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Quarterly Reports
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THE GAMBIA AGRICULTURAL RESEARCH
AND DIVERSIFICATION PROJECT
(GARD)

February, 1986-December, 1986

THE
GAMBIA
AGRICULTURAL
RESEARCH
AND
DIVERSIFICATION
PROJECT
(GARD)

QUARTERLY REPORT NO. 1
February-March, 1986

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
Summary	1
Introduction	1
Project Administration	3
Agricultural Research Management System	3
Socioeconomics & Research Support Services	4
Training	5
On-Station/Component Research	6
On-Farm Research	7
Promotion of Technologies	7
Attachment A	
GARD Project Staff	8
Research Associates	9
Support Staff	9
Peace Corps Volunteers	10
Short-Term Training Advisors/Consultants	11
Attachment B	
Reports	12
Attachment C	
M.S. Students Participant List	14

SUMMARY:

This first Quarterly Report for The Gambia Agricultural Research and Diversification Project (GARD), covers the period February - March, 1986, and assesses progress in the implementation of the Interim Workplan. The first Annual Workplan for the Project will be issued in June and cover the period June 1986 through May 1987.

The initial period of the Project was devoted to establishment of the project administration including recruitment of local staff and purchase of vehicles and equipment and initial arrangements for construction for housing at Sapu. Office facilities were set up at the Mixed Farming Project (MFP) buildings at Abuko, and at the Department of Agriculture at the Cape. Activity was initiated or continued on most major components of the project including the Agricultural Research Management System (ARMS), Research Support Services, Training, On-Station/Component Research, and On-farm Research. In addition to the efforts of Gambian Researchers and long-term technical assistants, a number of short-term training advisors visited The Gambia during February and March. Subjects of these missions included ARMS, Horticulture, Soils, Agronomy, Animal Traction, and Agricultural Statistics. Preliminary or final reports have been prepared and circulated covering all these missions. A series of discussions on the final recommendations will be held during the coming quarter and provide inputs into the annual workplan preparations scheduled for the end of May.

Recruitment of long-term technical assistance and research associates for the initial phase of the project has been concluded, with the exception of the forage agronomy position. Efforts to fill this position have been suspended pending a review of plans for supporting range management and forage agronomy research in the light of the findings of the recently completed terminal evaluation of the Mixed Farming Project. Staff at post as of March included the Chief of Party, Project Administrator, the Research Extension Liaison Officer (Sapu), and the Research Associate in Water Control Studies. A Cropping Systems Agronomist has been recruited and made an initial visit to The Gambia from his current post in Senegal at the end of March. He will commence his full-time assignment with the project in early July. Local staff positions in accounts, office administration, training and secretarial have been filled. Three Peace Corps Volunteers have been assigned to the project and will work in the on-farm trials program and research support services.

INTRODUCTION:

This First Quarterly Report of the GARD project covers the period February - March, 1986. Quarterly reports will be issued by the project four times a year; in April, July, October and January. Since

the Progress Report and Interim Workplan issued in February, 1986, covered developments on the project through the end of January, this report will cover only the two-month period ending March, 1986.

An operational objective of the GARD Project is to increase the productivity of the agricultural research system in The Gambia. The focus is the strengthening of the research programs in the participating departments rather than the initiation of a separate set of research activities which would be specifically identified with the GARD Project. Hence, quarterly reports and annual work plans make reference to activities which may receive little or no support from the GARD Project, but which are directly relevant to the concerns of the project. Support for agricultural research comes from a number of sources aside from the GARD Project, most notably the Government of The Gambia itself. Agricultural research is a primary or important focus of the Mixed Farming Project, the FAO Fertilizer Use Project, ADP II, the Caisse Centrale Cotton Project, Overseas Development Authority supported research activities, FAO, AID and World Bank support for macro and sectoral planning in PPMU and the Ministry of Finance. The Gambia is a participant in regional projects, including the Integrated Pest Management Project (IPM), and the CILSS Regional Program of Cooperative Trials, and collaborates with a number of international agricultural research centers. Finally, The Gambia is the host country for the International Trypanotolerance Center (ITC).

GARD will provide complementary support in many instances to activities covered by these projects and activities. Discussions have been initiated with representatives of several of these projects aimed at laying the basis for close collaboration in the future. Initially much of this collaboration will be informal in nature. As the Agricultural Research Management System (ARMS) currently being examined by a working group comes into being it is anticipated this collaboration will become more formalized. (See following section on Agricultural Research Management System.)

Quarterly reports will follow the same format as the operative Workplans; in this case the Interim Workplan covering the period February up to May 1986, and discuss progress made in relationship to these workplans. The current Interim Workplan will be succeeded in June by the first Annual Workplan covering the period June, 1986 - May, 1986.

The initial section discusses developments on the administration and staffing of the project and the progress in arrangements for the construction of staff housing at Sapu. Subsequent sections deal with the agricultural research management system, research support services, training, on-station/component research, on-farm research and promotion of technologies. The attachments to the quarterly report include a list of long- and short-term staff assignments, training activities and reports prepared.

PROJECT ADMINISTRATION:

During the first quarter of 1986, candidates for local staff positions were interviewed and selected. New staff hired include Bintu Nying (Administrative Secretary), Lawrence Bruce (Accountant and Administrative Assistant), and Connie Tucker (Administrative Assistant/Training). In addition, Max Njie was employed on a temporary basis for procurement and expediting.

The project has purchased 13 vehicles: six passenger cars, two jeeps, two pickups, and three motorcycles for the Peace Corps volunteers attached to the project.

Final architectural drawings for the three staff houses at Sapu were completed, and letters of solicitation for construction contractors have been sent out. The plans are now awaiting final approval by the REDSO engineer, which is expected in April.

Tentative agreement was reached on procedures for the disbursement of research funds that would facilitate paper flow and maintain adequate financial controls.

Office facilities were set up both at MFP - Abuko, and at the DOA-Cape. Discussions have been held regarding construction of an office at the Cape.

Two Mixed Farming houses have been transferred to GARD and are currently being used as temporary housing for consultants and short-term staff. Use of all other Mixed Farming houses, vehicles, and equipment will be discussed with the Ministry of Agriculture in April.

AGRICULTURAL RESEARCH MANAGEMENT SYSTEM:

The ARMS Working Group (WG), which was established in January, held several meetings in the first half of February during the course of the mission of Dr. Matthew Dagg from the International Service for National Agricultural Research (ISNAR). Individual assignments were made covering the terms of reference for the WG and members made presentations on their assigned topics. The WG held hearings for agricultural researchers at Cape, Yundum and Sapu to provide input on the subjects covered by the WG terms of reference and feedback on options for research structures and procedures. Special attention was given to the range of constraints that researchers face in their work which, collectively, greatly limit the productivity of the research system as a whole. During these sessions it was explained that the agricultural research management system that emerged from the deliberations of the working group would establish priorities and manage the research activities for all departments responsible for

agricultural research and not just the research activities supported by the GARD project.

Members of the WG and the ISNAR consultant held informal discussions with the consultants on civil service reform to explore areas of common interest. Since there is a significant area of overlap between the terms of reference for the civil service reform and the WG, the findings of the former will be reviewed with interest by the WG (and vice versa).

In support of the work of the WG, a survey of agricultural research manpower was launched in March with the assistance of Patricia O'Neil, one of three Peace Corps Volunteers who will be working with the GARD project. A questionnaire was designed and sent out to all research staff involved in research in the six participating departments. Questionnaires will be returned and analyzed in April with the collaboration of the ISNAR consultant. The survey results will provide essential information needed for discussions on both training and research priorities which are the responsibilities of the GARD training committee, the IPC, and the ARMS WG.

At the conclusion of his mission, the ISNAR consultant prepared a draft outline of the WG report along with notes on various sections of the report. The draft outline has been distributed to WG members along with a request that drafts of the individual sections be submitted by the end of March. It is planned to finalize a draft of the WG report in the latter part of April during the proposed return visit of Dr. Dagg (April 22 to May 6).

SOCIOECONOMICS AND RESEARCH SUPPORT SERVICES:

The short-term training advisors (STTA) on agricultural statistics, Prof. Aaron Johnson and John Rowe, concluded their mission in mid-February with a preliminary discussion of their major findings at PPMU. While their primary purpose was to concentrate on the PPMU National Agricultural Sample Survey (NASS), they also contacted many people in various ministries and departments concerning their needs for and uses of agricultural data. Their report concluded that the current lack of confidence in PPMU's agricultural data could be alleviated if more effort were applied in a number of areas. The report recommended specific improvements on current procedures in the areas of: sample design, questionnaire design, enumerator training, field procedures, data summarization, and publication. The report also recommended that a statistical review committee be formed in order to establish a calendar of statistical releases and then critically review the data before final publication. If the statistical releases were published on a schedule, with a critical review prior to publication, the data quality would improve and the users' confidence in the data would increase.

The report was widely circulated and will be discussed with PPMU officials and other interested parties when John Rowe returns during April to assist in the implementation of the 1986 NASS.

The final evaluation of the MFP project took place in late February through early March and the report is now under consideration by AID/Banjul. Discussion of the findings and the implications for future action is expected to take place in April/May following distribution of the report.

The ODA consultancy on research results mentioned in the Interim Workplan took place during the latter part of February in the form of a two-week consultancy by Prof. Robert Willey from the University of East Anglia. The mission was useful in assisting researchers in defining research priorities for the coming season, notably in the area of intercropping. Further discussion of the results of this mission is contained in the on-station and on-farm research sections.

The MDI study of the management of the Sapu Agricultural Station was submitted to the Ministry of Agriculture in March and will be reviewed in April.

TRAINING:

An administrative assistant (Connie Tucker) with specific responsibilities for training activities was hired in February. Participating departments were notified of training opportunities under the project and selected training programs were publicized. Two candidates for Master's degrees in agronomy started their programs at Cornell and Wisconsin, respectively, in January and are making good progress. Mohammed Cole is currently enrolled in courses at Wisconsin despite serious medical problems.

Primary and secondary candidates were selected for the FSSP regional workshop on on-farm trials scheduled for April 7 - 25 in The Gambia. Gambian participants will be supported by the project while participants from other countries will be assisted by FSSP or projects in their respective countries. The Gambia has been allocated 11 positions in the workshop, but will be able to fill additional spaces not taken by participants from other countries. Two of the three Peace Corps Volunteers, David Gaines (entomology) and Michael Marcin (horticulture), assigned to the GARD project will also participate in the On-Farm Trials Workshop as part of their technical training. Following the completion of the training, these volunteers begin their field assignments in Upper River and Western Divisions respectively where they will be involved in the supervision of on-farm trials. The volunteers also participated in a workshop organized by the extension service of the Department of Agriculture in February as part of the initial phase of their orientation to their assignments.

ON-STATION/COMPONENT RESEARCH:

The period under review was dominated by intense planning efforts for the coming cropping season, culminating in the annual meeting of the Agricultural Research Advisory Board (ARAB) at the end of March. As envisaged, the procedures for approval of research programs for the 1986/87 cropping season closely followed those of previous years. Although a number of the research reports and plans did not reach the ARAB meetings in their final form, it was generally felt that preparation efforts for the coming season were significantly ahead of those of previous years. Among the outcomes was a decision to reduce the amount of on-station research, notably in the upland crop improvement program, in favor of more on-farm research. Some on-station trials which have been carried out over a number of years and promised to provide limited additional information will be abandoned. Even with these reductions, it is anticipated that the resources of the agricultural research service will be stretched to the limit given the demands of the on-farm research.

The project provided the services of short-term training advisors (STTAs) in agronomy, soils, horticulture and animal traction to assist Gambian researchers in reviewing past results and making future plans. In addition, the long awaited ODA mission of Dr. Robert Willey on research results took place at the end of February. Preliminary or final reports have been received from all of these missions and have been distributed for review.

Dr. Joshua Posner was selected for the long-term TA position in cropping systems agronomy. Dr. Posner currently holds a similar position with the AID-supported Michigan State project in Senegal. He participated in the ARAB meetings at the end of March in Banjul and will make at least one additional short visit to The Gambia in May prior to moving here with his family in July. Dr. Posner has extensive experience in farming and cropping systems research in West Africa and Latin America and has spent the past four years working with the Senegalese Institute of Agriculture Research (ISRA) initially based in Cassamance and currently in Dakar. Dr. Posner will be based at Yundum/Abuko and work with Mr. Solomon Owens, Dr. Tijan Jallow and Mr. Saihou Taal who are researchers at Yundum. He will also serve as a member of the Yundum-based Farming Systems Research Team for the western portion of the country.

The long-term TA position in Forage Agronomy was advertised by the University of Wisconsin in February. However, following the visit of the STTA in Agronomy, Professor Earl Gritton, and the results of the MFP Terminal Evaluation it was decided to suspend recruitment to explore ways in which forage and range management activities currently supported by MFP might be combined in a single position. This issue will receive further attention in the near future in the course of discussions on the MFP evaluation and will be a focus of the visit of Dr. Kenneth Shapiro, UW Project Coordinator, scheduled for the early May.

Christine Elias was selected as the research associate to assist the Department of Water Resources in a research and design study of water-controlled systems aimed at developing a prototype design for improving these systems. Research associates were also identified in agronomy and animal traction and should commence their assignments based at Sapu within the next six months.

ON-FARM RESEARCH:

Discussions are in process with various research programs and projects concerned with on-farm research aimed at refining plans for the 1986/87 season. This process has been greatly aided by the arrival in mid-March of Dr. Ibrahim Diallo, the candidate for the Research Extension Liaison Officer (RELO) position at Sapu. Dr. Diallo attended the ARAB meetings at the end of March and will participate in the FSSP Workshop on On-Farm Trials.

On-farm research was the major focus of discussions during the visit of Dr. Robert Willey, the ODA-supported consultant from the University of East Anglia at the end of February. As noted earlier, a decision was made to reduce on-station research in favor of an increased effort in on-farm trials. In past years on-farm work has been largely carried out by the Extension Service with considerable support and guidance from the FAO Fertilizer Use Project. The demands of on-station work together with logistical and transport problems have greatly impeded the participation of researchers in this effort. Attempts to form multidisciplinary teams have met with very limited success prior to the recently initiated effort under the leadership of the Horticultural Unit. There appears to be a new willingness on all sides to emphasize both research team efforts and on-farm research.

The horticulture unit organized a multidisciplinary team and conducted reconnaissance surveys of 13 villages in Western, Lower River and North Bank divisions in February. In March the team established recommendation domains based on the reconnaissance and conducted a second focused survey in six villages in three selected domains on priorities for horticultural on-farm trials. The unit, with assistance from the training advisor, will design trials in April and May based on the priorities established by the team.

PROMOTION OF TECHNOLOGIES:

As noted in the preceding section, Dr. Ibrahim Diallo, candidate for the RELO position, arrived in the country at the end of March for the beginning of a five-month mission. Dr. Diallo holds a doctorate degree from the University of Maryland in extension and has extension experience in the U.S. and Africa. As part of his mission he will be reviewing promotional efforts by Gambian government agencies and PVOs with a view to identifying possible complementary roles for GARD.

ATTACHMENT A

GARD PROJECT STAFF

Dr. Elon Gilbert - Chief of Party, Farming Systems Economist

Dr. Gilbert is based at the Department of Agriculture headquarters at the Cape and serves as counterpart to the Assistant Director of Agriculture (Research), Mr. M.S. Sompou-Ceesay. In addition to providing overall technical guidance for the project, he is specifically concerned with the agricultural research management system and serves as a member of the farming systems research group.

Dr. Gilbert is affiliated with the Center for Research on Economic Development at the University of Michigan. He has been in The Gambia since late November, 1985, with the exception of a two-week visit to the US in late March/early April.

Mr. David Gibson - Project Administrator

Mr. Gibson is currently based in the MFP offices at Abuko and will move to the Cape with the completion of office facilities there to be constructed by the project. The Department of Agriculture has advertised the position of financial administrator who will serve as counterpart to Mr. Gibson. He is responsible for project administration and the supervision of local support staff.

Mr. Gibson is affiliated with the extension service of Wisconsin. He made an initial visit to The Gambia in Nov./Dec. 1985 and has been in residence here since late January, 1986.

Dr. Ibrahim Diallo - Research Extension Liaison Officer

Dr. Diallo will be based at Sapu and work as a member of the farming systems group with specific responsibilities for supervision of the on-farm trials in the Eastern portion of the country. He will also serve as liaison officer between researchers and extension activities in the area, including the Caisse Centrale Cotton Project, ADP II and PVO projects. In addition, he will collaborate with the FAO Fertilizer Use project in all parts of the country.

Dr. Diallo is affiliated with Virginia State University and has been in the country since mid-March, 1986.

Dr. Joshua Posner - Cropping Systems Agronomist

Dr. Posner will be based at Yundum and will work with Gambian researchers at that station in the upland crop improvement, cultural agronomy/farming systems and rice agronomy programs and serve as a member of the farming systems research group.

Dr. Posner is currently a technical advisor with the AID/ISRA/ Michigan State University project based in Senegal. He made an initial visit to The Gambia in late March for the ARAB meetings and will return for a second visit in May. On the completion of his present assignment in Senegal, he will be appointed as Associate Professor of Agronomy at the University of Wisconsin and will take up residence in The Gambia in early July.

RESEARCH ASSOCIATES:

Ms. Christine Elias - Rural Sociologist/Water Control Studies

Ms. Elias is based in the Department of Water Resources and is working with the Senior Irrigation Engineer, Mr. M. Jasseh. She is assisting the Department with the preparation of prototype designs for improved water control for irrigated, rainfed and tidal rice areas. She will also collaborate with SWMU, FFHC, GTZ, the rice agronomy program in the Department of Agriculture and PPMU in the preparation of studies on the rice ecologies of The Gambia.

Ms. Elias is affiliated with the Center for Research on Economic Development at the University of Michigan. She has been a resident in The Gambia for several years, initially as a Peace Corps Volunteer and subsequently as a research associate in the socioeconomic team of the University of Michigan's Gambian River Basin Studies/Project. She formally commenced her assignment with the GARD project in mid-March, 1986.

SUPPORT STAFF:

Bintu Nying - Administrative Secretary

Ms. Nying has overall responsibility for supervision of office/clerical staff and work flow. She is presently based at Abuko (MFP) but will eventually move to the new Cape offices.

Lawrence Bruce - Accountant

Mr. Bruce's responsibilities include handling of all project accounts, posting, report writing and some administrative duties. Mr. Bruce will also move to the Cape from Abuko.

Connie Tucker - Administrative Assistant/Training

Ms. Tucker is primarily concerned with training activities and is working out of the Cape Office.

Deborah Touray - Secretary

Ms. Touray is based at DOA - Cape and will remain there working in support of Dr. Gilbert and Ms. Tucker.

PEACE CORPS VOLUNTEERS:

Mr. David Gaines - On-Farm Trials Supervisor

Mr. Gaines will be based at Basse in URD where he will be involved in the supervision of on-farm trials carried out jointly by the farming systems research group and the extension service. He holds a bachelors degree in entomology from Pennsylvania State University and has been undergoing cultural, language and technical training for his assignment since January.

Mr. Michael Marcin - On-Farm Trials Supervisor

Mr. Marcin will be based at Kassange in Western Division where he will be involved in the supervision of on-farm trials jointly carried out by the farming systems research group and the extension service. He will give special attention to horticultural crops. Mr. Marcin holds a Bachelors degree in horticulture from Pennsylvania State University and has been undergoing cultural, language and technical training for his assignment since January, 1986.

Ms. Patricia O'Neil - Agricultural Economist/Computer Specialist

Ms. O'Neil is based at Abuko/Yundum and will assist researchers with design, data entry and analysis issues for both socioeconomic and biotechnical research making use of the computer facilities provided by the GARD project. She holds a MA degree in Agricultural Economics from the University of Arizona and completed her training in March. She is currently implementing a survey of research manpower in support of the activities of the ARMS Working Group/and the project Training Committee.

Short-Term Training Advisors/Consultants:

1. Ms. Sharon Baumgartner - Training Coordinator, International Agricultural Programs, University of Wisconsin (Nov. 29 - Dec. 11, 1985).
2. Dr. John Caldwell - Horticulturist, Virginia Polytechnic Institute and State University (Jan. 3 - Feb. 16, 1986).
3. Mr. John Rowe - Agricultural Statistics, University of Wisconsin (Jan. 21 - Feb. 14, 1986).
4. Dr. A. C. Johnson - Agricultural Statistics, University of Wisconsin (Jan. 21 - Feb. 14, 1986).
5. Dr. Matthew Dagg - Research Management, International Service for National Agricultural Research (Feb. 4 - Feb. 18, 1986).
6. Mr. Paul Starkey - Animal Traction (Feb. 25 - Mar. 9, 1986).
7. Dr. Emmett Schulte - Soil Science, University of Wisconsin (Mar. 3 - 26, 1986).
8. Dr. Fred Madison - Soil Science, University of Wisconsin (Mar. 3 - 26, 1986).
9. Dr. Earl Gritton - Agronomy, University of Wisconsin (Mar. 3 - 26, 1986).
10. Dr. Charles Whyte - Campus Coordinator, Virginia State University (Mar. 19 - 21, 1986).

ATTACHMENT B

REPORTS

GARD Project Reports:¹

1. "Progress Report and Interim Work Plan" GARD Project, Feb. 1986.
2. "Accomplishments, Follow-Up and Needs for Farming Systems Research/Extension with a Focus on Horticulture Crops" by John Caldwell, March 1986.
3. "A Review of the Agricultural Data System at PPMU with Suggestions for Improvement" by A.C. Johnson and John Rowe, Feb. 1986.
4. "Strengthening Animal Traction Research and Developments in The Gambia Through Networking" by P. Starkey, March 1986.
5. "Evaluation of Soil Fertility Programs and the Soil Testing Lab, Yundum" by E.E. Schulte, March 1986 (Preliminary Report).
6. "Report on GARD Consultancy in The Gambia" by E. Gritton, March 1986 (Preliminary Report).

Recent Reports from Other Sources:²

1. ODA Consultancy Report on Cropping Systems Research and FSR/E Studies in The Gambia by R. E. Willey, Overseas Development Administration, Mar. 1986.
2. National Report on the Evaluation of 1985/86 Training and Extension Programs by Workshop Secretariat, Department of Agriculture, Feb. 1986.

¹Copies of final reports are available upon request from the secretary to the GARD Project, Department of Agriculture, Cape. Preliminary reports have a restricted circulation, but requests can be made for copies of the final versions when these are available.

²The list of recent reports from other sources is not intended to be exhaustive. Information on additional reports of relevance to agricultural research in The Gambia would be most welcome and should be addressed to the Chief of Party, GARD, Department of Agriculture, Cape.

3. ODA Seed Consultancy Mission for the Republic of The Gambia by ODA Consultants, Feb. 1986.
4. "Report of a Study on Sapu Research Station" by the Management Development Institute, March 1986.
5. "A Study of Farmers Intercropping Practices and Objectives, and the Performance of Maize/Cereal Patterns in the Upper River Division, 1985" by D. Boughton, T. Senghore and G. Langan.
6. "Review of Rice Research Highlights," Paper presented to the ARAB meeting by A. J. Marong, Sapu Research Station, Department of Agriculture, March, 1986.
7. "Crop Improvement Program: 1985 Cropping Season Report" Paper presented at ARAB meeting by H. A. Cox, Sapu Research Station, Dept. of Agriculture, March, 1986.
8. "Background to the Cultural Agronomy Research Program," Paper presented at the ARAB meetings by T. Senghore, Sapu Research Station, Dept. of Agriculture, March 1986.
9. "A Report on Soil Fertility Research, 1985," Paper presented at the ARAB meetings by S. O. Taal, Yundum Research Station, March, 1986.
10. "Estimating Live-Weight and Carcass Weight in Gambian N'dama Cattle" by W. Spencer, J. Eckert and P. Jakus, Technical Report No. 8, Mixed Farming Project, March 1986.
11. "C.I.L.S.S. Integrated Pest Management Project for Basic Food Crops: National Component of The Gambia: Entomology, Annual Report 1985" by O. Zethner et al., Crop Protection Service, Feb. 1986.
12. "C.I.L.S.S. Integrated Pest Management Project for Basic Food Crops National Component of The Gambia, Annual Report on Weed Studies" by A.G. Carsor and M. Formentini, Crop Protection Service, 1986.
13. "Report on the Soils Laboratory, Yundum," Paper prepared for the ARAB meetings by M.A.M. Ann, Yundum Agricultural Station, Dept. of Agriculture, March, 1986.
14. "Forage Program for 1986/87 Season," Paper prepared for the ARAB meetings by Musa Bojang, Forage Agronomy, Yundum - March 1986.
15. "Methodist Mission Agricultural Program: Report for the year 1985" by the Methodist Mission.

<u>Name of Participant</u>	<u>PIO/P Number</u>	<u>Sex</u>	<u>Employer in Gambia</u>	<u>Field of Training</u>	<u>Starting Date of Training</u>	<u>Est. Date of Degree Completion</u>	<u>Ending Date of Training</u>	<u>Location of Training</u>	<u>Degree Goal</u>
COLE, Mohammed	635-50028	M	Dept. of Agriculture (GOTG)	Agronomy	1/9/86	12/88		University of Wisconsin, Madison, Wisconsin	H.S.
MBENGA, Musa	635-50027	M	Dept. of Agriculture (GOTG)	Agronomy	1/9/86	5/88		Cornell-Ithaca, N.Y.	M.S.

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QUARTERLY REPORT NO. 2

April-June, 1986

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
I. Overview	1
II. Project Administration	2
III. Agricultural Research Management System	3
IV. Training	5
V. On-Station/Component Research	6
VI. On-Farm Research	7
VII. Promotional Activities	9
VIII. Prospective Activities for the Coming Quarter	9
Attachment A - GARD Project Staff	11
Attachment B - Reports	13
Attachment C - Training	15

I. OVERVIEW:

The second Quarterly Report of The Gambia Agricultural Research And Diversification Project (GARD) covers the period April-June, 1986. The period under review bridges two workplans, the Interim Workplan (February-April, 1986) which has now been succeeded by the Project's First Annual Workplan for 1986/87.

There was considerable activity in virtually all areas covered by the Project. Highlights include the following:

- Strengthening of Project administration and extension to Sapu.
- Submission of the Preliminary Findings and Recommendations of the Working Group on Agricultural Research Management Systems (ARMS) and a favorable response from the Interim Project Committee (IPC) to the recommendations.
- Completion of the first phase of the Research Manpower Survey covering all Gambian researchers and extension of the survey to cover expatriate researchers in The Gambia.
- A three-week workshop sponsored by the Farming Systems Support Project (FSSP) on on-farm trials.
- Selection of the first group of bachelor's degree candidates for training under the Project.
- Finalization of on-farm and on-station research plans for the coming season in the Department of Agriculture and acquisition of supplies and equipment in support of these programs.
- Initiation of the Water Control Studies under the auspices of the Department of Water Resources.
- Establishment of two regional farming systems research teams and four village-level teams to be located in URD, MID south, NBD, and WD.
- The First Annual Workplan, June 1986 - May 1987, was drafted with the assistance of representatives of GOTG, USAID, UW, VSU and GARD. A draft Executive Summary of the Workplan was reviewed by the IPC and USAID and will be finalized during the coming quarter.

Progress was also made in fostering collaboration with other projects, notably ADP II, SWMU, the FAO Fertilizer Use Project, ODA supported activities at Sapu and various PVOs. The Mixed Farming

Project (MFP) formally came to an end in mid-June although selected activities supported by that project will continue with assistance from GOTG departments and GARD. The assistance from MFP during the initial start-up period of the GARD Project was critical in achieving the progress to date.

A recurring theme in GARD activities is strengthening the coherence in The Gambia's agricultural research program through promoting collaboration between projects and departments and most importantly among individual researchers. The GARD Project is attempting to compliment ongoing activities by filling gaps across a broad range of concerns of the research system. These concerns include such diverse elements as mechanisms for the establishment of research priorities, provision of support services for the research system and acquisition of such supplies as a contribution to the diesel for electrical generation at Sapu.

II. PROJECT ADMINISTRATION:

A major focus of the Project Administration during the quarter under review involved the procurement of supplies and equipment in support of the on-station and on-farm trials program for 1986. This was done in collaboration with other projects, notably the FAO Fertilizer Use Project and ADP II. Additional new vehicles were acquired and a number of the MFP vehicles, supplies and equipment were assigned to the GARD Project at the conclusion of that project in June.

Bids were obtained for the construction of three houses at Sapu and a decision has been made pending confirmation from the University of Wisconsin. Renovation of office space and housing was initiated at the Cape and Yundum. The Project is currently utilizing office space at the DOA offices at the Cape and one of the former MFP houses at Mile 7.

Storekeepers and a Secretary were recruited for Sapu and Yundum and efforts continue to locate an Administrative Assistant for Sapu. The GARD Project administrative staff consists of an Accountant, two Secretaries, a Training Coordinator, Procurement Officer and Assistant and three drivers. In addition, eight MOA drivers have been assigned to project vehicles. Efforts continued to locate a Junior Accountant seconded from DOA or another department to work with the Project Accountant.

Policies and procedures governing the use of fuel, vehicles, stores and procurement, Sapu resthouse and housing were drafted and circulated for comments. In addition, preliminary discussions were held with individuals, notably staff members of MDI who might be available to assist with efforts to improve the financial administration and research management system during the latter part of the year. This activity would be closely related to that of the ARMS Working Group (see following section).

A shuttle service was established between Sapu and Banjul which leaves Banjul Tuesday mornings and returns from Sapu on Wednesday afternoons each week. In addition, a daily courier run is now in operation between Yundum, Abuko, Cape and Banjul. Use is being made of the Hydromat radio link between Banjul, Sapu and Basse to improve communications in the research service.

III. AGRICULTURAL RESEARCH MANAGEMENT SYSTEM:

ARMS Working Group: The ARMS Working Group (WG) continued its efforts during the quarter culminating in the preparation of the draft working group report at the end of June. Dr. Matthew Dagg of the International Service for National Agricultural Research (ISNAR) made a return visit to The Gambia for two weeks in April to assist the WG in the preparation of a preliminary report on recommendations and findings. This report was reviewed by the Interim Project Committee (IPC) of GARD which endorsed the recommendations. Those recommendations accepted for implementation in the near future included:

- a. Establishment of a National Agricultural Research Board (NARB) to set research priorities and approve research programs.
- b. Establishment of a Technical Secretariat to serve NARB.
- c. Extension of the Research Manpower Survey and development of a comprehensive research manpower plan and training program.
- d. Establishment of multi-disciplinary research programs with representation from various departments.
- e. Introduction of a program budgeting system and procedures for improved disbursement of funds.
- f. Introduction of a system of monitoring and evaluation of research programs.

Recommendations were also made for the creation of an agricultural research service with a separate scheme of service which would better suit the needs of the research community. The IPC accepted these recommendations in principle but requested additional details and instructed the WG to take the findings of the current Civil Service Reform now in progress into consideration. Copies of the preliminary findings and recommendations were circulated to department heads and to researchers for comments. At the end of June Mr. Sompo-Ceesay, Assistant Director of Agriculture for Research, traveled to ISNAR headquarters in the Hague, Netherlands, to work with Dr. Dagg and other members of the ISNAR staff in the preparation of the full draft WG report.

Research Manpower Survey: The ARMS Working Group implemented an inventory of manpower involved in agriculture research in all GOTG Departments participating in the GARD Project.

The information obtained is being used to assess areas and levels of training and to estimate current and potential man years of research effort devoted to program/project areas. Current research strength from GOTG researchers is about 15 man years from 44 in-country staff. The 17 staff currently on long-term training or leave may contribute approximately 7 man years, indicating a potential total of 22 man years. The 24 members of the expatriate community contacted thus far provide an additional 12 man years of agriculture research, bringing the Gambia-wide total to 34 potential years.

A preliminary report was prepared and distributed for comments. The survey is being extended to include expatriate researchers in The Gambia and a revised report including most of the expatriate researchers was issued in June.

Agricultural Statistics: The Short-term Training Advisor (STTA) in Agricultural Statistics, Mr. John Rowe, made a return visit to The Gambia in April to assist with the training program for the agricultural survey. During that visit discussions were held with PPMU on the Johnson/Rowe Report on agricultural statistics which was issued at the conclusion of the first STTA mission on agricultural statistics in February. One PPMU staff member responsible for the agricultural sample survey, Mr. Yaya Jallow, is currently participating in a training program at the University of Wisconsin in agricultural statistics with support from FAO. Further assistance to PPMU in the area of agricultural statistics will take the form of training and STTA visits, a detailed program for which was worked out during the quarter.

Research Support and Computer Facilities: A temporary research support facility is being established at the Mile 7 offices pending construction of its permanent home at Cape Point. Essential supplies, hardware, and software are now being ordered which will provide capacity for the bare minimum of the workload. Plans are still being finalized to procure the additional equipment necessary to meet the projected workload of the research support facility.

A detailed workplan of the functions and proposed projects supported by the facility was used as a guide for workload projections for both personnel and equipment. It is planned that two computer operators will be hired to operate two IBM computers to facilitate data entry for the following projects:

- Detailed data collection and analysis of on-farm demonstrations (GADS);
- Detailed data collection for water control (CADS);

- Programming and Budgeting System for the Agriculture Research Management Systems;
- Analysis of On-Station and Multilocational Trials;

Efforts continued to improve services at the Sapu and Yundum stations. ADP II and the GARD Project agreed to supplement the supply of diesel for the electricity generation at Sapu currently provided by GOTG. Additional support is anticipated from the Jahally Pacharr project. These efforts will raise the electricity generation periods per day from 3 hours to 14 hours. As noted in the section on Project Administration, support staff including an Administrative Assistant, Secretary, and a Storekeeper have been posted to Sapu to assist with the management of the research operations there. Sapu researchers are exploring the possibility of the establishment of a staff conference center which would also serve as a staff club in collaboration with other units and projects at Sapu.

Vehicles from the MFP including tractors have been made available to the research service to facilitate the trials programs for the 1986 season.

IV. TRAINING:

The Training Committee identified horticulture, social science, agronomy, biometrics, animal production, and farm mechanization as broad areas for training priorities. The Committee will seek input from directors of departments involved in agricultural research and expand the Research Manpower Survey as a part of the ongoing effort to further refine training priorities. The Committee also developed procedure for the implementation of short-term training.

Nominations for B.S. degree programs and departmental projections for short-term training needs were received and reviewed by the Training Committee. Mamour Sey, Assistant Superintendent in the Horticulture Unit, was selected for a USDA short course in Vegetable Crop Production and Marketing in June-August, 1986. Ebrima Camara, Amidou M'Ballo, and Kemoring Trawalley were selected for B.S. degree programs in Agricultural Statistics, Cereals Agronomy and Oilseeds Agronomy, respectively.

Twenty Gambians and three Peace Corps Volunteers participated in the Farming Systems Support Project's regional workshop on on-farm trials in April. Eleven of these participants were supported with GARD training funds. Some of the participants are currently assigned to the village-level FSR/E teams (see section on On-farm Research). Also, in-country training for staff of the Extension Service was conducted in June on the modified version of the Gambia Agricultural Data Systems (GADS) for use in the FSR/E on-farm trials/demonstrations and the Water Control Studies.

21

Musa M'benga is continuing his M.S. program at Cornell University and Mohammad Cole is registered for six hours at the University of Wisconsin-Madison despite serious medical problems.

V. ON-STATION/COMPONENT RESEARCH:

The meetings of the Agricultural Research Advisory Board (ARAB) at the end of March included discussions of the research programs for the coming year. These programs were finalized during the quarter and decisions made as to funding levels and the division of financing between various projects including GARD, ADP II, and the FAO Fertilizer Use Project. GARD is providing partial support for upland crop improvement, rice, cultural agronomy, soil fertility, horticulture and forage programs in DOA. Field activities commenced at the end of June with the arrival of the rains.

Discussions continued on measures to improve the Soils Laboratory at Yundum. The specific recommendations in Prof. Schulte's STTA report are scheduled for implementation beginning in the next quarter.

Preliminary discussions were held with DAHP on possible support from the Project to livestock research in the future. It was agreed to have a mission including representatives of the University of Wisconsin faculty as well as international organizations, notably ILCA, to visit The Gambia in the Fall to examine possible interventions in the livestock area. DAHP expressed particular interest in small ruminants and poultry. In addition, an assessment will be made of the forage agronomy and crop residue feeding programs. The Terms of Reference and the schedule for the Livestock Mission will be finalized during the coming quarter.

The Water Control Studies based in the Department of Water Resources have commenced in collaboration with the four non-pump irrigated rice development projects (SWMU, GTZ/Dept. of Water Resources, and FFHC). Field staff from these projects, with assistance from the ADP II Monitoring and Evaluation Unit, are collecting detailed production data in twelve study households spread throughout the project areas. The data collection began in mid-June after a one-week training workshop held at the PPMU. Field work will continue through the rainy season. Two field supervisors have been hired to assist with this effort. One PCV, Glen Langan, was assigned part-time to the Water Control Studies and PCVs from the SWMU are also assisting with data collection. As noted earlier, another GARD PCV, Patty O'Neil is assisting with data processing.

-22-

With reference to the small-scale pump-irrigated schemes, work has commenced on the development of a technical irrigation model which meets the design criteria defined in the workplan. Once the model is perfected, design variables can be manipulated to determine the effect of various options on the operating efficiency of the scheme. The model will be tested using empirical data from selected perimeters now in operation.

Dr. Joshua Posner, the Cropping Systems Agronomist under the GARD Project, visited Banjul for the second time from his current duty station in Dakar to participate in the preparation of the Annual Plan for 1986/87. Dr. Posner and his family arrived in The Gambia at the end of June to take up residence. He will be based at Yundum and will work with Mr. Solomon Owens, Mr. Saihou Taa1 and Dr. Tijan Jallow who are agronomists in DOA. He will also serve as a member of the Yundum-based Farming Systems Research Team for the Western portion of the country.

Mr. Jeff Wright, Research Associate in Agronomy arrived in The Gambia in early June for a stay of approximately three months to work with the Cultural Agronomy program at Sapu. Mr. Wright will also do some exploratory work on tied ridging.

A second Research Associate in Agronomy, Mr. Tom Remington, made a short visit to The Gambia in June en route to the U.S. from his current duty station in Togo. It is proposed that Mr. Remington will work with the Rice Agronomy Program based at Yundum beginning in mid-October, 1986.

VI. ON-FARM RESEARCH:

Demonstration/Trials Program: Plans were finalized for the On-Farm Trials and demonstrations for the 1986 season following the conclusion of the ARAB meetings at the end of March and follow-up meetings with the Extension Service at Jenoi in April. Approximately 200 trials and demonstrations are planned for the 1986 season under the auspices of DOA with support from the FAO Fertilizer Use Project, ADP II and the GARD Project. Discussions were also held with the Caisse Centrale Cotton Project, which operates in URD and MID south, on coordination among projects in the use of the extension service.

Detailed Data Collection for Demonstration Farmers' Own Fields': Detailed farm management data will be collected from the on-farm demonstration sites throughout The Gambia. Specific emphasis of the data collection is on the demonstration farmer's own field. The data will be used to quantify the differences in yields between the farmer's field and the demonstration plot, identify factors affecting these differences, measure technology transfers to the farmer's field and compare costs, returns and profits at the two locations.

23

In the latter part of April the goals and objectives of the exercise were refined, data collection procedures established and data input forms designed. In May the Extension Service's Subject Matter Specialists (SMSs) were trained in data collection procedures. In mid-June all District Extension Centers (DECs) were visited to train District Extension Supervisors (DESS) and trouble-shoot for problems in the data collection process. A village extension worker handbook and training materials were developed on the data collection procedures and distributed to all field workers and supervisors. A return trip to the DECs took place in late June/early July to check the first round of data coming in, answer questions and solve additional problems.

This effort is being organized by the ODA Farm Management Economist based at Sapu with the assistance of the FAO Agronomist and the GARD Project. GARD is providing the services of Dr. Neil Patrick for four weeks beginning in mid-June to assist with the training of Extension personnel who will be collecting the socioeconomic information. Detailed plans were also made for the data entry and processing with the assistance of the Peace Corps Volunteer assigned to the computer services, Patty O'Neil. Two other Peace Corps Volunteers will also work in the On-farm Trials Programs: Mr. David Gaines who is based at Jaruba Kunda URD and Mr. Glen Langan who is based at Sapu.

FSR/E: Two regional teams based at Yundum and Sapu, respectively, were established following the consultancy mission of Dr. Federico Poey in early May. The Regional FSR/E Teams have overlapping membership with the commodity research programs based at these stations and include representatives of PPMU and DAHP. In addition, four village-level teams were established in NBD, WD, MID and URD. Each village-level team includes a research assistant from DOA as well as representatives from the Extension Service, DOA, DAHP and PPMU. The village-level teams will be responsible for the day to day operations of the series of on-farm trials and investigations in the four locations. The village-level teams are supervised by the respective regional teams in the Western and Eastern portions of the country. The GARD Project specifically is assisting in the provision of transport and supplies for the regional and village-level teams. In addition, technical assistance is being provided in the form of the Chief of Party/Agricultural Economist, Cropping Systems Agronomist and the Research Extension Liaison Officer based at Sapu. The leadership of the Western Team is held by Mr. Solomon Owens, Agronomist at Yundum, and the Eastern Team is lead by Mr. Tom Senghore, who is head of the Cultural Agronomy program based at Sapu. The FAO Fertilizer Use Agronomist, Mr. Jens Kristensen, and the ODA Farm Management Economist based at Sapu, Mr. Duncan Boughton, are also providing considerable assistance and input into the On-Farm Trials Program.

As noted under training, 20 Gambians from various departments and three PCVs participated in the FSSP workshop on on-farm trials in April (see Training).

24

The Horticultural Unit continues to play a particularly active role in the On-farm Trials Program. During the quarter under review, two research officers from the Horticultural Unit, together with the STTA in horticulture Dr. John Caldwell, played important roles in the FSSP sponsored workshop on on-farm trials in April. This was followed by further field visits and the preparation of a detailed research plan for horticultural crops for the coming year in early May.

VII. PROMOTIONAL ACTIVITIES:

The Project is cooperating in providing complementary support to the existing program of demonstration trials which is being largely implemented by the Extension Service, DOA, with support from the FAO Fertilizer Use project. In this effort project personnel, notably the RELO at Sapu, the Crop Agronomist at Yundum and the COP/Agricultural Economist are collaborating closely with other projects, most notably the FAO Fertilizer Use Project and the ODA supported Farm Management Economist at Sapu. As discussed in the preceding section monitoring and data collection activities associated with the demonstration trials program is being coordinated with the regular training and monitoring program of the Extension Service.

VIII. PROSPECTIVE ACTIVITIES FOR THE COMING QUARTER:

Major attention during the coming quarter will be devoted to supporting the on-station and on-farm trials program for the current season. Supplies will continue to be procured for the research programs at Yundum and Sapu. Special attention will be given to the further development of procedures for the regional and village-level FSR/E teams which are in their first year of operation. Specific activities by project component are detailed below:

Project Administration: Recruitment and posting of project support staff for Yundum and Sapu will be completed. Renovations of offices and laboratories at Yundum will be finished and construction will commence on staff housing at Sapu. Additional computers and vehicles will be ordered and delivery commenced.

ARMS: The draft ARMS working group report will be completed and submitted to the IPC for review. A sub-group will commence detailed studies on financial and management practices and possible improvements. The Manpower survey will be finalized and distributed. Efforts to improve agricultural statistics will continue involving the training of PPMU staff (with support from FAO and USDA) and a further STTA mission by John Rowe.

Training: Short-term external training is planned in Water Management and Run-Off Methods, Horticulture, Animal Traction, and Soils Analysis

25

and Laboratory Management during the next quarter, and the three B.S. degree candidates will commence their programs in August.

On-Station/Component Research: Supplies and logistical support will continue to be provided to the various commodity programs at Yundum and Sapu. A STTA visit by Earl Gritton will take place in August. The Water Control Studies will initiate formal data collection for a set of case studies in each of several irrigation and water control projects. A livestock planning mission by two UW faculty members will take place in September in advance of the main mission scheduled for the end of the year.

Short-term training and study trips are envisaged in soils and animal traction. Arrangements will be made for a livestock mission in November/December in collaboration with a two-person planning team from Wisconsin in September.

On-Farm Research: Plans for the regional and village level FSR/E teams for the current season will be finalized. Monitoring and data collection associated with the demonstration trials program will continue. Two visits to Senegal are planned for members of the FSR/E regional teams.

Promotional Activities: Plans will be finalized for supporting maize cooking demonstrations and specific activities in the Extension Aids Unit.

ATTACHMENT A - GARD PROJECT STAFF

- I. Technical Assistance Staff:
 1. Dr. Elon Gilbert - Chief of Party, Farming Systems Economist (Cape).
 2. Mr. David Gibson - Project Administrator (Mile 7).
 3. Dr. Ibrahim Diallo - Research Extension Liaison Officer (Sapu).
 4. Dr. Joshua Posner - Cropping Systems Agronomist (Yundum).

- II. Research Associates:
 1. Ms. Christine Elias - Rural Sociologist/Water Control Studies (Dept. of Water Resources, Banjul).

- III. Support Staff:
 1. Bintu Nying - Administrative Secretary (Cape).
 2. Lawrence Bruce - Accountant (Mile 7).
 3. Connie Tucker - Training Coordinator (Cape).
 4. Deborah Touray - Secretary (Cape).
 5. Max Njie - Facilitator (Mile 7).

- IV. Peace Corps Volunteers:
 1. Mr. David Gaines - On-Farm Trials Supervisor (Jaruba Kunda, URD).
 2. Ms. Patricia O'Neil - Agricultural Economist/Computer Specialist (Mile 7/PPMU, Banjul).

- V. Short-Term Training Advisors/Consultants:
 1. Dr. John Caldwell - Horticulturist, Virginia Polytechnic Institute and State University (April 26 - May 18, 1986)
 2. Mr. John Rowe - Agricultural Statistics, University of Wisconsin (April 10 - May 4, 1986)
 3. Dr. Federico Poey - Farming Systems Agronomist/Seed Specialist, Agrico-Consultants (April 28 - May 3, 1986).

27

4. Dr. Matthew Dagg - Research Management, International Service for National Agricultural Research (April 22 - May 7, 1986)
5. Dr. Kenneth Shapiro - On-Campus Coordinator, University of Wisconsin (May 11 - June 4, 1986).
6. Dr. Michael Joshua - On-Campus Coordinator, Virginia State University (May 11 - June 1, 1986).
7. Dr. Neil Patrick - Agricultural Data Systems, Washington State University (June 14 - July 14, 1986).

New Additions to Resident Project Staff

1. Mr. Jeff Wright - Research Associate in Agronomy (Sapu) is based in the Department of Agriculture and is working with Tom Senghore, the Senior Scientific Officer at Sapu Research Station. He is assisting the Cultural Agronomy, Rice Improvement and Upland Crop Improvement Programs in On-Station research. Mr. Wright is currently a Research Assistant in Agronomy at the University of Wisconsin. Prior to that he was Assistant to the Maize Agronomist on the Semi-Arid Food Grain Research and Development Project (SAFGRAD) based in Burkina Faso. He took up residence at Sapu June 7, 1986. His special interest is tied ridging.
2. Mr. Glen Langan - PCV, Agricultural Economics, is based at Sapu in MID and works with the Farming Systems Research and Extension team there. With Gambian counterparts, he will participate in on-farm research activities which include demonstrations/trials in farmers' plots, data collection/analysis, and instruction on usage of computers and statistical software. Mr. Langan will also collect production and socioeconomic data from farmers cultivating rice in the Jahally Pacharr Small Project as part of the Water Control Studies.

ATTACHMENT B - REPORTS

GARD Project Reports:¹

1. "Consultancy Report on visits to The Gambia, 4 - 18 February, 1986 and 22 April - 6 May, 1986, to Assist the Working Group Prepare Proposals to Strengthen the Agricultural Research Management System (ARMS)" by Mathew Dagg (May 1986).
2. "Soil and Water Conservation Programs" by Fred Madison, (March, 1986).
3. "Strengthening Animal Traction Research And Development In The Gambia Through Networking: Annotated Bibliography of Animal Traction", by Paul Starkey (May 1986).
4. "Trip Report - Agriculture Statistics" by John S. Rowe, April 1986.
5. "Strategy to Strengthen The Farming Systems Approach to Research and Extension for The Gambia" by Federico Poey, May 1986.
6. "Agricultural Research Manpower Survey" by Patricia O'Neil, (Preliminary Report), June 1986.

Recent Reports from Other Sources:²

1. "Agricultural Financing In The Gambia" by Ebrima M. Mbow, B.S.B.A., MDI.
2. "Progress Report No. IV (Covering Period January - March, 1986)" by ADP II.
3. "Final Evaluation of Gambia Mixed Farming and Resource Management Project" by F. Corty (et al.) AID/Banjul, June, 1986.
4. "Leucaena: A potential Forage Crop For The Gambia" by S. L. Russo, MFP Technical Report No. 7.

¹Copies of final reports are available upon request from the secretary to the GARD Project, Department of Agriculture, Cape. Preliminary reports have a restricted circulation, but requests can be made for copies of the final versions when these are available.

²The list of recent reports from other sources is not intended to be exhaustive. Information on additional reports of relevance to agricultural research in The Gambia would be most welcome and should be addressed to the Chief of Party, GARD, Dept. of Agriculture, Cape.

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5. "The Cold Hard Realities Of Agricultural Development" by Clyde Eastman, MFP Technical Report No. 9.
6. "Mixed Farming In The Gambia" by J. Haydu, M. Alers-Montalvo, J.B. Eckert, F. Dumbuya, B. Gai, L. Jabang, MFP Technical Report No. 10, May 1986.
7. "The Use Of Crop Residues For Animal Feed In The Gambia" by Sandra L. Russo, MFP Technical Report No. 11, March 1986.
8. "The Use Of Crop Residues For Animal Feed In The Gambia" by Sandra L. Russo, MFP Technical Report No. 11, March 1986.
9. "Research In Forage Agronomy By The Mixed Farming Project, 1983-1986" by Sandra L. Russo and Bambo Ceesay, MFP Technical Report No. 12, May 1986.

ATTACHMENT C-1

GARD Participant - Quarterly Report
 April - June, 1986
 In-Country Training Activities

<u>Name of Trainee</u>	<u>Sex</u>	<u>Employer In The Gambia</u>	<u>Field of Training</u>	<u>Starting Date of Training</u>	<u>Est. Duration of Training (Months)</u>	<u>Ending Date of Training</u>	<u>Name of Institution Providing Training</u>
DARBOE, Momodou	M	Crop Protection Service	On-farm Trials	4/7/86	3 weeks	4/25/86	FSSP
DAHABA, Mbemba	M	Dept. of Agric.	"	"	"	"	"
JAITEH, Lamin	M	"	"	"	"	"	"
KANTEH, Ansumana	M	"	"	"	"	"	"
SANNEH, Sena	M	"	"	"	"	"	"
GAYE, Fatou	F	Dept. of Animal Health & Production	"	"	"	"	"
JANHA, Taylb	M	"	"	"	"	"	"
JOBE, Jaye	F	"	"	"	"	"	"
THOMAS, J.E.O.	M	"	"	"	"	"	"
FATAJO, Sarjo	M	Dept. of Forestry	"	"	"	"	"
JALLOW, Yaya	M	Program Planning & Monitoring Unit	"	"	"	"	"
Gaines, David M	M	GARD/DOA	"	"	"	"	"
Marcin, Michael M	M	"	"	"	"	"	"
O'Neil, Patricia F	F	"	"	"	"	"	"

*119 Gambians and Peace Corps Volunteers were trained in data collection for the Gambia Agriculture Data Svstems (GADS)

ATTACHMENT C-2

GARD Participant - Quarterly Report
 April - June, 1986
 Degree Training

<u>Name of Participant</u>	<u>PIO/P Number</u>	<u>Sex</u>	<u>Employer In Gambia</u>	<u>Field of Training</u>	<u>Starting Date of Training</u>	<u>Est. Date of Degree Completion</u>	<u>Ending Date of Training</u>	<u>Location of Training</u>	<u>Degree Goal</u>
COLE, Mohammed	635-50028	M	Dept. of Agriculture (GOTG)	Agronomy	1/9/86	12/88		University of Wisconsin, Madison, Wisconsin	M.S.
MBENGA, Musa	635-50027	M	Dept. of Agriculture (GOTG)	Agronomy	1/9/86	1/1/88		Cornell-Ithaca, N.Y.	M.S.

ATTACHMENT C-3

GARD Participant - Quarterly Report
 April - June, 1986
 Technical Training - U.S.

<u>Name of Participant</u>	<u>PIO/P Number</u>	<u>Sex</u>	<u>Date of Birth</u>	<u>Employer in The Gambia</u>	<u>Field of Training</u>	<u>Starting Date of Training</u>	<u>Est. Duration of Training (Months)</u>	<u>Ending Date of Training</u>	<u>Name of Institution Providing Training</u>	<u>Location of Training</u>
SEY, Mounour	635-50031	M	7/21/51	Dept. of Agr. (GOTG)	Horticulture	6/21/86	1 week		Washington International Center	Washington, D.C.
"	"	"	"	"	"	6/30/86	8 weeks		Rutgers .	New Brunswick, N.J.

THE
GAMBIA
AGRICULTURAL
RESEARCH
AND
DIVERSIFICATION
PROJECT
(GARD)

QUARTERLY REPORT NO. 3
July-September, 1986

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
I. Overview	1
II. Project Administration	2
III. Agricultural Research Management System	3
A. ARMS Working Group	3
B. Research Manpower Survey	3
C. Agricultural Statistics	3
D. Research Support and Computer Facilities	3
IV. Training/Networking	5
V. On-Station/Component Research	6
A. Agronomy & Soils	6
B. Livestock	7
C. Water Control Studies	8
VI. On-Farm Research	8
VII. Promotional Activities	9
VIII. Prospective Activities for the Coming Quarter	10
Attachment A - GARD Project Staff	12
Attachment B - Reports	14
Attachment C - Training and Networking	16

I. OVERVIEW:

The third Quarterly Report of The Gambia Agricultural Research and Diversification Project (GARD) covers the period July - September, 1986. Highlights of the period under review include the following:

- Finalization of the Annual Workplan and approval by the Interim Project Committee (IPC) and USAID.
- Further consolidation of project administration and rehabilitation/establishment of office space at Cape, Mile 7, Yundum and Sapu.
- Completion of the Working Group Report on the Agricultural Research Management System (ARMS) and its acceptance by the Interim Project Committee (IPC). Implementation of selected recommendations will commence this year.
- The first group of bachelor degree candidates for training under the program commenced their programs at the University of Wisconsin.
- Short-term training visits to Wisconsin were made by Gambian research personnel in agricultural statistics, soils and horticulture, Short-Term Training Advisors (STTAs) in agronomy, agricultural statistics and livestock visited The Gambia.
- On-Station and On-Farm trials programs commenced in July with the arrival of the rains. A major portion of the resources and energies of the project were in support of the trials program.
- Special attention was given to the activities of the two regional Farming Systems Research and Extension (FSR/E) teams and four district level teams located in URD, MID south, NBD, and WD.
- The Water Control Studies continued with the collection of data at several locations.
- A Livestock Planning mission from the University of Wisconsin arrived in September.

As noted in Quarterly Report No. 2, GARD is continuing to collaborate with other projects concerned with agricultural research and development, notably, ADP II, SWMU, the FAO Fertilizer Use Project, ODA-supported activities at Sapu and various PVOs.

II. PROJECT ADMINISTRATION:

The IPC met in August and approved the 1986/87 Annual Workplan for the Project in addition to considering the ARMS Working Group Report (see Section III).

Administrative efforts during the first half of the third quarter focused primarily on the procurement of equipment and supplies. By the end of September, most of the major capital purchases had been made, and the flow of material and supplies to the field had been routinized. No other major equipment purchases are anticipated for the balance of the year with the exception of some harvesting equipment.

Administrative problems at the University of Wisconsin delayed approval of bids for housing construction at Sapu, but construction should commence in the next quarter. The terms of the tender award specify a one month mobilization period, followed by six months of construction time. Projected date of completion is the first week of May, 1987. Interim housing for the Research Extension Liaison Officer (RELO) at Sapu is being arranged.

Approval for construction of the Cape offices was obtained, and the tender process will be completed by the end of the fourth quarter. Construction time is estimated at four to five months from that date. A storage warehouse has been rented in Kanifing which will also serve as a workshop for the mechanics.

Extensive renovations were completed on the offices and stores at the Yundum Agronomy Unit and at Sapu. Work on the Yundum Horticulture Unit facilities is in progress. Renovations were initiated at Somita and Njabakunda for the FSR/E District Level Teams.

Personnel in place at the end of the quarter include storekeepers, secretaries, administrative assistants at Yundum and Sapu, a computer operator and mechanics. Mile 7 staff added a junior accountant and vehicle coordinator. No additions to the staff are anticipated at this time.

Policies and procedures for all stations and Cape office are now implemented.

The Chief of Party visited the University of Wisconsin in July for discussions with the International Agricultural Programs office and departments participating in the GARD project.

III. AGRICULTURAL RESEARCH MANAGEMENT SYSTEM (ARMS):

A. ARMS Working Group:

A draft of the ARMS Working Group Report was completed following the return of the Assistant Director of Agriculture for Research from ISNAR in early-July. The draft was circulated to Working Group members and research staff for comments. The IPC accepted the report and authorized the implementation of selected recommendations. A sub-group to study financial management and administrative dimensions of ARMS was established composed of representatives of the Ministries of Agriculture Water Resources and Environment, Finance, Economic Planning and Industrial Development, in addition to the Management Development Institute (MDI) and the GARD project. The sub-group will commence its work during the coming quarter.

B. Research Manpower Survey:

Results of the Research Manpower Survey of six GOTG Departments were provided to the ADP II's Manpower Planning Consultant, and PPMU's Manpower Planning Coordinator. PPMU plans to use the survey results to supplement information they are collecting on the qualifications of all employees in the Ministries of Agriculture and Water Resources and Environment.

C. Agricultural Statistics:

Cobe Johnson and John Rowe of the University of Wisconsin conferred with Yaya Jallow, Acting Statistician from the PPMU, while he was attending the "Data Systems for Developing Countries" short course in Madison. Although Jallow's training was sponsored by UN/FAO, the three had the opportunity to analyze several data sets from the 1985/86 National Agricultural Sample Survey (NASS). Baboucar Gai, Head of the Farm Economics and Statistics section of PPMU, visited Madison briefly in late July while attending a USDA short course on agricultural survey in Colorado. Discussions were held with the GARD COP (Elon Gilbert) and On-Campus Coordinator (Ken Shapiro) in addition to Rowe, Johnson and Jallow on plans for improving agricultural statistics in The Gambia.

Rowe traveled to The Gambia on September 11 for a four-week STTA mission designed to provide a mid-survey review of the 1986-87 NASS.

D. Research Support And Computer Facilities:

The temporary research support facility at the Mile 7 offices has been established and is fully operational. Two IBM XTs, one IBM Portable PC and two printers have been installed, and essential equipment and supplies have been stocked.

The facility is currently equipped to handle word processing, accounting/spread sheet manipulations, simple data manipulations and data management, agronomic data analysis, farm budget analysis, and Basic programming. Several additional statistical software packages are expected in the near future which will substantially enhance the facility's potential to perform more complex types of analyses.

The project areas providing the largest bulk of the workload at the facility at the present time are the Department of Agriculture's On-Farm Demonstrations, which are supported by the FAO Fertilizer Use Project, and the farm budget component of the Water Control Study. Preliminary programming for both of these projects has been completed and field data are being processed.

A review team consisting of representatives of GARD and PPMU was established in July to examine the potential for coordinating GARD and PPMU computer facilities and activities, specifically, ways in which staff and facilities could be efficiently utilized to serve the needs of PPMU and the five other departments concerned with agricultural research. The review team's efforts resulted in the following actions and agreements:

- GARD provides support to PPMU's computer facility in terms of hardware maintenance and supplies.
- GARD provides training programs which focus on the specialized needs related to computer use. The training component emphasizes three areas: support staff in-country training, senior staff in-country training, and long- and short-term overseas training of PPMU computer specialists.
- Computer time/facilities and computer specialist staff are shared between PPMU and GARD, and reciprocal support provided in the event of peak load difficulties or mechanical failures.

Requests from PPMU for hardware maintenance, and supplies have been filled or are currently on order. A training program beginning with training of support staff has commenced. Instances in which reciprocal technical support was required have successfully been coordinated.

A field supervisory team composed of Duncan Boughton (ODA); Nyada Baldeh, Extension Training Officer (DOA); Mohammad Kabay, Agricultural Economist, DOA; Patricia O'Neil and Glen Langan, Peace Corps Volunteers, was established in July to visit trial sites and monitor the data collection for the adapted GADS system. Before site treks commenced, a field supervisor's questionnaire was devised to measure data reliability for the different types of analyses planned. Where the minimum requirements for data reliability were met, additional site information was collected, i.e., physical site characteristics, qualitative variables, variables indicating the type of farming system. The first round of supervisory treks has been completed at

all sites. Additional site visitations are being concentrated on those crops which are targeted for emphasis in analysis, namely, maize and groundnuts.

Discussions were held to coordinate the analysis of the GADS farm budget data, qualitative data, physical site data and data from the Extension Service's farmer field day questionnaires. Computer programs for the farm budget aspects of the analysis were finalized in July. Other programming has been suspended pending a final draft of the analysis plan.

IV. TRAINING/NETWORKING:

As planned during the second quarter, Directors of Departments involved in agricultural research were contacted to provide a breakdown of their departmental training needs as part of the continuing effort to refine training priorities. In addition, expansion of the Research Manpower Survey was initiated to include training presently underway, planned training, and a closer look at participation in in-country/external conferences and workshops.

As noted in the previous section, a review team for PPMU/GARD computer facilities/activities identified training needs for support staff and research scientists. Their recommendations include in-country training for support staff and research scientists, and short- and long-term external training for two PPMU computer specialists. The in-country training of support staff commenced during this quarter; while the recommendation for external training of two PPMU Computer Specialists awaits consideration by the Training Committee.

A plan for in-country, short-term and external training was finalized as part of the Annual Workplan exercise.

A comprehensive training plan in the animal sciences awaits the results of the Livestock Planning Workshop scheduled for December.

Short-term external training conducted during this quarter included U.S. based training in Horticulture and Vegetable Crop Production and Marketing (G.O. Gaye and Momar Sey, respectively); Water Management and Run-Off Methods (Fatou Jasseh); and Soils Analysis and Laboratory Management (Musa Ann); and Animal Traction in Sierra Leone (Sidi Jarju, Alphu Marong, and Dawda Sarr).

The three B.S. candidates (Ebrima Camara, Amidou M'Ballo, and Kemoring Trawalley majoring in Agricultural Statistics, Cereals Agronomy, and Oilseeds Agronomy, respectively) commenced their programs at the University of Wisconsin. Musa M'benga is making good progress in his M.S. program at Cornell University. Mohammed Cole's program at the University of Wisconsin was temporarily interrupted due

to medical problems, but he will hopefully be able to resume his studies next quarter.

Several Gambian researchers from DOA and PPMU visited the Djebelor Research Station in Cassamance primarily to exchange ideas on FSR/E activities. They were accompanied by Josh Posner (Cropping Systems Agronomist) and Ibrahim Diallo (RELO) both from the GARD project.

The Assistant Director of Agriculture/Research visited ISNAR in early July to work on finalizing the ARMS Working Group Report.

V. ON-STATION/COMPONENT RESEARCH:

A. Agronomy and Soils:

The trials program got underway in July with the arrival of the rains. However, some of the trials, particularly the cereals, had to be replanted because of low rainfall during July. The GARD project assisted all the research programs in the Department of Agriculture by acquiring supplies and equipment as well as providing transport and general logistical support complementing the efforts /contributions of other projects, notably ADP II and the FAO Fertilizer Use Project. Administrative and secretarial support services were strengthened and office facilities improved at both Sapu and Yundum. The programs receiving support at the present time include the Upland Crop Improvement, Soil Fertility, Rice Agronomy, Cultural Agronomy, Forage Agronomy and Grain Legume Improvement. These programs conduct trials at both Sapu and Yundum as well as several other locations throughout the country. The trials include both those designed by the national programs as well as several trials from regional organizations and international centers such as CILSS, SAFGRAD, SIMET, WARDA, IITA and ICRISAT. Intercropping trials looking at maize/cowpea, sorghum/cowpea early-cereal/late-cereal and groundnut/maize were also planted. The new cowpea program at Yundum includes a cowpea varietal trial and several agronomic studies on row spacing, fertilizer rates and flat vs. tied ridges.

Technical assistance to the Agronomy Research programs is being provided by Dr. Josh Posner, Cropping System Agronomist, who began a long-term assignment with the project at the end of the last quarter. Dr. Posner is based at Yundum in the Agronomy Lab and is counterpart to Dr. Tijan Jallow, head of the Grain Legume Research program and currently head of Agronomic Research at Yundum. A research associate in agronomy, Mr. Jeff Wright from the University of Wisconsin, completed the first portion of his assignment at Sapu assisting the Cultural Agronomy program and returned to Wisconsin to continue his course work toward a Master's degree. It is anticipated that he will return for a full year beginning in June 1987.

Professor Earl Gritton of the Agronomy Department of the University of Wisconsin reviewed the progress of the 1986 trials programs at Sapu and Yundum in August as a follow-up to his participation in the ARAB meetings in March. His report, which contained detailed recommendations on future activities in the Upland Crop Improvement and Cultural Agronomy programs in particular, has been received and will be reviewed during the coming quarter.

The soil fertility program is studying source x residual effects of phosphorous and timing of nitrogen additions on maize. In addition the project is assisting improvements in the soils lab at Yundum with the provision of training, technical assistance and supplies and equipment. As a follow-up to the STTA visits of Emmett Schulte and Fred Madison in March, Musa Ann, the head of the Soils Lab, travelled to Wisconsin to begin a specially tailored four-month training program. Discussions commenced on the possible integration of the staffs of the Soils Analysis Lab with the Forage Lab based at Abuko.

B. Livestock:

Activities during this quarter were devoted to preparations for a workshop scheduled for December 1986, which will generate a detailed plan for research and training in animal production and health. The Department of Animal Health and Production (DAHP) specified small ruminants, poultry and draft animals as areas in need of additional research support and designated four staff members--Omar Touray, Tayib Jahna, Patricia Andrews and Jebel Sowe--to participate in preparations for the workshop. Jane Homan, who joined the Office of International Agricultural Programs at the University of Wisconsin in July, initiated a review of literature on small ruminants and poultry research to identify successful technologies investigated at other sites in West Africa and elsewhere which have potential applicability in The Gambia. Needs for information on which to base identification of constraints and research priorities on small ruminants and poultry production were detailed. Research sites in West Africa were identified which would offer useful networking support to Gambian scientists and potentially offer training opportunities. Initial inquiries were made concerning the feasibility of visits prior to the workshop.

Drs. Jane Homan (Program Coordinator), University of Wisconsin and Thomas Yuill (Associate Dean for Research and Graduate Training/Assistant Director, Agricultural Experiment Station), University of Wisconsin, visited The Gambia September 15 through October 4 to confer with Gambian counterparts in DAHP to assess the in-country infrastructure available to support on-station and on-farm research; initiate information gathering on sheep, goat and poultry production at the village level; and work out detailed plans for the December workshop. Together with DAHP staff they visited various sites throughout the country to initiate information collection. DAHP staff will continue this effort during the coming quarter and complete it prior to the December workshop.

42

C. Water Control Studies:

The impact assessment of non-irrigated rice development projects continued during this quarter. Collection of detailed production data in 12 case study households within these project areas is progressing satisfactorily and will continue through the harvest. With assistance from SWMU and the Department of Water Resources (DWR/GTZ Swamp Reclamation Project), area measurements of all rice and upland crop fields within these households is about 70 percent complete, and field workers have begun weighing produce from these fields. Computer data entry will began in October.

An informal survey designed to place the 12 case study households into a broader farming system context was also initiated during this quarter. An interview guideline was field tested and revised with assistance from members of the Yundum FSR/E steering committee. The survey began in MID in collaboration with the Farm Management Economist (DOA/Sapu) and the Farming Systems Economist (Jahally Pacharr Project).

Work on the irrigated rice component of the study has come to a standstill due to the resignation of the DWR Irrigation Engineer assigned to the studies. Unfortunately, no information on the technical irrigation model initiated by the engineer is available. The original workplan was designed so that the GARD sociologist would focus on the non-pump irrigated rice sector while the irrigation engineer would concentrate on the pump-irrigated sector. As a result, the sociologist planned and implemented her program before the departure of the engineer, so the continuation of the pump-irrigation component is now in question. Discussions with the Director of DWR are continuing to see if a solution can be found, although the department is extremely short of senior staff at the present time.

VI. ON-FARM RESEARCH:

Priority attention during the quarter was devoted to the operations of the two regional farming systems teams based at Yundum and Sapu respectively which oversee the activities of four village level teams operating in the districts of Central Badibou (NB), Foni Brefet, Foni Bintang, Fuladu-West and Fuladu-East. In addition the project provided assistance to data collection and analysis activities for the nationwide demonstration trials program supported by the FAO Fertilizer Use project (see section II.D - Research Support and Computer Facilities).

Although the activities of the two regional FSR/E teams differ somewhat, their programs both consist of four general components: survey work, trials, mapping and assembling secondary data. The district level teams are participating in the two national surveys being conducted by the Extension Services, namely the studies of yield

gap and farmer attitudes. In the two pilot areas in the west, survey work (including a farming systems zoning exercise, as well as a groundnut and millet agronomic survey) was initiated in 10 villages per area. As of the end of the quarter, the groundnut survey was completed and the other surveys were well underway.

The district extension center demonstration trials and the FSR/E trials (on-farm trials designed at the FSSP workshop in April) were planted during the quarter at each of the four locations. The major themes deal with maize varieties x fertilizer levels, groundnut varieties x type of fertilizer and intercropping of cereals (early millet, late millet, early sorghum, late sorghum, maize) and legumes (groundnuts and cowpeas). In the Foni Brefet district a catch-crop trial was designed in early August to address the problem of what to plant at that late date when the summer rains had finally begun. The trial compares two varieties of groundnuts with sesame, maize and early sorghum.

With the help of the soil survey team in SWMU 1:10 scale soil maps of two villages (Kassagne and Kajabina) in Western Division have been drawn. These maps will serve as tools for the better understanding of the lowland and upland cropping systems.

Rainfall, soil associations, land use and population data have been collected for the pilot areas. This data will be used in preparing a short profile of each district. The secondary information and surveys will assist in interpreting the results from the trials program this year as well as provide a basis for the design of an adaptive research program for each area beginning in 1987. An additional survey on livestock will be conducted during the coming quarter.

As noted under the training/networking section, a group of Gambian researchers visited with Senegalese colleagues in the Cassamance on FSR/E activities.

VII. PROMOTIONAL ACTIVITIES:

Preliminary discussions of possible support for promotional activities continued with various departments and PVO's. Although pilot promotional activities are expected to grow out of the current set of FSR/E activities, there is already fairly good geographic and commodity coverage of the country by various GOTG and PVO extension programs. This is more true of the crops than of livestock, however, and some limited promotional work may well grow out of the expanded research efforts in small ruminants, poultry and draft animals being planned for 1987.

VIII. PROSPECTIVE ACTIVITIES FOR THE COMING QUARTER:

The following activities are envisaged for the coming quarter.

1. Administration: Construction of the houses at Sapu will commence and tenders for the construction of the Cape Office facility will be drawn up.
2. ARMS: A cabinet memorandum will be prepared and submitted to Cabinet establishing the National Agricultural Research Board (NARB) and its Technical Secretariat. The subgroup on financial administration will initiate activities under ARMS and submit a draft report in December.
3. The Agriculture Research Manpower Survey will be expanded to include additional information on training. Investigations of available Programming and Budgeting System computer software will begin.
4. Training: The Training Committee will review the results from the expanded Research Manpower Survey along with the projected departmental training needs and make recommendations to the IPC to further refine training priorities during the next quarter. Short-term external training during the fourth quarter will be limited since most researchers will be harvesting their on-station/on-farm trials and completing data collection. The livestock in-country workshop will be conducted in December.
5. Networking: The Yundum Crop Improvement Agronomist is to travel to IITA (Nigeria) and SAFGRAD (Burkina Faso) in November.
6. On-Station Component Research: The harvesting of trials will be completed; data entry and analysis will start. The dry season horticultural trials will be planted.
7. Mr. Tom Remington, Research Associate in Rice Agronomy based at Yundum, will arrive for a two-year tour in November.
8. A livestock workshop to plan future research activities in country, small ruminants, drought animals and forage agronomy will take place in December involving joint participation from DAHP, ITC, DOA, PPMU and the Universities of Wisconsin and Virginia State.
9. Production data collection for the Water Control Studies should near completion, and some preliminary data verification and analysis initiated. Information needed for the benefit-cost analysis of each project will be collected. Field work for the classification of Gambian rice ecologies will be carried out. Data entry should be completed and analysis initiated.

45

10. On-Farm Research: The on-farm trials will be harvested; data entry and analysis of results will proceed. Survey activities at FSR/E sites will continue and reports will be issued. A meeting of the national FSR/E group is scheduled for December 22 to review the experiences of the past season and discuss plans for the coming season.

. 46

ATTACHMENT A - GARD PROJECT STAFF

I. Technical Assistance Staff:

1. Dr. Elon Gilbert - Chief of Party, Farming Systems Economist (Cape).
2. Mr. David Gibson - Project Administrator (Mile 7).
3. Dr. Ibrahim Diallo - Research Extension Liaison Officer (Sapu).
4. Dr. Joshua Posner - Cropping Systems Agronomist (Yundum).

II. Research Associates:

1. Ms. Christine Elias - Rural Sociologist/Water Control Studies (Department of Water Resources, Banjul).

III. Support Staff:

1. Bintu Nying - Administrative Secretary (Cape).
2. Lawrence Bruce - Administrative Assistant (Mile 7).
3. Connie Tucker - Training Coordinator (Cape).
4. Ibrahima Jarboh - Accountant (Mile 7).
5. Deborah Touray - Secretary (Cape).
6. Max Njie - Facilitator (Mile 7).
7. Jainaba Saïdy - Secretary (Sapu).
8. Ebrima Njie - Administrative Assistant (Sapu).
9. Manochehr Timajchy - Computer Specialist/Technician (Mile 7).

IV. Peace Corps Volunteers:

1. Mr. David Gaines - On-Farm Trials Supervisor (Jaruba Kunda, URD).
2. Mr. Glen Langan - Agricultural Economist /On-Farm Trials Supervisor (Sapu).

3. Ms. Patricia O'Neil - Agricultural Economist/Computer Specialist (Mile 7).

V. Short-Term Training Advisors/Consultants:

1. Earl Gritton - Agronomy, University of Wisconsin (August 8 - August 22, 1986).
2. Mr. John Rowe - Agricultural Statistics, University of Wisconsin (September 15 - October 11, 1986).
3. Dr. Tom Yuill - Livestock Planning Mission, University of Wisconsin (September 15 - September 30, 1986).
4. Dr. Jane Homan - Livestock Planning Mission, University of Wisconsin (September 15 - October 4, 1986).

- 48

ATTACHMENT B - REPORTS

GARD Project Reports:¹

1. "Current Research on Agronomy and Soils: Report on GARD Consultancy In The Gambia," August 6 - August 23, 1986, by Earl Gritton

Recent Reports from Other Sources:²

1. "Review of Research Results, 1981 - 1985," Department of Agriculture, Agricultural Research Service, June 1986.
2. ARMS Working Group Report
3. "Second Agricultural Development Project (ADP II) Progress Report No. V, 9 April, May, June, 1986" by Ministry of Agriculture.
4. "Department of Agriculture 2nd Bi-Monthly Workshop On The Training And Visit System Report," July, 1986.
5. "A Report on the Poultry Farming Workshop jointly organized by the Department of Animal Health And Production and Gambia Cooperative Union and sponso ad by The Ministry of Agriculture held on Saturday, 9th August, 1986 at the Management Development Institute."
6. "The Gambia Cattle Herd: A Survey Report" by Vesseur, Peter, E.J. Hurkens, Jerry Eckert, Jeanne C. Crouch, and Laurens Mol, 1986, MFP Report No. 13.
7. "Final Report-Range Ecology Component" by Scotty Deffendol, MFP Technical Report No. 14, May 1986.
8. "Final Report of the Gambian Mixed Farming and Resource Management Project" by Glen D. Fulcher, Jerry B. Eckert and the Mixed Farming Team.

¹ Copies of final reports are available upon request from the secretary to the GARD Project, Department of Agriculture, Cape. Preliminary reports have a restricted circulation, but requests can be made for copies of the final versions when these are available.

² The list of recent reports from other sources is not intended to be exhaustive. Information on additional reports of relevance to agricultural research in The Gambia would be most welcome and should be addressed to the Chief of Party, GARD, Department of Agriculture, Cape.

9. "Agricultural Mechanization Service Assessment for The Ministry of Agriculture in The Gambia," by U.S.A.I.D./Food and Agriculture Organization.
10. "Cotton Development Project Annual Report, 1985/86" by F. Gaudin, April 1986.
11. "Comments on a Consultancy Mission Report Entitled Strengthening Animal Traction Research and Development In The Gambia Through Networking" by Papa A. Cham, Chief Agricultural Engineer, Department of Agriculture, August 1986.
12. "The Agricultural Engineering Unit's Work Programme for Mechanization of Crop Production, Processing And Storage", by Papa Cham, Chief Agricultural Engineer, Department of Agriculture, 24th September, 1986.
13. "Report on the Stage II Reconnaissance Survey by the Yundum FSR/E Team to Identify Horticultural Research Priorities" March 10th - 14th, 1986.
14. "The Gambia Rice Development Project Preparation Report" by FAO, African Development Bank Cooperative Programme - Investment Centre, July 31, 1986.
15. "The Gambia Integrated Small Farmer Horticultural Development" by Commonwealth Secretariat, 1986 (n.d.).

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Attachment C-1

Third Country Training Activities
GARD Project
Date

<u>Name of Participant</u>	<u>PIO/P Number</u>	<u>Sex</u>	<u>Date of Birth</u>	<u>Employer in The Gambia</u>	<u>Field of Training</u>	<u>Starting Date of Training</u>	<u>Est. Duration of Training(months)</u>	<u>Ending Date of Training</u>	<u>Name of Institution Providing Training</u>	<u>Location of Training</u>
Barju, Midi M.	635- 0219- 1-50046	M	07/21/46	Soil & Water Management Unit	Animal Traction	9/19/86	2 Weeks	10/02/86	FSSP/Sierra Leone Work Oxen Project	Sierra Leone
Barong, Alpha J.	635- 0219- 1-50046	M	07/21/46	Dept. of Agriculture	Animal Traction	9/19/86	2 Weeks	10/02/86	FSSP/Sierra Leone Work Oxen Project	Sierra Leone
Barrr, Lawda	635- 0219- 1-50045	M	11/22/33	Dept. of Agriculture	Animal Traction	9/19/86	2 Weeks	10/02/86	FSSP/Sierra Leone Work Oxen Project	Sierra Leone

Attachment C-
Networking Activities
GARD Project
Date

Name of Research Scientist	Sex	Employer in The Gambia	Starting Date	Ending Date of Visit	Purpose/Location
M.O.S. Jammeh	M	PPMU*	14/7/86	20/7/86	Visit FSR/E Researchers, Tour Farms/ Research Station, Djebelor Research Station, Cassamance, Senegal.
Albert Cox	M	DOA**	21/8/86	23/8/86	Same as above.
Alphu Marong	M	"	"	"	" " "
Tom Senghore	M	"	"	"	" " "
Saihou Taal	M	"	"	"	" " "
Ibrahim Diallo	M	DOA/GARD	"	"	" " "
Joshua Posner	M	" "	"	"	" " "
M.S. Sompo-Ceesay	M	DOA	6/23/86	7/7/86	Finalize ARMS Report ISNAR, The Netherlands

*PPMU - Program Planning & Monitoring Unit

**DOA - Department of Agriculture

THE
GAMBIA
AGRICULTURAL
RESEARCH
AND
DIVERSIFICATION
PROJECT
(GARD)

QUARTERLY REPORT NO. 4
October-December, 1986

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
I. Overview	1
II. Project Administration	2
III. Agricultural Research Management System	3
A. ARMS/FARMS	3
B. Agricultural Statistics	5
C. Research Support and Computer Facilities	5
IV. Training and Networking	7
V. On-Station/Component Research	7
A. Agronomy & Soils	7
B. Livestock	8
C. Water Control Studies	9
D. Marketing	9
VI. On-Farm Research	10
VII. Promotional Activities	11
VIII. Prospective Activities for the Coming Quarter	12
Attachment A. GARD Project Staff	14
Attachment B. Reports	17
Attachment C. Training & Networking	18

I. OVERVIEW

The fourth Quarterly Report of the Gambian Agricultural Research and Diversification Project (GARD) covers the period October through December 1986, and marks the halfway point of the implementation of the First Annual Work Plan for 1986/87. Highlights of the period under review include:

1. Preparation of a memorandum to Cabinet establishing the National Agricultural Research Board (NARB) and the technical secretariat.
2. Preparation of a report by the Working Group on financial and administrative research management (FARMS).
3. Conclusion of the 1986 on-farm and on-station trials program with the harvesting of trials and the commencement of data processing and analyses.
4. Surveys in the FSR/E pilot areas by regional and district level teams.
5. Establishment of multidisciplinary task forces to review the individual crop research programs and make recommendations on research priorities.
6. A major effort to define research programs in livestock with specific reference to poultry, small ruminants, draft animals and forage culminating in a three-week livestock workshop in Banjul in December.
7. Arrival of the Research Associate in Rice Agronomy to begin a two-year tour based in Yundum.
8. Missions by short-term training advisors (STTA) in agricultural statistics, library science, financial administration and research management, horticultural marketing, and various livestock fields.
9. Networking and short-term training visits by Gambian researchers to Wisconsin, and agricultural research centres in the region.

In addition, the Director of Agriculture and the Director of Forestry visited the University of Wisconsin and Virginia State University as part of a trip to the U.S. supported primarily by UNDP.

II. PROJECT ADMINISTRATION

Construction of the three staff houses at Sapu began in October. By the end of the quarter the first two of five payments for the construction were authorized. The second of three payments to the architectural firm was also authorized. The Sapu site was prepared; house floors poured; outside and inside supporting walls put up; and the foundation for the generator house was finished. Progress to date is consistent with the scheduled completion date of April, 1987.

Tenders for architectural and supervisory services on the Cape Office complex were let. Only one firm tendered. The firm was selected because of a satisfactory history of completing previous USAID projects and a reasonable price. Final plans will be completed in the first quarter of 1987, and tenders for construction will be let.

Improvement to the Yundum Soils Lab and Horticultural Unit offices continued and are expected to finish in early 1987. Major purchases during the quarter consisted of agricultural implements for the 1987 growing season and a limited number of motorcycles and mopeds for the field teams and new Peace Corps Volunteers.

Assistance to the management of the Yundum and Sapu Stations continued in the form of administrative staff provided by the Project. The GARD Project Administrator, David Gibson, participated in the committee on financial and Administrative Research Management (FARMS) which is discussed in the following section.

In October, Loretta Erdahl, Accountant in the International Agricultural Programs Office at Wisconsin, spent two weeks in The Gambia to work with GARD personnel on computerizing the local payroll and receipt processing system. This computerization saves considerable time and facilitates the rapid replenishment of the imprest account required to prevent overdrafts. UW has given delegated purchasing authority to GARD/Banjul for commodities outside the US. This will expedite purchases and payments to vendors since payment can be made on delivery instead of waiting for a check sent from UW.

Wisconsin has initiated a series of monthly meetings of all GARD related personnel at Madison; including i) Gambian trainees and Research Associates (RAs) on campus; ii) faculty STTAs; iii) other faculty who provide backstopping in the participating departments; and iv) International Agricultural Programs administrative staff working on the project. The meetings have three objectives: i) to keep everyone up to date on the latest project activities; ii) to receive detailed debriefing from recently returned STTA's and RAs; and iii) to review plans for forthcoming STTA missions.

The October meeting was attended by the Chief of Party Elon Gilbert, and the Directors of Agriculture and Forestry in the course of visits to Madison. Sankung Janneh, Director of Agriculture, and

Bye-Mass Taal, Director of Forestry, met with the Dean of the College of Agriculture and Life Sciences and other Wisconsin staff associated with the GARD Project. In addition, they held meetings with the Gambian trainees at UW. Bye-Mass Taal also met with Forestry staff and toured the Forest Products Laboratory. The Director also visited VSU.

III. AGRICULTURAL RESEARCH MANAGEMENT SYSTEM (ARMS)

A. ARMS/FARMS WORKING GROUPS

As noted in the last Quarterly Report, the Interim Project Committee (IPC) accepted the report of the ARMS Working Group and directed the group to proceed with its implementation. A cabinet memorandum was drafted on the establishment of the National Agricultural Research Board (NARB) which would consist mainly of senior users of research results including: the Permanent Secretaries of the Ministries of Agriculture, Water Resources and MEPID; the Managing Director of GPMB; Chief Executive National Investment Board; General Manager, Gambia Cooperative Union; Chairman of the Gambia Chamber of Commerce and an independent Chairman appointed by the Minister of Agriculture. The main duties of NARB would be to:

1. Advise the Ministers concerned with agricultural development on all matters connected with the organization and execution of research in agriculture, livestock production, fisheries, forestry and agro-industry;
2. formulate the national agricultural research policy and priorities in support of national development objectives and advise the Ministers concerned in the financial, manpower and physical resources implications of implementing approved research programs efficiently and effectively; and
3. recommend the allocation of resources to high priority areas for research and review the research programs developed in response to these priority guidelines.

The memorandum also provides for the establishment of a Technical Secretariat to serve the Board composed of at least one full-time senior staff member with research experience. The memorandum will be formally submitted to Cabinet in early 1987.

A committee set up to study the financial and administrative dimensions of agricultural research management met several times during the quarter and submitted their report. The committee was chaired by Mr. Ebrima M'Bow of MDI and membership includes: James Shorten (Sahel Regional Financial Management Project); David Gibson (GARD); Ada Faal (MOA); and James Davis (MOF). The FARMS (Financial

and Administrative Research Management System) committee was assisted by Charles Steedman from the Center for Research on Economic Development, University of Michigan, who spent four weeks in The Gambia in October and November on a STTA mission. The report's recommendations include:

1. NARB approved research program funds in amounts adequate to accommodate seasonal variations in need, so as to insure timeliness of expenditure availability on a year-round basis.
2. Decentralization of purchasing authority for other than salaries and allowances to a senior administrative person in the research service for LPOs initiated at the Station or Departmental level.
3. Establishment of Imprest Accounts at the Research Stations with authority vested in Program Heads to expend up to D500 for local purchases.
4. Establishment of Management Units at the Departmental and Station level in order to remove responsibility for logistical management from the researchers. These units would operate under the control of the Scientific Officer in charge of the stations.
5. Creation of a system of Deposit Accounts, either at the Ministry of Finance or the Central Bank, to service the donor funds for agricultural research. The Donor Accounts would be managed by a senior administrator of the research service and rectified in accordance with donor and GOTG regulations.
6. Allocation of GLF funding to become immediately available at the beginning of each quarter.
7. Establishment of an accounting system that aggregates GLF and donor below-the-line accounts with research program needs.

The report has been distributed to the departments for consideration, and implementation of selected recommendations will commence in 1987.

Two meetings of the Agricultural Research Advisory Board (ARAB) were held in November/December to discuss: i) fertilizer recommendations; ii) Farming Systems Research and Extension (FSR/E); iii) Agricultural Engineering; iv) manpower needs, and v) plans for analysis of trials data. Task forces on various research themes were set up which will meet in January to review past research results and make recommendations on research priorities for the 1987 season.

The Chief of Party attended a meeting on On-Farm Client Oriented Research held at the International Service for National Agricultural Research (ISNAR) in the Netherlands in early October and held discussions with ISNAR staff on future assistance for efforts to improve agricultural research management in The Gambia. ISNAR was instrumental in the development of the ARMS Working Group Report during the first half of 1986 and is prepared to assist with selected aspects of its implementation. Specifically, ISNAR will organize an in-country workshop on Program Budgeting for the research system in April/May 1987 as well as advise on the operations of the NARB and the Technical Secretariat.

B. AGRICULTURAL STATISTICS

John Rowe completed a four-week STTA mission on Agricultural Statistics on October 10th and submitted his final report in November. The mission focused on efforts to improve the National Sample Survey (NASS) including: i) review of sampling frame and expansion factors; ii) verification of procedures for summarization and handling missing data; and iii) review of field measurement and crop cutting procedures.

A seminar entitled "Agricultural Statistics in The Gambia" was held on October 9th. It brought together a diverse group of agricultural data users and provided an overview of the current situation as well as discussion of future possibilities.

C. RESEARCH SUPPORT AND COMPUTER FACILITIES

The computer facility was fully occupied this quarter with the following activities:

1. Department of Agriculture - On-Farm Demonstration Trials: Field data for the the On-Farm Demonstration trials program supported by the FAO Fertilizer Project has been filtering in over the entire quarter and is being processed for analysis using the GADS (Gambia Agriculture Data System) farm budget programs. An analysis of agronomic data is also being carried out using MSTAT. A coding system has been designed and preparations made to process a third data set from these demonstrations which will be used to identify factors contributing to the yield gap between demonstration sites and adjacent farmers fields. Plans are underway to use parts of these data sets for the 1986/87 Demonstration/Trials Evaluation Workshop during the next quarter. The computer facility is collaborating with the FAO Fertilizer Use Project, the ODA Farm Management Economist at Sapu and DOA Extension staff in this effort.

2. FSR/E Surveys: Data from the FSR/E Pilot Area Surveys for groundnuts and millet in N'Jaba Kunda and Somita were processed.
3. Department of Agriculture - On Station Research: The November ARAB meetings laid out plans to analyze time series data for on-station agronomic trials. Meetings were held with all DOA research agronomists to discuss formatting of the trials data for analysis by MSTAT. Throughout December training sessions were held with researchers and their assistants on coding of data.
4. Department of Water Resources and Environment: Data from the Water Control Study will arrive from the field and is expected to be completed in early 1987 when processing will commence.
5. Department of Animal Health and Production: Results of the special village studies for sheep, goats and chickens were processed prior to the Livestock Research Planning Workshop.
6. Data-Base Library: The facility has begun to compile a data-base library of agricultural statistics including production, area and yield data since 1974; daily rainfall data from Gambian and selected Senegalese Hydromet stations and livestock production and herd census data. Additional population, land use, and price information is expected to be available on computer disc in the near future.

The computer facility has acquired additional software in an effort to expand our flexibility and compatibility with other institutional users. These include WordPerfect word processing, R-Base 5000 data base management, MSTAT Version 4 statistics and SAS statistical software. More advanced statistical options offered by SAS/STAT are expected in early 1987.

Due to the need to accommodate additional users and the increased demands on the facility from the computerization of the GARD accounts system, consideration is being given to acquiring two additional computers--one for the Mile 7 facility and one portable for use by STTAs.

A committee to oversee the operations of the facility was established composed of David Gibson (GARD Project Administration), Manochehr Timajchy (GARD Computer Facility Manager) and Patricia O'Neil (PCV Computer Specialist).

Two additional computer operators started working nights and weekends to facilitate work flow: Modlamin Cham, a statistician, is providing support in inputting agricultural statistics data and Dembo Bojang, an accountant, is providing support in the project accounts area.

c 60

Ms. Mary Bailey, STTA in Library Science from VSU, spent three weeks in The Gambia in November/December exploring options for improving research documentation for the agricultural research system. Her report will be reviewed during the next quarter.

IV. TRAINING AND NETWORKING

Mohammed Cole, Master's degree candidate in Agronomy at UW, had a kidney transplant operation in August. The operation was successful, but Cole experienced complications and was not released from the hospital until late September. Since that time his health has continued to improve. He worked on his research this quarter and plans to resume his studies as a full-time graduate student in the spring semester.

Musa Ann, officer in charge of the Soils Laboratory at Yundum, completed his short-term training program at UW and returned to The Gambia in December. Khatim Touray who is completing a Master's degree in Soil Physics with support from AFGRAD at Montana State University, came to UW during the winter break to meet with staff from the Departments of Soil Science and Agronomy.

The three bachelor's degree candidates at UW--Amidou Mballo (DOA); Kemoring Trawalley (DOA)--and Ebrima Camara (PPMU), completed their first semester in December.

Musa Mbenga continues to make satisfactory progress towards his M.S. degree in Agronomy at Cornell University. He submitted a research proposal on Colliar response/adoption of maize to different soil temperatures which will be reviewed by Albert Cox, PSO, Sapu, when he visits Cornell and UW in January. Mr. Mbenga plans to spend the 1987 cropping season in The Gambia to do research for his thesis.

With the exceptions of special sessions on computers, no in-country training was conducted during the quarter to accommodate the optimum workload of researchers involved in harvesting trials and completing data collection. The Training Coordinator assisted with arrangements for the Livestock Research Planning Workshop in December (see section V.B). A Training Committee meeting is scheduled for January.

Dr. Tijan Jallow, head of the Grain Legume Program at Yundum, visited ITTA in Nigeria and SAFGRAD in Burkina Faso in November, to review cowpea research programs.

V. ON-STATION/COMPONENT RESEARCH

A. AGRONOMY AND SOILS

During the quarter most of the research trials were harvested and preliminary statistical analysis begun. Throughout the country the August and September rains were good and although October rainfall ended abruptly (10/10) most crops did well this year. The major exception was in the Western Division where heavy infestations of blister beetles and grasshoppers damaged the cereal crops.

Generally speaking, the station-based varietal trials (upland cereals, grain legumes, lowland rice), soil fertility trials (phosphorous source, nitrogen management), and general agronomy trials (cultivation techniques, continuous cropping, intercropping, mode of rice seeding) will yield useful data for refining current recommendations. The Demonstration Trials Program being run by Extension Service, DOA, with support from the FAO Fertilizer Use Project, also had a good year with the majority of trials well managed and already harvested.

Tom Remington, Research Associate and Ph.D. candidate at the UW, developed a rice research program for the Western Region in collaboration with Alfusanou Marong, head of the Rice Agronomy Program, and Joshua Posner, Cropping Systems Agronomist, Yundum. In addition, Remington participated in the livestock research planning workshop looking at the forage and animal traction programs.

During the December ARAB meeting task forces were established to look at each major research program (Upland Cereals, Rice, Grain Legumes, Cropping Systems, Animal Traction and Horticulture). Each group was asked to review previous research results, visit Divisional Extension Coordinators to discuss current problems, and develop research proposals prior to the ARAB meetings scheduled for April.

Musa Ann, officer in charge of the Soils Lab at Yundum, spent the fall semester at UW taking courses in Soil Science and acquainting himself with soil testing and lab administrative procedures. A visit by John Peters, Soil Scientist at UW, to The Gambia to work with the Soils Lab at Yundum scheduled to begin in December was postponed pending receipt of chemicals and other supplies which are on order.

B. LIVESTOCK

Activities in the livestock sector involved field data collection and the planning workshop held on December 8-18 at the Friendship Hostel in Bakau. Following the visit by Drs. Yuill and Homan in September-October, informal surveys of livestock management, objectives and farmer activities were carried out in eight villages.

Data collection was started in seven FSR/E villages to monitor indices of productivity and movement patterns of small ruminants and poultry. These activities were carried out by Tayib Janha, Jebel Sowe, Patricia Andrews, Aminatta Njie and Ena Corrah of DAHP.

A team comprising Drs. Arthur Pope (small ruminant nutrition and management), Margaret Dentine (genetics), William Bosu (veterinary medicine), Bernard Wentworth (poultry), Jane Homan (team coordinator) from UW and Michael Ezekwe (animal nutrition) from VSU, visited The Gambia in late November and December. After an initial field orientation, this group--together with Thomas Remington (Research Associate in rice and forage agronomy), Andrew Jones, (ODA Farm Management Economist at Yundum), and Jane Ellis (short-term consultant with experience in Senegalese programs)--engaged in a planning exercise with DAHP, DOA, Department of Forestry and PPMU counterparts to determine directions of livestock related research. A core group of thirty, supplemented in some sessions by livestock producers and representatives of other disciplines, reviewed current programs and developed proposals for research on poultry and small ruminants, forage and draft animals. The workshop report containing these proposals and recommendations for technical assistance, training, networking, and other inputs to livestock related activities will be circulated during the next quarter.

C. WATER CONTROL STUDIES

Collection of detailed production data in twelve case study households neared completion during this quarter. Computer data entry progressed well with most of the data now ready for preliminary analysis.

Discussions continued with the Director of the Department of Water Resources (DWR) concerning the implications following the resignation of the DWR Irrigation Engineer assigned to the studies. It was decided to seek outside assistance to ensure the completion of parts of the irrigated rice component of the studies. In the meantime, Chris Elias, Research Associate in Rural Sociology, will continue to focus on those study components dealing with the non-pump irrigated rice sector. A decision was taken by DWR to organize a Committee of Water-Controlled Rice Production to review the results of the water-control studies and develop strategy for ongoing monitoring and evaluation of water-control projects. It is envisaged that the committee will have members from various water control programs presently operating in The Gambia, including FFHC, Jahally Pacharr, SWMU and the GTZ Project in DWR.

A proposed classification of Gambian rice ecologies was completed during this quarter and circulated for comments to interested research and extension personnel.

67

D. MARKETING

Ms. Lisa Daniels, Research Associate in Horticultural Marketing, and her advisor, Dr. Gerald Campbell of the Department of Agricultural Economics, UW, arrived in The Gambia at the end of December to begin a mission to plan a research program in horticultural marketing for the 1987 and 1988 seasons involving the Horticultural Unit, PPMU, and various PVOs. The research program will focus upon the design and testing of market improvements during the 1988 season.

VI. ON-FARM RESEARCH

A special ARAB meeting was held on December 22 to discuss the progress and future of the FSR/E activities. It was agreed that both research and extension activities should incorporate a farming systems perspective in their work, rather than leaving FSR/E to be the concern of a separate unit. Further FSR/E required:

1. base data analysis
2. on-station/component studies, and
3. on-farm research.

The operations of the FSR/E field teams would continue for the time being, but their number will not expand. Detailed planning on how and what on-farm research would be carried out during 1987 would be done during the next quarter in consultation with the Extension Service.

The FSR/E activities in the west focused on the completion of field surveys of general farming systems and specific practices for millet, groundnuts, and livestock. The data have been entered in the computer, analyzed and are currently being written up. The district profile reports neared completion using secondary data (including population, production statistics, land use estimates and rainfall) and will be distributed in the coming quarter. In addition, the village soil mapping exercise (completed with SWMU help) was extended to the village of Njoben in North Bank Division. Three maps have been drawn and distributed. It is planned to write a short note to accompany these maps discussing soil chemical analysis and general farmer cropping strategies on the different soil series. In collaboration with SWMU, the Somita team has been making detailed topographic maps about the Somita and Kassange water retention dikes. In the 1987 rainy season, carefully sited rice and sweet potato trials might be conducted to take maximum advantage of the trapped water above the dikes.

With the onset of the dry season, a number of horticultural trials have been placed on farm. The major themes include date of planting, mulching, intercropping and staking of tomatoes. An irrigation trial is also being conducted testing three different irrigation rates in Faraba Banta in Kombo East District.

Two researchers joined the FSR/E Yundum based team during the quarter. They are Mr. Tom Remington, Research Associate in rice agronomy, and Mr. Andrew Jones, ODA Farm Management Economist, both of whom participated in the Livestock Research Planning Workshop and will be involved in field reconnaissance work on animal traction during the coming quarter.

The FSR/E activities in the East were dominated by assembling secondary data and exploratory surveys in the two pilot areas of Sare Sofi (MID South) and Mankama Kunda (URD). Informal surveys were conducted in four villages in the Sare Sofi area and five villages in the Mankama Kunda area. Mapping of the two districts was completed using the services of a surveyor attached to the Jahally Pacharr Project. In addition, the surveyor produced sketches of the four villages selected in the Sare Sofi area.

While preliminary field reports have been completed for the Sare Sofi district, more formal surveys are planned for the next quarter. These studies will be conducted using questionnaires to assess constraints and farmers' management strategies. Ibrahim Diallo, the Research Extension Liaison Officer (RELO) at Sapu, devoted much of his time to this effort. Two Peace Corps Volunteers, David Gains in URD and Glen Langham in MID (south), assisted with field surveys and trial supervision.

VII. PROMOTIONAL ACTIVITIES

Farmers have responded very positively to the on-farm demonstration trials of a groundnut variety from Senegal (73-33), which were harvested during the quarter. The variety had been tested on station for several years by the Upland Crop Improvement Program at Sapu and prior to the 1986 farming season, the GARD Project obtained several bags of this variety plus one other, 55-437, a shorter duration confectionery nut. The two varieties were planted throughout the country by the Extension Service as part of the FAO Fertilizer Use Project's program of demonstration trials. Yields of nuts and forage appeared higher than for the local variety under farm conditions so that many participating farmers indicated that they wished to retain the production for seed use during the 1987 season. A detailed analysis of the demonstration trial results will take place during the coming quarter (see section IIC. Research Support and Computer Facilities).

The Seed Multiplication Unit commenced arrangements to have the 73-33 seed multiplied by farmers under contract with the Unit in accordance with the Ministry of Agriculture's decision to privatize the final stages of seed multiplication with advisory assistance from the Unit. An expert in seed technology supplied by ODA is expected to commence an assignment in The Gambia in early 1987 in support of this process. It is anticipated that the new variety will be ready for widespread promotion during the 1988 season by the Extension Service following the multiplication program in 1987.

65

The GARD Project's involvement in this process is expected to remain limited since arrangements for multiplication and dissemination of the variety by DOA with assistance from other donor projects appear adequate. The Research Extension Liaison Officer (RELO) based at Sapu will monitor the multiplication effort during the 1987 season and participate in planning for promotion in 1988 as required.

Discussions continued or were initiated with various programs including Extension Aids Unit and the Nutrition Unit, DOA, the Catholic Relief Service (CRS) and Action Aid on ways in which the research programs can better support specific promotional efforts. Representatives of these programs, both governmental and PVOs, are being included in meetings and committees on a range of research themes including water control studies, animal traction, various crops and horticultural marketing (see section V).

VIII. PROSPECTIVE ACTIVITIES FOR THE COMING QUARTER

1. PROJECT ADMINISTRATION: Continuation of Sapu housing construction; finalization of plans for the Cape offices and letting tenders for construction; completion of renovations at Yundum Soils Lab and Horticultural Offices; improvements to facilities at Site 3 at Yundum.
2. ARMS/FARMS: A memorandum establishing NARB and Technical Secretariat will be submitted to Cabinet and the Board is expected to commence operations during the first half of 1987. Research priorities and programs will be refined in the course of various task force meetings scheduled for early 1987. Implementation of the FARMS Committee recommendations will commence. The ODA mission to review the structure of the Ministry of Agriculture will commence its work out leading to decisions on research structure contained in the ARMS Working Group Report.
3. AGRICULTURAL STATISTICS: Messrs. Rowe and Johnson, STTAs in Agricultural Statistics will make return visits in February-March, for a Data Analysis Workshop being run by PPMU. Their Terms of Reference also include: reviewing the final 1986 NASS data; advising PPMU on future sample designs; assisting with outlining publication formats for agricultural data; and reviewing the progress on the Gambia Agricultural Data System (GADS), and the Market Price Survey.
4. RESEARCH SUPPORT AND COMPUTER SERVICES: Preliminary results of the DOA on-farm demonstrations, including crop budgets, trial results and yield gap analysis, will be presented at the 1986/87 Demonstration/Trials Evaluation Workshop. On-station agronomic trials results and the

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Water Control studies data will continue to be processed/computerized. Data for the agricultural data base library will continue to be compiled. Plans will be developed for staffing and provision of hardware/software for the computer facilities proposed for the Sapu and Yundum stations.

5. TRAINING AND NETWORKING: The Training Committee will meet in January. Short-term external training is planned in agronomy, soils, computers/computer software and agricultural statistics. A workshop on agricultural data analysis will be conducted in-country on 23 February - 6 March with PPMU.
6. CROPS AND SOILS: The analysis of data from the 1986 trials will be largely completed and reports for the ARAB meeting scheduled for April will be prepared. Harvesting and data processing of the horticultural trials will commence. Task Forces on research programs will meet to review research results and define research activities for the coming season.
7. LIVESTOCK: The report from the Livestock Research Planning Workshop will be finalized and circulated for review. Short-term plans emerging from the livestock workshop call for continuation of on-farm production monitoring, initiation of recording at the Yundum sheep and goat farm, and a reconnaissance study on draft animals.
8. WATER CONTROL STUDIES: The final farm and crop budgets will be generated from production data collected during the 1986 rainy season. Work will continue on the benefit-cost analyses of ongoing rice projects. The first meetings of the Committee on Water-Controlled Rice Production will be convened, and writing will begin on the final report of the studies.
9. MARKETING: Completion of plans for horticultural marketing research during the 1987 dry season and commencement of field work. Finalization of research plans for 1987/88.
10. ON-FARM RESEARCH: Completion of district agricultural profiles and crop survey reports; refinement of research themes in collaboration with scientists from commodity programs (upland crops, livestock, horticultural crops, livestock, water control studies); continuation of horticultural trials.

11. PROMOTIONAL ACTIVITIES: Backstopping assistance to the DOA Extension Evaluation Workshop on the Demonstration Trials Program supported by the FAO Fertilizer Use Project; review of ongoing promotional programs and continuation of exploratory discussions with various agencies involved in i) nutritional programs, ii) horticultural marketing, iii) wind mills, and iv) animal powered grain milling with a view to possibly mounting pilot demonstration efforts during 1987.

68.

ATTACHMENT A - GARD PROJECT STAFF

(i). Technical Assistance Staff:

1. Dr. Elon Gilbert - Chief of Party, Farming Systems Economist (Cape).
2. Mr. David Gibson - Project Administrator (Mile 7).
3. Dr. Ibrahim Diallo - Research Extension Liaison Officer (Sapu).
4. Dr. Joshua Posner - Cropping Systems Agronomist (Yundum).

(ii). Research Associates:

1. Ms. Christine Elias - Rural Sociologist/Water Control Studies (Department of Water Resources, Banjul).
2. Mr. Tom Remington - Rice Agronomist (Yundum)

(iii). Support Staff:

1. Bintu Nying - Administrative Secretary (Cape)
2. Lawrence Bruce - Administrative Assistant (Mile 7)
3. Connie Tucker - Training Coordinator (Cape)
4. Ibrahima Jarboh - Accountant -(Mile 7)
5. Deborah Touray - Secretary (Cape)
6. Max Njie - Facilitator (Mile 7)
7. Jainaba Saidy - Secretary (Sapu)
8. Ebrima Njie - Administrative Assistant (Sapu).
9. Manochehr Timajchy - Computer Facilities Manager (Mile 7)
10. Ousman Jobe - Vehicle Coordinator (Mile 7)
11. Abdoul Aziz Samba, Administrative Assistant (Yundum)
12. Matarr Touray - Warehouse Manager (Kanifing)
13. Pa Jobe - Motor Mechanic, (Kanifing)
14. Baboucar Gai - Motor Mechanic (Kanifing)
15. Tims Thomas - Motor Mechanic - (Kanifing)
16. Leon Prom - Maintenance Manager (Mile 7)
17. Abdoulie Ndoeye - Assistant Accountant, (Mile 7)
18. Cameil Whyte - Office Clerk (Mile 7)
19. Bunjah Sanyang - Office Clerk, (Cape Office)

(iv). Peace Corps Volunteers:

1. Mr. David Gaines - On-Farm Trials Supervisor (Jaruba Kunda, URD).
2. Mr. Glen Langan - Agricultural Economist/On-Farm Trials Supervisor (Sapu).

69

3. Ms. Patricia O'Neil - Agricultural Economist/Computer Specialist (Mile 7).

(v). Short-Term Training Advisors/Consultants:

- 1 Mr. John Rowe - Agricultural Statistics, University of Wisconsin (September 15 - October 10, 1986)
2. Ms. Loretta Erdahl, - Financial Administration, University of Wisconsin (October 17 - October 31, 1986).
3. Mr. Charles Steedman - Financial Administration, and Research Management Systems (FARMS), University of Michigan, (October 28 - November 19, 1986).
4. Mrs. Mary Bailey, - Library Science, Virginia State University (November 18 - December 9, 1986).
5. Dr. Jane Homan - Livestock Planning Mission, University of Wisconsin (November 25 - December 20, 1986).
- 6 Dr. William Bosu - Livestock Planning Mission, University of Wisconsin (November 27 - December 20, 1986)
7. Dr. Arthur Pope, - Livestock Planning Mission, University of Wisconsin (November 28 - December 20, 1986)
8. Dr. Bernard Wentworth, - Livestock Planning Mission, University of Wisconsin (November 28 - December 20, 1986).
9. Dr. Michael Ezekwe, - Livestock Planning Mission, Virginia State University (Nov 28, - December 20, 1986)
10. Dr. Margaret Dentine, - Livestock Planning Mission, University of Wisconsin (December 5, - December 20, 1986)
11. Dr. Gerald Campbell, - Horticultural Marketing, University of Wisconsin (December 26 - January 10, 1987).
12. Ms. Lisa Daniels, - Horticultural Marketing, University of Wisconsin (December 26 - January 16, 1987)

New Addition to Resident Project Staff

Mr. Tom Remington - Joined the project in mid-November for a two-year tour as a Research Associate in the Rice Agronomy Program. His responsibilities include developing a rice research program for Western Gambia and serving as the agronomist on the newly created Animal Traction Task Force. Mr. Remington is a Ph.D. candidate in the Agronomy Department of the University of Wisconsin. He came to GARD

-10-

from Togo where he served as the agronomist on the USAID Togo Animal Traction Project.

The Project also wishes to welcome the arrival of Mr. Andrew Jones, ODA Farm Management Economist based at Yundum. Mr. Jones holds a first degree in Development Studies from the University College, Swansea, and a Master Degree in Agricultural Economics from the University of Wales. His main responsibility will be as Agricultural Economist for the Western Region FSR/E team. He is serving as Socioeconomist for the Animal Traction task force, and on the rice mechanization program.

-11-

ATTACHMENT B - REPORTS

GARD Project Reports:¹

1. "Livestock Research Planning Mission" by Jane Homan and Tom Yuill, October 1986.
2. Report on "Agricultural Statistics Short-Term Technical Assistance," September 15 - October 10. By John Rowe
3. "Financial Administrative Research Management System (FARMS) Committee," (a Subcommittee of the ARMS Working Group). 30th November, 1986. By FARMS Committee.

Recent Reports from Other Sources:²

1. "Technical Document Nos. 2 & 3, Gambia River Basin Development Organization (OMVG), Planning Division. The Agricultural Statistics of The Gambia: A User's Guide." James L.A. Webb, Jr., Project Economist/OMVG. August 1986.
2. "Report of a Mission on Cotton Growing in The Gambia" by P. Guibordeau, Head of Cotton Program at the Station of Tambacounda. September 9-11, 1986.
3. "Poultry Farming Workshop, Management Development Institute"; Department of Animal Health and Production, and Gambia Cooperative Union, and sponsored by the Ministry of Agriculture. 9th August, 1986.
4. "Report on the Grasshopper Control Campaign - 1986/87 Season" by Sankung B. Sagnia, Senior Scientific Officer/Entomologist (Campaign Coordinator). November, 1986.

¹Copies of final reports are available upon request from the secretary to the GARD Project, Department of Agriculture, Cape. Preliminary reports have a restricted circulation, but requests can be made for copies of the final versions when these are available.

²The list of recent reports from other sources is not intended to be exhaustive. Information on additional reports of relevance to agricultural research in The Gambia would be most welcome and should be addressed to the Chief of Party, GARD, Department of Agriculture, Cape.

- 172 -

Attachment C-1

GARD Participant - Quarterly Report
 October - December, 1986
 Technical Training - U.S.

<u>Name of Participant</u>	<u>PIO/P Number</u>	<u>Sex</u>	<u>Date of Birth</u>	<u>Employer In The Gambia</u>	<u>Field of Training</u>	<u>Starting Date of Training</u>	<u>Est. Duration of Training</u>	<u>Ending Date of Training</u>	<u>Name of Institution Providing Training</u>	<u>Location of Training</u>
ANN, Musa	635-50040	M	5/26/59	Dept. of Agr. GOTG	Soil testing & management	8/19/86	16 weeks	12/22/86	Univ. of Wisconsin	Madison, Wisconsin
TOLRAY, Khatim	635-50047	M	1/3/57	Dept. of Agr.	Soil Science	12/20/86	3 days	12/23/86	Univ. of Wisconsin	Madison, Wisconsin

199

NETWORKING ACTIVITIES - GARD PROJECT

DATE - October - December 1986

NAME OF RESEARCH SCIENTIST	SEX	EMPLOYER IN THE GAMBIA	STARTING DATE	ENDING DATE OF VISIT	PURPOSE / LOCATION
Dr. Tijan Jallow	M	DOA	Nov. 8	Nov. 25	Visits to IITA (Nigeria) and SAFGRAD (Burkina Faso) to look at their cowpea research program.
Mr. Sankung Janneli	M	DOA			Visit to UW-Madison for institutional linkages and discussions on program and implementation of the GARD Project
Mr. Bye-Mass Taal	M	DOA			