Mkomba, Extension Officer, Mzuzu ADD, Malawi

Mr. Msapinga, Blind Farmer in Handicapped Program, Chinguluwe, Salima ADD/EPA,
Malawi

Mr. Msimuko, Training Officer, Salima ADD, Malawi

Miss D. J. Msuku, Farm Home Assistant, Chingulune Day Training Center,
Salima ADD, Malawi

Mr. B. G. Mtakiali, Lecturer, Chitala Farm Institute, Salima ADD, Malawi

Mr. James Mudge, Senior Economist, USAID, Washington

Mr. W. W. C. Mughogho, Officer-in-Charge, Chitala Agricultural Research
Station, Salima ADD, Malawi

Mr. M. Muwila, Chief Agricultural Development Officer, MOA, Malawi

Mr. S. J. Muyaya, Senior Extension Aids Officer, Extension Aids Branch,
MOA, Malawi

Mr. Mwafulirwa, Agricultural Development Officer, Chinguluwe Day Training
Center, Salima ADD/EPA, Malawi

Mr. F. R. Mwambaghi, Evaluation Officer, Salima ADD, Malawi

Mr. Joel Mwenechanya, Program Manager, Salima ADD, Malawi

Mr. S. C. M. Mwenthebula, Animal Husbandry Officer, Salima ADD, Malawi

Mr. R. N. Mzandu, Project Officer, Lilongwe ADD, Malawi

Mr. L. Z. Ngwendu, Field Assistant, Lilongwe ADD, Malawi

Dr. T. N. Ngwira, Senior Lecturer, Biochemistry, and Vice Principal, Bunda
Agricultural College, Malawi

Mr. N. E. Nichwazi, Project Officer, Salima Project Headquarters, Salima
ADD, Malawi

Mr. J. H. Nowa, Principal Statistician, National Statistics Office, Zomba,
Malawi

Mr. T. Ntolua, Development Officer, Mzuzu ADD, Malawi

Mr. Numen, Farmer, Tembwe Village, Salima ADD, Malawi

Mr. J. Nyasulo, Senior Agricultural Extension Officer, Mzuzu ADD, Malawi

Mr. K. Nyirenda, Farm Home Assistant, Ngabu ADD, Malawi

Dr. Dennis Pervis, Economist, USAID/UF, Chitedze Agricultural Research
Station, Malawi

Mr. Phanlaphanla, Development Officer, Mzuzu ADD, Malawi

Mr. B. H. Phiri, Senior Agricultural Extension Officer, Salima Project
Headquarters, Malawi

Mr. Brandon Robinson, REDSO/EA, Nairobi

Miss Schott, Peace Corps Volunteer, Audiovisual Aids Assistant, Lilongwe
ADD, Malawi

Mr. S. E. C. Shumba, Program Manager, Blantyre ADD, Malawi

Miss T. Simkoza, Principal, Chitala Farm Institute, Salima ADD, Malawi

Miss T. Simkoza, Principal, Chitala Farm Institute, Salima ADD, Malawi

Dr. Anita Spring, Anthropologist, USAID/UF, Chitedze Agricultural
Research Station, Malawi

Mr. A. A. B. Standen, Assistant Chief Agricultural Development Officer
(Technical-Extension and Training), MOA, Malawi

Miss Annette Sulaimana, Evaluation Officer, Blantyre ADD, Malawi

Dr. Trogones, Visiting Faculty (UNDP) Bunda Agricultural College, Malawi

Mr. George E. G. Vakusi, Senior Agricultural Officer, Extension, Lilongwe ADD,
Malawi

Mr. A. Watkins, Extension Officer, Mzuzu ADD, Malawi

Mr. Boyd Whittle, USAID, Washington

Mr. Wiscoti, Farmer, Salima ADD/EPA, Malawi

Mr. Robert Wrin, Desk Officer, Malawi, USAID, Washington

Mr. N. T. Yabwald, Project Officer, Salima ADD, Malawi

APPENDIX B

DOCUMENTS REVIEWED BY THE ASSESSMENT TEAM

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APPENDIX C

TRAVEL, INTERVIEW, AND OBSERVATION PLAN
Assessment of Rural Extension and Training in Malawi

DATE	DAY	ADD TO/AT	METHOD OF TRANSPORTATION	WHO	LODGING
APRIL 13-16	(Tue, Wed, Thur, Friday)	Lilongwe (13, 14 Colby College 15 Bunda College 16	ADD Rented Land Rover	All 3 Team Members	Capital Hotel
APRIL 17-18	(Sat/Sun)	Lilongwe - organize notes, plan, review documents, write			
APRIL 19-21	Monday/ Tuesday/ Wednesday	Mzuzu Mzuzu Lilongwe Mzuzu	Air - Leave 11:30 a.m. Meet MOA at Air Port Rented Land Rover Air - Leave 5:20 p.m.	2 - Joe Spatrisano and Kalim Qamar Curtis at MOA/Lilongwe for National Data	New Hotel Capital Hotel
APRIL 22-24	Thursday/ Friday/ Saturday	Salima Salima Salima/Lilongwe	Leave early (6:30 a.m.) Rented Land Rover Return to Lilongwe	All 3 Team Members	Grand Beach Hotel
April 25-29	Sunday Monday/ Tuesday/ Wednesday/ Thursday	Lilongwe - organize notes, plan, review documents, write Blantyre - Hat Stat - Zomba Blantyre ADD Blantyre ADD (If events permit will visit Nyabu) Blantyre ADD - Thuchila	Air - Leave 8:30 a.m. Meet MOA at Air Port Rented Land Rover Air - Leave 4:55 p.m.	All 3 Team Members	Mount Soche Hotel
May 1-12	(Typing)	Prepare First Draft Assessment	Rural Extension and Training	(Ministry of Agriculture needs five copies)	
May 12-14		Review by MOA - Conference with	Mr Muvila	afternoon of May 14	
May 15-17		Revisions			
May 18		Depart for Washington			