

Malawi Agricultural Research Project

Center for Tropical Agriculture
International Programs
Institute of Food and Agricultural Sciences
University of Florida

The Department of Agricultural Research
Ministry of Agriculture, Malawi

The U.S. Agency for International
Development

PD-AAR-674

LAN 41081

QUARTERLY REPORT

January, February and March

1983

Project No. AFR 06 612-0202

Contract No. AID/afr-C-1653 (Malawi)

MP - 11

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I. INTRODUCTION

This is the eleventh quarterly report and covers the fourth quarter of the Malawi fiscal year, January - March 1983, and serves as an annual report for the fiscal year.

II. HIGHLIGHTS

All of the long-term Technical Assistance positions are now filled with the addition of Dr. Janicki (Agronomist) in January, 1983 and Dr. Arnold (Horticulturist) in March 1983.

Twenty four of the 33 participant training slots called for in the Project Paper (PP) have been filled with the departure of six trainees in December of 1982.

The Project received an External Evaluation during the fourth quarter which will prove useful in determining the focus of efforts for the remainder of the project.

In-service training was provided throughout the year by: sponsoring individuals to visit neighboring countries and IARCs; use of short-term technical assistance to teach specific courses; and on-the-job training conducted by Technical Assistance Team Members.

Vehicle purchases called for in the PP were completed during the year.

Additional research staff position funded by the Project were filled in the Agricultural Economics, Farming Systems, Groundnuts, Livestock/Pasture, Maize and Wheat Sections.

Construction called for in the PP is progressing or is completed with the exceptions of houses at Tsanganano, greenhouses at Zvumbwe and Chitedze and cold rooms at Chitedze.

The majority of the money devoted to commodities in the PP was committed during the year.

Data analysis capability was established at Chitedze during the year by introduction of three APPLE II computers and the purchase and development of appropriate software.

The UF/USAID Technical Assistance Team participated in the development of a Master Plan for the reorganization of the Department of Agricultural Research, GOM. Drs. York and Waugh (UF) provided assistance to the team developing the plan.

New research efforts were initiated by the Livestock/Pasture Section at Chitedze and Lunyangwa Agricultural Research Stations.

Three surveys in differing agro-climatic zones were completed by

the Farming Systems Section.

Project inputs to date are summarized in figure 1 below:

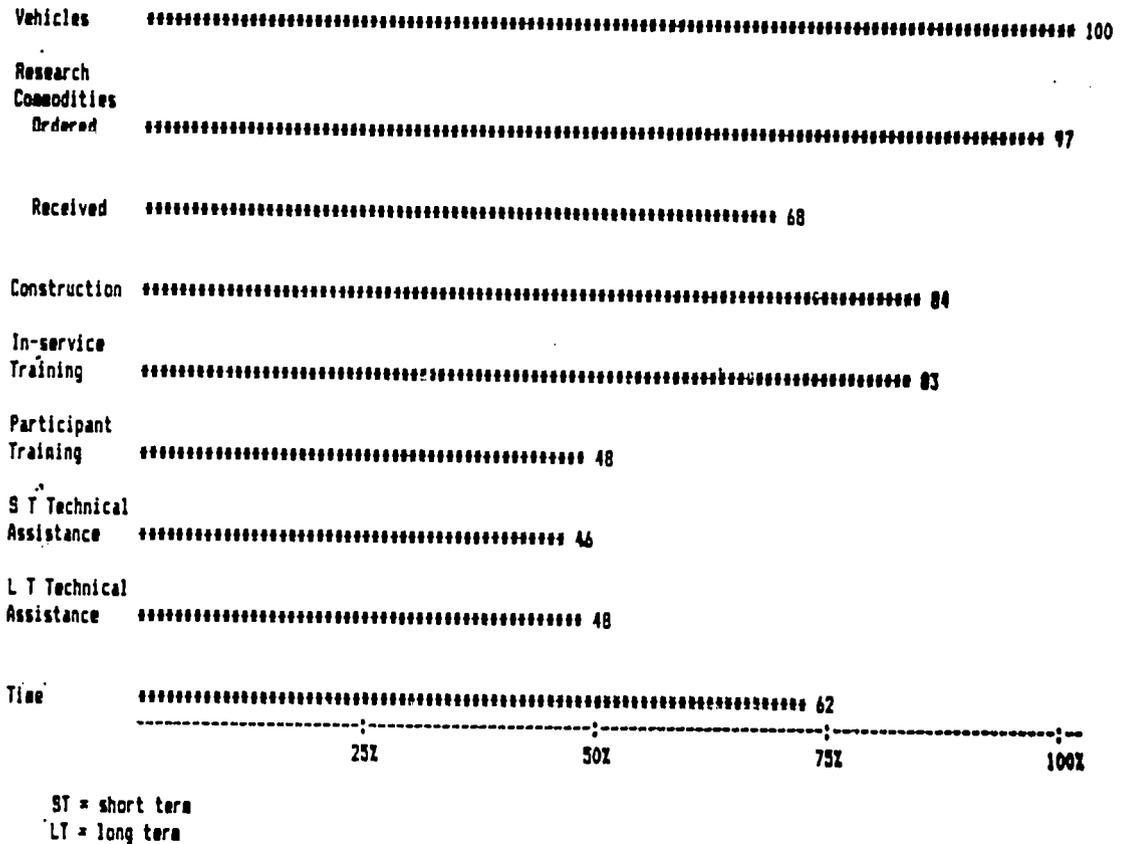


Figure 1. Malawi Agricultural Research Project, Summary of Inputs to December 31, 1982.

III. TRAINING

Participant Training

Participant training is one of the more important aspects of the project and will directly impact the quality of future research in Malawi. Six additional participants were admitted to graduate school in the U.S. bringing the total to 23 now in training. The participants are listed in Table 1 below.

Table 1

PARTICIPANT TRAINING QUARTERLY REPORT
January 1 to March 31, 1983

Name	Training	Degree Program	Station	Departure	Months Accumulated	Due Back	Funded To
Chapola G.M.	Plant Pathology	Ph.D.	Bvumbwe	Dec 80	27	Apr 84	Jun 84
Chigwe C.F.B.	Sorghum Breeding	Ph.D.	Makoka	Dec 81	15	Dec 84	Jun 85
Chikwana R.	Agricultural Economics	M.S.	Chitedze	Dec 80	27	Dec 82	Jun 83
Chilembwe E.H.	Fruit Crops	M.S.	Bvumbwe	Dec 80	27	Jun 83	Jun 83
Chipala E.E.	Soybean Breeding	Ph.D.	Chitedze	Dec 80	27	Dec 83	Jun 84
Chirebo, A.B.M.	Statistics	M.S.	Makoka	Dec 82	3	Dec 84	Dec 84
Dzowela B.H.	Pasture Agronomy	Ph.D.	Chitedze	Dec 80	27	Jun 84	Jun 84
Badabu, A.D.	Entomology	Ph.D.	Bvumbwe	Dec 82	3	Dec 84	Dec 84
Bondwe W.T.	Vegetable Crops	M.S.	Bvumbwe	Dec 81	15	Dec 83	Jun 84
Khonje D.J.	Soil Microbiology	Ph.D.	Chitedze	Dec 81	15	Dec 84	Jun 85
Kisyoabe, C.T.	Plant Pathology	M.S.	Chitedze	Dec 82	3	Dec 84	Dec 84
Kisyoabe F.	Statistics	M.S.	Makoka	Dec 80	17	Jun 82	*
Mkandanga G.Y.	Crop Physiology	Ph.D.	Chitedze	Dec 80	27	Jun 84	Jun 84
Mtambo P.J.	Seed Technology	M.S.	Chitedze	Dec 81	15	Dec 83	Jun 85
Munthali, F.	Wheat Agronomy	M.S.	Chitedze	Dec 82	3	Dec 84	Jun 85
Munthali J.T.K.	Animal Nutrition	Ph.D.	Chitedze	Dec 80	27	Dec 83	Jun 84
Mwango, E.N.	Anthropology	M.A.	Chitedze	Dec 82	3	Dec 84	Dec 84
Mzebe C.P.	Irrigation Agronomy	M.S.	Kasinthula	Dec 80	27	Jun 83	Jun 84
Ngwira L.D.H.	Maize Agronomy	M.S.	Chitedze	Dec 81	15	May 84	Jun 84
Mthakoma, B.	Agric. Economics	M.S.	Chitedze	Dec 82	3	Dec 84	Dec 84
Mtokothe E.M.	Soil Survey	Ph.D.	Lilongwe	Dec 80	27	Jun 84	Jun 84
Saka A.L.	Soil Physics	Ph.D.	Chitedze	Dec 80	27	Dec 83	Jun 84
Sibale P.K.	Groundnut Breeding	Ph.D.	Chitedze	Dec 82	27	Jun 84	Jun 84
Zambezi B.T.	Maize Breeding	M.S.	Chitedze	Jun 81	22	Dec 83	Dec 84
Total					429		

* Terminated without Degree in May 1982

Three participants returned to Malawi to conduct their thesis/desertation research. These were Ms. Chikwana; Mr. Ntokothe; and Mr. Saka.

Nine participants remain to be identified for training to the Masters Level. It is anticipated that these individuals will begin training in August, 1983 and complete their training NLT December

1985. This means that 17 participants will be in training after the scheduled project completion date.

The first participant trainee in the Farming Systems Section left in December 1982 to begin the M.A. program at Florida in applied anthropology with concentrations in agricultural economics and agronomy.

B. In-service Training

1. Agricultural Economics

The Assistant Agricultural Economist, Miss Nthakomwa, was supervised in the preparation of two papers. One compared the economic viability of two alternative technologies. She used a similar study completed earlier jointly with the Section Head as an example to follow. The other paper prepared by Miss Nthakomwa was on the role of agricultural economics in agricultural research, and was presented by her at the International Conference on Development in Malawi in the 1980's.

Requests were submitted to DAR for travel to two International Agricultural Research Centers (IARC's) for Miss Nthakomwa, but they were not approved.

Staff were introduced to three major software packages for the Apple II computer: A-STAT, DB-Master, and SUPERTEXT.

Two new Professional Officers joined the Agricultural Economics section as Assistant Agricultural Economists, and were introduced to the use of the Apple II computers.

In order to increase the general use of quantitative analysis at Chitedze, a tutorial (blackboard presentation followed by hands-on computer experience) of the A-STAT computer program, was given primarily for the Farming Systems Staff.

Supervised staff in the development, organization and use of the Agricultural Economics Data Bank.

2. Crop Physiology

An in-service training trip was made to South Africa by Mr. A.J. Chiyembekeza, Mr. C.E. Maliro and Mrs. P. Ngwira accompanied by Professor D.E. McCloud on February 28 to March 4, 1983. The purpose of this trip was to study South African grain legume research, production and processing techniques. Visits were made to: the SA Oil Company, Vaalharts Research Institute Grain Crops at Potchefstroom. Drs. J.W. Snyman and Jan Dreyer were in charge of arrangements for our visit. The group was provided a most hospitable and significant in-service training experience. The entire Malawian group asked many questions and entered into discussions most accomplished manner. Mr. Chiyembekeza, as senior officer for the Malawian's, was very effective in expressing thanks on behalf of the group.

3. Farming Systems

During the other three quarters of the year staff received in-service training in survey design and administration, coding and computer processing of survey data, data analysis and report writing. Training occurred formally and informally. A formal course about the design and analysis of on-farm trials was conducted in October 1982 to 35 research staff. Details are in earlier quarterly reports.

4. Livestock/Pastures

During the year, several staff members were added to the Livestock Section. Mr. M.S. Kumwenda was assigned to the Dairy Production professional officer position and Mr. A.C. Zimba was assigned to the Reproductive Physiology position. Mr. J.W. Jiyani was assigned to a new technical officer position. Both professional officers were given assistance in planning their work plans. Mr. Jiyani was started on a training program in the livestock and pasture sections so that he will become familiar with all phases of the livestock/pasture program.

5. Plant Breeding

Dr. Dale Hicks, University of Minnesota, provided needed training in the areas of data analysis and interpretation. It is expected that most professional officers in all fields now understand the importance of and have the capability to analyze and interpret their own data.

Mr. W.G. Nhlane, Maize Breeder, Department of Agricultural Research, GOM was funded by the project to visit IITA. IITA has developed a simple and efficient method of screening segregating maize populations for resistance to maize streak virus (MSV). MSV is a problem in late-planted maize in Malawi but breeding for resistance is not possible without an efficient screening technique. Mr. Nhlane can now use IITA procedures to screen varieties in Malawi.

IV. RESEARCH

A. Agricultural Economics

On this project, Agricultural Economics views research itself as a secondary objective: the primary objective being to develop a capacity to conduct economic research in the Department of Agricultural Research. Research is conducted as a tool for demonstrating how it is done. While topical problems are chosen where possible, this consideration is secondary to the learning aspects of conducting the research. Activities which contributed to the establishment of a program of research were as follows:

1. Supervision of the Groundnut Pathologist in an economic evaluation of data on several fungicides. The results were discussed with a representative of Shell Chemicals.
2. Developed a program for the HP-85 computer which will calculate the area of farmer's irregularly shaped fields, based on range and bearing data. the program was documented in a writeup called DAR-AREA.
3. In order to emphasize the importance of price policy on the smallholder and the effect on food supplies, a paper was prepared and presented at the International Conference on Development in Malawi in the 1980's held at Chancellor College 12-14 July, 1982. The title of the paper was "A Review of the Effects of Food Price Policies".
4. The development of the Agricultural Economics Data Bank provides the ability to store, retrieve, manipulate and analyze large amounts of data. This ability is essential for the work of Agricultural Economists.
5. Obtained a large volume of maize fertilizer response data for 5 years and 7 ADD's. This data has been entered into the Agricultural Economics Data Bank and is being analyzed with the assistance of the Assistant Agricultural Economists in an effort to improve the fertilizer recommendations throughout the country.
6. Estimates were prepared on the cost of irrigating 20 hectares of land at Chitedze for research into irrigation techniques appropriate to Malawi.
7. Analysis began on the maize - fertilizer trial data in the Data Bank. The A-STAT program was used to generate production functions (Quadratic equations). Two programs for the HP41CV programmable calculator were written to facilitate the economic analysis of the regression equations produced by A-STAT. These calculator programs are:
 - a) POLYN - a program which calculates the:
 - optimal nitrogen application rate
 - optimal fertilizer application rate
 - optimal expected maize yield
 - marginal physical product (MPP)
 - marginal value product (MVP)

- revenue minus fertilizer cost and
- fertilizer/maize price ratio.

- b) POLINT - This program calculates supplementary data to facilitate the hand plotting of the functions on the scatter plot produced by the computer. Specifically, it calculates:
- roots of the function (the absolute value of the negative root is an estimate of the initial nitrogen availability in the soil).
 - the yield expected with specified nitrogen applications.
 - the (x,y) coordinates in nitrogen - yield space in centimeters (thus facilitating preparation of the graph).
8. An Ad Hoc study was completed for the Planning Division of the Ministry of Agriculture. The study involved an estimation of the effects on smallholders of reducing fertilizer subsidies. This was an example of how microeconomic studies of smallholder responses are often necessary for agricultural policy formulation.

B. Crop Physiology

Gave invitational seminar to university of Florida Agronomy Department on Crop Yield Dynamics, 50 persons were in attendance.

The Kylar experiment was run again in Malawi this year after an unsuccessful run last year. Planting was made December 10, 1982, emergence was December 16th and flowering began January 25, 1983. Kylar was applied on January 31st and February 4th, and the first harvest was on February 18th. During the quarter 11 harvests were made. Table 1 gives the pod numbers for five harvests during the period of February 7th to March 25th.

Table 1 Pod Numbers in the Kylar Experiment February 7 to March 25, 1983

Treatment	-- Harvested on --				
	Feb 25	Mar 4	Mar 11	Mar 18	Mar 25
Mani Pintar check	6.3	9.9	11.6	11.6	17.0
Mani Pintar Kylar	6.7	14.3	15.5	14.7	15.2
Chalimbana check	1.4	1.6	2.0	2.6	5.5
Chalimbana Kylar	2.2	6.2	7.7	5.8	9.9

C. Farming Systems

During the quarter the section concentrated on designing and

conducting surveys and on analyzing primary and secondary survey data. In preparation for an informal farming systems survey in Ntcheu Project our staff met with LADD staff to analyze available secondary data from the ADD, DAR and the NSSA (National Sample Survey of Agriculture). This also marked the beginning of an intensive effort to utilize the NSSA as background and verification for future farming systems surveys. The diagnostic survey of EPA 6 of Ntcheu was conducted during March. Processing of the 1982 Lilongwe Project survey data continued with different staff being responsible for coding and processing different survey questionnaires. Ten questionnaires have been coded and seven code books prepared.

During the first three quarters of the year the section harvested on-farm trials in Phalombe and Lilongwe, analyzed trial data and set up and conducted a series of smallholder surveys in the Lilongwe Project. These activities are documented in earlier quarterly reports.

D. Livestock/Pastures

During the year, research activities in the Livestock/Pastures Sections continued to focus on the project objective of strengthening research programs in selected areas.

1. Pasture Grazing Trial. Both Dr. Hodges and Dr. Gray spent a considerable amount of time on establishing a pasture grazing trial at Chitedze ARS. The purpose of the trial is to "Measure the production of three grasses and one legume-grass combination in terms of beef production." Treatments are: (1) Boma rhodesgrass, (2) Boma rhodesgrass interplanted with Silverleaf desmodium, (3) Ntchisi panicum (*Panicum maximum*), and (4) No. 2 Henderson stargrass (*Cynodon nlemfuensis*). Each plot is 1.5 hectares and the trial has three replications. 200 head of two-year old Malawi Zebu heifers weighing an average of 170 kilograms were used for the trial. Eight "tester" animals were randomly assigned to each plot and "grazer" animals were added and removed as necessary to consume the forage.

The purpose of this trial is to fulfill a major objective of the project "the determination of pasture productivity in terms of animal performance." This is a three year trial, so complete results will not be available until 1985.

2. Dairy Cattle Research. Work was started during the year in several areas of dairy production. Studies initiated included:
 - a. "Calcium and Phosphorus Supplementation for Dairy Cattle" which is being conducted at Lunyangwa ARS.
 - b. "A Comparison of the Utilization of Four Concentrates for Lactating Cows" being conducted at Chitedze ARS.
 - c. "A Comparison of Zero Grazing and Grazing Management Systems for small-holder Dairying" which is a study to evaluate the current recommendations of the Department of Development for smallholder dairy farms. This study is

being setup on the former Unit Farms at Chitedze ARS.

- d. "Dairy Breed Evaluation Program" which is evaluating the effect of introducing Sahiwal blood into crossbred Friesian x Malawi Zebu dairy animals. This study is using the herds at Chitedze and Lunyangwa ARS.
3. Sheep Research. One lamb feeding trial titled "The Utilization of Leucaena, Crop Residues and Madeya for Stall Feeding Lambs" was conducted during the year and will be repeated in 1983-84.
 4. Beef Cattle Research. One stall feeding trial to evaluate the utilization of groundnut tops was conducted during the year and will be repeated in the 1983-84 year. Data will then be incorporated into a draft of an extension bulletin and published.

Work also continued on the "Comparative Beef Cattle Breed Fertility Trial" at Chitala ARS and Dzalanyama Ranch.

5. Poultry Research. Facilities were renovated on the former Unit Farms so that a study titled "An Evaluation of Two Poultry Breeds and Two Rations Under Deep Litter System" could be conducted during the 1983-84 year. The objective of the study is to evaluate the performance of Hyline and Black Australope breeds on local and commercial type rations.

E. Plant Breeding/Agronomy

The primary emphasis during the fiscal year was to determine priorities and develop a program, with defineable goals, to achieve the priorities. In that regard, the major priority in maize is to develop/identify improved varieties for the marginal areas. CIMMYT open-pollinated varieties, experimental hybrids, breeding populations, and hybrids from private seed companies have been screened and/or selected in the lakeshore region. An adverse drought precluded screening/selection in the Lower Shire Valley.

One of the major priorities in Maize Agronomy is to determine a nitrogen (N) production function for maize - improved and unimproved types - in the major ecological zones. This is a combined effort with Agricultural Economics and is intended to answer question from the World Bank about N recommendations for maize in Malawi. Also, an attempt was made to determine the practicability of interplanting forage legume with maize for use as a green manure. Unfortunately, a drought period caused the legumes to sprout and then die. There was not sufficient seed for replanting.

The Wheat Program is receiving increasing attention because of the need for Malawi to become self-sufficient in wheat production. The priority areas are to identify wheat cultivars for the major wheat growing areas and to adopt/modify production practices from neighboring countries. Zimbabwe and Kenya were visited for the

purpose of establishing working relation with scientists in these countries to facilitate the exchange of germplasm and research results.

i The visits by the Plant Breeder to CIMMYT and IITA have proven very beneficial in that both IARC's now understand the requirements of Malawi and are sending germplasm that Malawi wants to evaluate rather than vice versa. Further, CIMMYT has provided needed commodities to the Maize Breeding Program in terms of field scales, moisture meters and pollinating bags. Excellent working relations have been established with the CIMMYT East Africa Representative which should have a positive impact on the Maize Program in Malawi.

V. TRAVEL AND MEETINGS

The USAID purchased vehicles continued to receive heavy use during the quarter by technical assistance team members and Malawian staff. Table 2 gives a summary of the vehicle use for the quarter and for the project to date.

Table 2
USAID Project Vehicle Miles Driven to March 31, 1983

Vehicle	Location	Jan.-Feb.-Mar.	Milage to March 31, 1983
Peugot			
542D	Chitedze	5,353	38,164
715D	Bvumbwe	2,391	39,202
716D	Chitedze	4,913	36,242
754D	Chitedze	5,084	34,492
Land Rover			
653D	Kasinthula	7,481	60,079
689D	Lunyangwa	4,523	47,135
690D	Chitedze	7,010	57,096
691D	Makhanga	1,470	54,392
692D	Chitedze	9,079	113,264
694D	Bvumbwe	3,010	40,028
690E	Mbawa	8,719	19,188
Nissan			
474E	Makoka	12,042	21,345
483E	Chitedze	7,512	23,781
484E	Chitedze	4,339	17,366
485E	Chitedze	6,542	25,170

A. GRAY

- January 25 - Met with the Perkin-Elmer salesman from Johannesburg and Mr. Panje from Bvumbwe to discuss atomic absorption spectrophotometers under consideration for purchase for Bvumbwe and Chitedze ARS.
- February 1-5 - Medical trip to Pretoria, RSA during which visits were also made to the Animal and Dairy Science Research Institute, Irene, RSA and the Perkin-Elmer distributors in Alberton, RSA who demonstrated the proposed Model 3030 Atomic Absorption Spectrophotometer under consideration for purchase for Bvumbwe and Chitedze ARS.

- February 17-18 - Conference at Bvumbwe ARS with Dr. Maida and staff on commodity purchasing.
- February 23 - The first meeting of the Livestock Task Force (LTF) chaired by Dr. Gray was held at Chitedze ARS. The LTF is composed of representatives of Bunda College of Agriculture, Department of Veterinary Services and Department of Agricultural Research. The terms of reference are as follows:
- a. Develop a recommended plan for coordination of livestock/pasture research activities of the Department of Agricultural Research, Bunda College of Agriculture and the Department of Veterinary Services.
 - b. Review the existing policy on distribution of livestock/pasture research between the Department of Agriculture Research and Bunda College of Agriculture and make recommendations for future collaboration between all parties concerned.
 - c. Review the livestock/pasture research program for smallholders in Malawi, and make recommendations for its strengthening.
 - d. Recommend a mechanism for establishing livestock/pasture research priorities.
 - e. Review existing facilities for livestock/pasture research, and make recommendations for their retention, abandonment, strengthening, or relocation.
- March 8-16 - visited the International Livestock Center for Africa, accompanied by Mr. Wells Kumwenda, Head, Farm Machinery Unit and Mr. A.P. Mtukuso, Livestock Section. The purpose of the trip was to finalize a collaborative working relationship with ILCA which had recently been approved by the Government of Malawi. Mr. James T. Munthali has been designated the Liaison Officer for Malawi, with Dr. Gray filling in until Mr. Munthali returns from graduate school.

Three potential areas of collaboration were identified:

1. ILCA plans to send a team of Dr. Frank Anderson, Director of the ILCA Highlands Program, Dr. Martin Butterworth, Deputy Director of Research, Mr. Guido Gryseels, Economist and Mr. Dwight Light, Data Processing Specialist, to Malawi in June to develop a working relationship on livestock record keeping. They are particularly

interested in assisting with analysis of and reviving the dairy cattle recording scheme which was abandoned by FAO in 1980.

2. ILCA expressed interest in assisting us in gathering information on goat production. They offered to send a person to assist us in making a goat survey using their proven survey method.
3. ILCA has submitted a proposal to the EEC for funding to establish a Pan-African Draft Animal Research Network. Interest was expressed in having Malawi as one of the cooperating countries.

March 18 - Livestock Task Force Meeting at Bunda College of Agriculture.

March 29-31 - Medical trip to Pretoria,

B. HANSEN

Several meetings were held during January and February at Lilongwe ADD to prepare for the diagnostic survey in Ntcheu. Attended the First Workshop on Planning Methodology and ADD Participation in the Long Range Planning Exercise held in Lilongwe and at Chitedze in January. Attended several meetings of the Ministry Data Users Committee.

The project evaluation occurred late January and early February. This involved quite a lot of time in meetings.

Two major trips took place in March. A team of 13 people from Chitedze and Tsangano Research Stations, Lilongwe ADD and Ntcheu Project participated in a week long survey (14th-18th) of EPA 6 of Ntcheu Project. The following week the social science sections went to Zambia for eight days (24th-31st) to study the work of the Adaptive Research Planning Teams there.

C. JANICKI

I traveled extensively during the quarter to become acquainted with the agriculture in Malawi. Also, a working-study trip was made to Zambia to visit researchers in that country who are conducting on-farm adaptive research trials. This trip was very useful because the researchers in Zambia pointed out many pitfalls which the Malawi Adaptive Research Program may be able to avoid when on-farm adaptive research trials begin later this year.

Numerous meetings were held with the External Review Team, with technical assistance team members, with members of the Farming Systems Section and with officials of the Department of Agricultural Research (DAR). These meetings were very useful in that they helped define what has been done and the direction the DAR plans to take in future on-farm research activities.

D. PASLEY

The important travel and meetings during the quarter and the past fiscal year were: Zimbabwe and Kenya to view irrigated and rainfed wheat production practices and to identify potential cultivars; IITA to screen maize lines developed there for suitability to Malawi and to determine exactly what IITA can do to help Malawi; CIMMYT to explain Malawi's needs in term of improved maize and wheat varieties; and the Hybrid Corn and Sorghum conference to establish contact with public and private corn breeders in the U.S.

Also, the UF/USAID/MA Plant Breeder was selected to assist in the preparation of a master plan for the reorganization of the Department of Agricultural Research. This is a major exercise and received half or more of the Plant Breeder's time from November 1982 to March 1983. Invaluable assistance in that regard was provided by International Programs, University of Florida, in the persons of Drs. York and Waugh.

E. PERVIS

- January 5 - Met with Dr. Erez (Planning Division) about the future agricultural development planning efforts in the Ministry of Agriculture.
- January 10 - Met with Mr. G. Jere of LADD in regard to Miss Chikwana's research.
- January 17-20 - Attended and presented a paper at a seminar on Planning Methodology, organized by the Ministry of Agriculture. The title of the paper was "A Preliminary Report on the Economic Analysis of District Maize Trials".
- January 28 - Attended meeting of the Computer Advisory Committee in the Ministry of Agriculture.
- February 4 - Attended meeting of the Computer Advisory Committee in the Ministry of Agriculture.
- February 5-24 - Attended a Farming Systems Research Diagnostic Survey Workshop in Harare. The workshop was conducted by CIMMYT and the University of Zimbabwe.
- March 18 - Attended meeting of the Computer Advisory Committee in the Ministry of Agriculture.
- March 21 - Met with Mr. G. Jere about Miss Chikwana's research activities.
- March 24 - Demonstrated the use of the Apple Computers to Mr. D. Pederson of the Natural Resources College.

VI. SHORT-TERM TECHNICAL ASSISTANCE**Dr. E.T. York**

Spent 11 days in Malawi during the quarter to assist the Local Preparation Team (LPT) develop an organizational structure to include in the Master Plan (MP) for the reorganization of the Department of Agricultural Research (DAR).

Dr. R. Waugh

Spent one month in Malawi during the quarter to assist the LPT develop broad research concepts and strategy, to include in the MP.

Dr. C. Eno, IP-UF

Spent 10 days in Malawi. His visit extended into the next quarter. Dr. Eno discussed budget matters and management with the DAR and with AID/Malawi.

VII. ADMINISTRATION

Met with the Malawian students at University of Florida to discuss news from the Department of Agricultural Research as well as their training programs.

Met with Al Harding and Sheldon Cole at Gainesville to assist in their familiarization of the University of Florida.

Met with Bob Waugh at University of Florida to develop plans for his TDY visit to Malawi, and to discuss plans for a computerized information retrieval system for Malawi.

Met with Arlene Remington on project accounting and budget matters to assist in developing fund allocation through November 30, 1984.

Met with Bill Kunkle on linear programs for the Apple computer to meet the needs of the Livestock Specialist and the Agricultural Economist on the Malawi project. Brought back a Least Cost Feeds software package which should be useful in linear programming applications in Malawi.

Traveled with the External Evaluation Review team to Makoka, Bvumbwe, Ngabu and Kasinthula to assist in their evaluation of the Agricultural Research Project.

Prepared request for Mr. Gadabu to remain at University of Florida which was submitted to CARO and finally approved.

Requested approval for purchase of neutron probe for Mr. Saka's research at University of Florida and in Malawi. Submitted to CARO, and finally approved.

Requested USAID/Malawi to issue a new IAP-66 for Miss Mtambo, which was finally done.

Traveled with External Evaluation Review team to Lunyangwa to assist in their evaluation of the Agricultural Research Project.

Requested Dr. Maida to confirm his support of Dr. Arnold which was promptly done. This was transmitted to USAID Malawi for their action on my request for approval of Dr. Arnold as the Horticulturist on the project. Approval was finally obtained.

Prepared request for Dr. Maida to visit University of Florida and submitted it to CARO for approval which was obtained.

Participated in External Evaluation Review round-up meeting.

Met with Mr. Taylor and Dr. Judy to explain State of Florida purchasing procedures.

Prepared request for an Administrative Assistant recommended by the External Evaluation Report, for USAID Malawi and CARO. Approval was promptly given by AID and is pending by the Ministry of Agriculture.

Requested action on Dr. Wallace's TDY, originally submitted January 12th approval was finally obtained.

Requested USAID approval for medical examination for D.E. McCloud in South Africa approval was finally obtained.

Met with a WHO group which was visiting Malawi to explain our use of the Apple computers on the Malawi Agricultural Research Project.

Requested CARO's approval for Mr. Daudi's attendance at the 16th Symposium of the Nematological Society of Southern Africa, approval was promptly granted.

Attend the Bvumbwe Field Day. This field day was attended by approximately 250 researchers, extension specialists and commercial representatives. The material presented at the field day was excellent, but the group was too large and presentations could have been improved by breaking the group into at least six smaller sections which could have been rotated between stations.

Attended and participated in the Chitedze Field Day. Assisted in the preparation of a 62 page computer-prepared field day handout. The presentations at the field day were excellent as was the organization of the field day. There were around 300 persons in attendance and the group was divided into 8 sections which were rotated among stations. This arrangement provided for excellent presentations and discussion by the groups.

Met Dr. Arnold and family at Chileka and assisted them in getting settled-in.

VIII. FINANCIAL

Table 3 shows transactions from the University of Florida Local Account for the period January 1, 1983 through March 31, 1983, while Table 4 summarizes the expenditures by program for the quarter and for the project to date.

Table 3: Transactions-University of Florida-IFAS Local Account January, February and March, 1983

Date	Details	MX	MK
January			
1	Balance Brought Forward		28,026.89
5	Malawi Govt. 10th Claim Reimbursement	5,726.67	
10	L. Janicki School Fees	415.00	
10	L. Janicki Salary Advance	400.00	
18	C.J. Matabwa Travel Advance	800.00	
18	Manica Telexes	149.70	
18	Agric. Trading Co. Fertilizer	900.00	
26	L. Janicki Salary Advance	300.00	
February			
9	Receipt	11,137.08	
9	Officer-in-charge Utilities Elect.	509.88	
9	Securicor (M) Ltd Feb. Services	564.80	
9	Manica, Telexes	704.74	
	McCloud Ticket Mzuzu	57.00	
	Janicki Ticket Mzuzu	57.00	
	Pervis Ticket Lilongwe to Harare	114.00	
	Matabwa ticket LL-Jo'burg,Capetown	737.50	
	Gray Ticket LL-Jo'burg	620.00	
	McCloud Ticket BT-LL	48.50	
	Pasley Ticket LL-B-LL	97.00	
	McCloud Ticket LL-Mzuzu	57.00	
	Janicki Ticket LL-Mzuzu	57.00	
	Msiska Ticket LL-Mzuzu-LL	114.00	
15	S.F. Pasley Trav/Drup Hooks Reimb.	317.59	
15	R.C. Gray Per Diem	529.28	
16	Gaskells Service Cont. Copia 1000	450.00	
17	L.J. Janicki Per Diem	73.92	
21	L.J. Janicki Drapery/reimbursement	117.47	
21	L.J. Janicki School Fees	10.00	
23	A.J. Chiyembekeza Travel Advance	400.00	
23	C.E. Maliro Travel Advance	400.00	
23	Mrs. P. Ngwira Travel Advance	400.00	
24	R.C. Gray Travel Advance	575.00	
24	W.F. Kuuwenda Travel Advance	575.00	
24	A.P. Mtukuso Travel Advance	1,000.00	
March			
8	Receipt	16,503.19	
14	D.W. Pervis Travel Reimbursement	1,840.23	
14	C.J. Matabwa Travel Reimbursement	15.10	

Table 3 (continued)

Date	Details	MX	MX
14	A. Hansen Visa Reimbursement	9.25	
14	A. Hansen Misc. Reimbursement	8.67	
15	Manica, Telexes	364.07	
	C.E. Maliro Tickt Blantyre	48.50	
	R.C. Gray Tikt LL-BT-LL	97.00	
	McCloud Tickt to Jo'burg	620.00	
	Chiyembekeza Tikt Jo'burg	620.00	
	Maliro Tickt to Jo'burg	620.00	
	P. Ngwira (Mrs) Tikt Jo'burg	620.00	
	Gray Tickt LL-BT-LL	97.00	
	W.F. Kuwenda Tickt LL-BT-LL	97.00	
	Mtukuso Tickt LL-BT-LL	97.00	
	Gray Tickt Addis Ababa	824.00	
	W.F. Kuwenda Tickt Addis Ababa	824.00	
	Mtukuso Tickt Addis Ababa	824.00	
	R.C. Gray Tickt Jo'burg	408.00	
15	Securicor (M) Ltd March services	583.60	
15	G.M. Bulla 61.60		
15	D.S.C. Phiri	61.60	
15	M.T. Kawonga	61.60	
16	Officer-in-charge, Electric.	502.44	
16	Lands Valuation water bills	278.30	
16	Gray Tel. Deposit Reimbur.	162.00	
17	F. Nyondo Cholera fee reimb.	4.00	
17	McCloud Trav Reimbursement	415.52	
17	McCloud Reimb comp. supplies	989.62	
18	Mhlane - Receipt	300.00	
22	Bulla Per Die	61.60	
22	Phiri Per Die	61.60	
22	Kawonga Per Die	61.60	
22	A. Hansen Travel Advance	833.25	
22	L.J. Janicki Travel Advance	833.25	
22	Kawonga Travel Advance	833.25	
22	Ndengu Travel Advance	833.25	
22	Bulla Travel Advance	833.25	
22	Phiri Travel Advance	833.25	
22	Jere Travel Advance	833.25	
22	Nyondo Travel Advance	833.25	
23	Gray Travel Advance S.A.	415.00	
23	Mhlane Travel Reimb	43.77	
23	Receipt	15,121.73	
23	V.W. Saka Travel Advance	730.00	
	Total 36,862.22	71,088.89	
	Plus wrong debt check No. 496	6.71	
	Plus checks on bank statement from previous quarter	19,453.74	19,460.45
	Less unrepresented checks	1,536.02	
	Balance Carried Down		54,786.65
	Balance as per Bank Statement	16,302.24	

Table 4

Summary of Expenditure from the University of Florida Local Account by Programs

January 1 to March 31, 1983

Program	Expenditure This Period	Expenditure To Date
	K	K
Maize, Breeding and Agronomy	1,116.04	15,056.98
Groundnut, Breeding and Agronomy	319.09	5,156.52
Pasture Agronomy	1,694.40	16,780.62
Livestock	16,123.96	36,357.57
Horticulture, Fruits and Vegetables	--	11,608.11
Agricultural Economics	2,180.78	8,468.25
Farming Systems	4,534.30	14,069.40
Soil Fertility	--	8,219.76
Research Coordination	2,187.64	15,753.63
Library	11.50	1,670.62
Participant Training	3,653.71	24,332.17
In-service Training	13,303.82	47,099.71
Vehicle Purchase	--	197,758.89
Overhead *	12,112.99	97,638.89
Total	57,235.23	499,971.12

* Not assignable by Program

IX. PUBLICATIONS AND REPORTS

One proceedings and three reports were produced during the quarter:

- Proceedings and Materials from the Workshop on Intercropping Research in Malawi. March 1983. Malawi Agricultural Research Project. Chitedze Agricultural Research Station, Malawi.
2. Intercropping and Farming Systems in Malawi. Published in Hansen, A. (ed) Proceedings and Materials from the Workshop on Intercropping Research in Malawi. March 1983. Malawi Agricultural Research Project. Chitedze Agricultural Research Station, Malawi.
 3. Introduction and Demonstration of Micro-Computer Capabilities for Agricultural Research at Chitedze Agricultural Research Station: Complementary use of two computer programs to handle farmer survey material: 1. a data management program, 2. a word processing program. Presented at the First Workshop on Planning Methodology and ADD Participation in Long Range Planning Exercise. Lilongwe, Malawi. 20 January 1983.
 4. Farming Systems Research and Adaptive research Programs: How may they help Programme Managers plan and implement ADD development? Presented at the First Workshop on Planning Methodology and ADD Participation in Long Range Planning Exercise. Lilongwe, Malawi.

Three more reports were published during the first three quarters of the year - see the April-June and October-December Project Quarterly Reports.

TRIP REPORT TO SOUTH AFRICA

Professor D.E. McCloud

This report will cover several specific aspects which I believe are of significance to Malawi:

1. The grain legume and oilseeds group at Potchefstroom receives many lines of dry beans each year from the international institute, CIAT in Cali, Columbia. These lines are screened widely in South Africa for adaptation, disease resistance and suitability for the South African markets. Often because of local preference good lines are discarded because of wrong color etc. These may be high yielding, disease resistant lines which would be of potential value to Malawi. This pre-screening of lines in Africa could provide a source of valuable germ plasm for Malawi. South Africa is most willing to share these materials with Malawi; I recommend that we take full advantage of this offer.
2. South Africa has been very successful in raising yields of dry beans by producing seed free of virus and other diseases. They do this by producing clean seed and growing it off-season in an irrigated environment. The research group at Potchefstroom offered to produce clean-up seed from a few bean varieties from Malawi -- if this service would be of benefit to us; I recommend that we take advantage of this offer.
3. Sunflower production in South Africa has increased very rapidly in recent years. Presently, nearly all sunflower production is from the newer hybrid varieties. These varieties should be tested in Malawi, and if found to have potential here, the oilseeds group in South Africa has offered to make the inbred lines available to Malawi. I recommend that we begin immediate testing of the South African sunflower hybrids so that Malawi can take advantage of this offer.
4. South Africa has a coordinator of field trials whose responsibility is to assist in running the national field trials, and to ensure that the trials are conducted in appropriate areas, and that the results are summarized promptly, and the results made available rapidly. Malawi might well consider this approach.
5. Malawi could benefit from a visit by Mr. van der Merwe, peanut breeder from Potchefstroom, who has developed the new Sllie variety. He has several very interesting new lines in his breeding program. It would be very helpful if he could come to Malawi within the next few weeks to assist in evaluation of our peanut materials. I recommend that an invitation be issued to Mr. van der Merwe to come to Malawi for one week in early April to assist Mr. Chiyembekeza in the evaluation of his breeding materials.
6. The South African maize crop is very seriously affected by drought, the normal crop is 11 million tons; South African estimates place this year's crop at only 7 million tons. My

assessment, after seeing much of the crop in the heart of the maize growing region, is that this year's production will be less than half of a normal crop.

X. PROBLEMS

1. Planning of project activities to the PACD was severely limited because AID/WA and the University of Florida were unable to reach agreement on funding through the PACD. In effect, the project operated from July, 1982 through March, 1983 without funding or budget.
2. As pointed out by the External Review Team, financial control of the project is fragmented among AIDMA, International Programs, University of Florida, UF/USAID/MA field office and the Department of Agricultural Research, GOM. This does not present financial control problems but the accounting procedures used by each group precludes a ready assessment of the true financial picture of the project. Thus, it is almost impossible to make needed adjustments as the project draws down in certain financial categories.
3. With less than two years remaining in a five-year project, the External Review Team has recommended that the project change directions and, also incorporate a new component - Women in Development. To completely comply with these suggestions would require abandoning some on-going research and, more importantly, abandoning investments in terms of time, personnel, and equipment. In regard to this, U.S.A.I.D. should give serious consideration to early evaluation of Title XII Projects for the purpose of redefining project objectives and goals. Project Papers should be considered provisional until such an evaluation takes place.
4. Selection of participants for training in the U.S. has proceeded rather slowly. As noted in Section III, 17 participants will still be in training past the PACD. This raises some concern in the GOM because all goods and services must be provided by the PACD. A clear commitment by U.S.A.I.D. seems necessary if more students are entered in training at this late date.