PD-ABD-602
73134

A.I.D. EVALUATION SUMMARY - PART I

1. BEFORE FILLING OUT THIS FORM, READ THE ATTACHED INSTRUCTIONS.
2. USE LETTER QUALITY TYPE, NOT "DOT MATRIX" TYPE.

IDENTIFICATION DATA

A. Reporting A.I.D. Unit:
Mission or AID/W Office USAID/GHANA
(ES# _____ _____)

B. Was Evaluation Scheduled In Current FY Annual Evaluation Plan?
Yes ☐ Slipped ☒ Ad Hoc ☐
Evaluation Plan Submission Date: FY ____ Q ____

C. Evaluation Timing
Interim ☒ Final ☐
Ex Post ☐ Other ☐

D. Activity or Activities Evaluated (List the following information for project(s) or program(s) evaluated; if not applicable, list title and date of the evaluation report.)

Project No.	Project /Program Title	First PROAG or Equivalent (FY)	Most Recent PACD (Mo/Yr)	Planned LOP Cost (000)	Amount Obligated to Date (000)
641-0117	AG. PRODUCTIVITY PROMOTION PROGRAM	88	91	20,000	20,000

ACTIONS

E. Action Decisions Approved By Mission or AID/W Office Director

Action(s) Required	Name of Officer Responsible for Action	Date Action to be Completed
A person will be hired who will be responsible for improving the monitoring, evaluation and impact analysis of the Title III Program.	Peter Weisel	6/92

(Attach extra sheet if necessary)

APPROVALS

F. Date Of Mission Or AID/W Office Review Of Evaluation: (Month) (Day) (Year)

G. Approvals of Evaluation Summary And Action Decisions:

	Project/Program Officer	Representative of Borrower/Grantee	Evaluation Officer	Mission or AID/W Office Director
Name (Typed)	E. Birgells		R. Wuertz	J. B. Goodwin
Signature	[signature]		[signature]	[signature]
Date	1-8-92		1/8/92	1/9/92

ABSTRACT

H. Evaluation Abstract (Do not exceed the space provided)

Summary - The $20 million Agricultural Productivity Promotion Program (APPP) was one of AID's first non-project initiatives under the Development Fund for Africa. APPP seeks to promote increased food production by increasing farmer efficiency and productivity through the application of modern technologies and the reduction of institutional deficiencies and infrastructure constraints. APPP's strategy is to support the privatization of fertilizer supply and distribution, the revitalization of the seed industry, the improvement of feeder roads and other rural infrastructure, and institutional improvements such as strengthening of the agricultural extension service.

The Government of Ghana successfully met all of the conditionalities and all funds were disbursed. In the fertilizer area, subsidies were eliminated as planned. However, the combination of the loss of subsidy and the devaluation of the cedi caused a large increase in fertilizer price, which depressed sales and resulted in a large buildup in government-held fertilizer stock. This stock, plus the continuing GOG role in fertilizer sales, has retarded private sector activity. In the seed industry, the Ghana Seed Company was closed, but no private firm(s) has(ve) stepped in to supply additional seed, which suggests that additional action is needed to provide the necessary enabling environment. Feeder roads have been built, with a significant impact on the towns served by those roads. However, the feeder roads were in worse shape than expected, so the cost of rehabilitating each km was higher than expected and fewer kms could be rehabilitated with the available funds.

The APPP program was also found to have significantly increased the mobility of extension agents and their contact with farmers. However, the extension agents did not have very much valuable information to give to the farmers. The extension service needs access to research to remedy this deficiency, and it needs to adopt different approaches and to be reorganized. Monitoring and evaluation activities need to be improved. Studies were carried out on the need for food aid and the impact on domestic food production and consumption, a comparative assessment of alternative extension programs, and an economic analysis of fertilizer use and consumption.

COSTS

I. Evaluation Costs

1. Evaluation Team

Name	Affiliation	Contract Number OR TDY Person Days	Contract Cost OR TDY Cost (U.S. $)	Source of Funds
1. Sanath K. Reddy, Team Leader	REDSO/WCA	25	0	
2. Vehi Toure, Fertilizer Privatization	REDSO/WCA	20	0	
3. Tej S. Mathur, Engineering Officer	REDSO/WCA	20	0	
4. Seth Vordzorgbe, Ag. Economist	Consultant, Ghana	18	2,000	APPP Trust Fund
5. Donald L. McOune, Fertilizer Specialist	Sigma One Corp.	26	)	
6. John Harding, Seed Specialist	Sigma One Corp.	26	) 77,000	PD&S
7. Carl Van Haeften, Monitoring & Evaluation Specialist	Sigma One Corp.	20	)	

2. Mission/Office Professional Staff Person-Days (Estimate) 30

3. Borrower/Grantee Professional Staff Person-Days (Estimate) _____

2

A.I.D. EVALUATION SUMMARY - PART II

SUMMARY

J. Summary of Evaluation Findings, Conclusions and Recommendations (Try not to exceed the three (3) pages provid
Address the following items:

- Purpose of evaluation and methodology used
- Purpose of activity(ies) evaluated
- Findings and conclusions (relate to questions)
- Principal recommendations
- Lessons learned

Mission or Office:	Date This Summary Prepared:	Title And Date Of Full Evaluation Report:
USAID/GHANA	JAN 3, 1992	Mid-Term Evaluation of the Ag. Productivity Promotion Program (APP

Mid-Term Evaluation of the Agricultural Productivity Promotion Program (APPP)

Introduction

This mid-term evaluation took place in November, 1990. However, the final report did not contain an adequate executive summary, so the Mission commissioned the consulting firm of Sigma One to provide one. Because of the resulting delay and the Mission workload, this evaluation summary was finalized after the PACD of the APPP.

The Agricultural Productivity Program (APPP) supported the Economic Recovery Program (ERP) of the Government of Ghana (GOG) with a cash grant of $20 million from the Development Fund for Africa (DFA). The APPP cash grant was directed at policy reforms for the privatization and revitalization of the fertilizer and seed industries. The cash grant provided dollars which were auctioned by the Bank of Ghana in the foreign currency auction; this helped support the exchange rate reforms of the ERP. The local currency generated by the auctioning of the grant dollars was used to provide budget support to selected activities within the agricultural sector. The dollars were provided in three tranches: $5.44 million in FY 1989, $8.611 million in FY 1990, and $5.449 million in FY 1991.

The APPP also supported the policy framework in the Agricultural Services Rehabilitation Project (ASRP) which was agreed upon by the GOG and the World Bank in 1987. As a result of the policy reforms under the ERP (exchange rate reforms through the auction, inter alia) export crop output has increased, but the response of the food crop sector has been disappointing. Low yields were attributed to low adoption of modern inputs and to constraints in the marketing infrastructure. As part of the policy framework in the APPP, the GOG agreed to privatize the fertilizer operations, to eliminate the fertilizer subsidies, and to restructure and revitalize the seed industry. Prior to the APPP, Ghana's fertilizer distribution system was entirely under the control of the Ministry of Agriculture, and the seed industry was dominated by the Ghana Seed Company (GSC), a state-owned enterprise.

3

Less than twenty percent of small farmers used fertilizer in 1989, and only thirty percent of small farmers have ever used fertilizers. On the other hand, eighty-seven percent of larger farms (10 ha or more) used fertilizer in 1989. More than half of the farmers that use fertilizer use less than the recommended amount even though fertilizer use has been shown to be highly profitable in on-farm trials.

The seed industry did not serve the needs of the farmers; the GSC incurred losses and accumulated debts. Production and sales of improved seeds plummeted and seed quality deteriorated.

Project Scope and Activities

The local currency proceeds from the sales of the dollars in the auction were jointly programmed by USAID and the GOG; the cedi equivalent of $9.7 million were programmed for feeder roads, $5.4 million for the Extension Service, $1.7 million for the AID Trust Fund, $1.1 million for the National Seed Program, and the remaining $2.1 million for policy studies, training, monitoring and evaluation.

Project Targets and Accomplishments

Within the overall objectives of the ERP, the Agricultural Productivity Promotion Project had a goal of increasing productivity and employment in the private sector, particularly in agriculture. The purpose of APPP was to increase productivity in food cropping in terms of output per capita and yield per hectare. Specifically APPP sought to increase productivity by: 1) increasing the knowledge of farmers about improved technologies, especially the use of fertilizer and improved seeds; 2) increasing the availability and use of fertilizers; 3) increasing the supply and use of improved seeds; and 4) reducing infrastructural constraints in product and input markets. In addition to privatizing and revitalizing the seed and fertilizer industries, the APPP also provided local currency support for improving the Agricultural Extension Service and for improvement of the feeder roads system.

The major accomplishments of the APPP include:

1) The GOG met the conditions relating to privatization of the seeds and the fertilizer industries and eliminated explicit fertilizer subsidies.

2) The three tranches of dollars from the cash grant have been successfully released in auctions.

4

3) The feeder road program has made significant contributions to improving farmers' access to markets and services even though the APPP targets will not be fully met as a result of cost factors.

Actual 1989	Actual 1990	Target	Action: Roads
176.5 km	34.2 km	700 km	were graded or reshaped
59.6	40.2	155	were regravelled
61.4	211.5	35	had spot improvements made
14	6	100	had drains installed

4) The Extension Service has increased its mobility, outreach capacity, and its training of front line staff. Notably, the Women's Extension Division is playing an important role in organizing rural women to benefit from the resources being provided and in improving living conditions of rural families.

5) Per capita output and yield have increased modestly during the period of the APPP; it is, however, impossible to attribute these impacts directly to the APPP because of weaknesses in the monitoring, evaluation, and impact assessment systems for the APPP.

The evaluation team found that the APPP was making satisfactory progress in implementing policy changes regarding privatization of the seed and fertilizer industries, in providing budgetary support for the Extension Service and for feeder road rehabilitation, and in providing funds for policy analyses and trust fund support. The monitoring and evaluation activities are inadequate and behind schedule. This notwithstanding, the implementation of the program appeared generally acceptable. There are, however, a number of issues which need to be addressed within each of the program elements.

Lessons Learned

1. Joint program design with GOG staff at all the stages of design has generated trust between USAID and GOG officials and facilitated implementation and problem solving.

2. DFA requirements for program observation management and monitoring could be made effective if the Missions are provided with necessary resources both human and material, to enable the Missions to take a more active role in program monitoring and evaluation.

5

3. Agency perception that program assistance is less management intensive and that smaller staffs are needed for implementing such assistance are not borne out by the APPP experience. If anything, better staffing of the Mission would have helped greatly.

4. It is necessary to get the baseline data collected and impact assessment framework completed simultaneously with program design.

5. The USAID should negotiate strict performance criteria regarding monitoring and evaluation to satisfy the Agency's requirements within the DFA.

6. Privatization is a long term process and it requires careful nurturing to build confidence both in the public and in the government. The donor agencies need to develop strategies to manage the interim period until privatization takes hold.

Major Recommendations

Fertilizer Sector Recommendations:

1. Price controls and fixed margins should be eliminated to allow traders to profit from the marketing of fertilizers. The use of fertilizers will remain profitable to farmers at even higher prices, particularly with the use of improved seeds and appropriate techniques for production.

2. The government should get out of the fertilizer distribution business and limit its role to information, extension, dealer training, and quality control.

3. FASCOMs should be divested from government ownership and forced to operate as private enterprises, or eliminated. At the least, they should be prevented from expanding beyond their current service areas.

4. Fertilizers donated to the government by other governments should be sold at auction to private dealers and not distributed by the Government of Ghana. Similarly, the GOG should auction off its existing stocks of fertilizers and it should be recognized that these materials will be sold at deep discounts because they have already deteriorated in quality. Alternatively, these materials should be sold through the FASCOMs as off-grade fertilizer.

5. USAID should provide technical assistance to the private sector in fertilizer procurement, transportation, storage, quality control and marketing.

Seed Industry Recommendations:

1. The government should disseminate the policy framework for a private seed industry at a National Seed Seminar in February 1991. Seed growers, dealers, technicians and donor representatives should be invited to participate.

2. The National Seed Committee should include at least four representatives from the private seed producers, and the director of the National Seed Certification Service should be appointed.

3. The National Seed Committee should continue to review policy issues regarding the restructuring of the seed industry; these areas include legislation, research, production, quality control, certification, extension and marketing.

4. The donor community should consult continuously on the approaches they should follow in supporting the restructuring of the seed industry. Technical assistance is needed in all aspects of the industry.

Feeder Roads Recommendations:

1. There is still a need to improve the engineering and technical basis of the program, particularly regarding drainage.

2. Administrative bottlenecks regarding payments to contractors need to be resolved.

Extension Recommendations:

1. Program planning, management, monitoring and evaluation need to be significantly improved. International technical assistance is required in all these areas.

2. Extension/research linkages need to be implemented, as well as linkages to private sector dealers in seeds and fertilization.

General Recommendations

1. An impact assessment scheme should be re-designed in light of a careful review of the linkages between program actions and expected impacts.

2. USAID should support the development of enhanced capacity for monitoring and evaluation within the MOA.

3. The GLSS should be used as the baseline for impact evaluation.

4. USAID should continue support for APPP activities for another three to five years.

5. USAID and other donors should support confidence building measures for privatization through technical assistance to the private sector and continued policy dialogue with the GOG towards an improved policy framework for private entrepreneurial activities.

Mission Follow-up

To improve monitoring and evaluation, the Mission has created a Monitoring and Evaluation Unit within the Program Office to coordinate monitoring and evaluation studies. As a result, the Mission is contracting for studies which will provide a better baseline for impact studies than provided by the GLSS. The monitoring and evaluation unit at the Ministry of Agriculture will be assisted by the FAO.

USAID will continue to provide support for some components of the APPP program. The FY 91 Title III program contains $3 million to support the liberalization of the seed and fertilizer industries. AID/W has recommended that the Mission curtail its future role in these industries so that Mission resources can be concentrated on a more limited number of areas. Agricultural extension will not be supported because the World Bank has started an extensive program in that field. However, the FY 91 Title III contains funds for continuation of the feeder road program, and it is anticipated that future programs will also support feeder road rehabilitation.

8

XD-ABD-602-A
75135

EVALUATION REPORT

Mid-Term Evaluation of the
Agricultural Productivity Promotion Program (APPP)

PAAD NO: 641-0117

Prepared by:

REDSO/WCA
Sigma One Corporation

Prepared For:

The United States Agency for
International Development

Accra/Ghana

May 1991

9'

Executive Summary
Mid-Term Evaluation of the Agricultural Productivity Promotion Program (APPP)

USAID/Accra, Ghana
By REDSO/WCA and Sigma One Corporation

Background

The Agricultural Productivity Program (APPP) supports the Economic Recovery Program (ERP) of the Government of Ghana (GOG) with a cash grant of $20 million from the Development Fund for Africa (DFA). The APPP cash grant was directed at policy reforms for the privatization and revitalization of the fertilizer and seed industries. The cash grant provided dollars to be auctioned by the Bank of Ghana in the foreign currency auction; this helped support the exchange rate reforms of the ERP. The local currency generated by the auctioning of the grant dollars was used to provide budget support to selected activities within the agricultural sector. The dollars were provided in three tranches: $5.44 million in FY 1989, $8.611 million in FY 1990, and $5.449 million in FY 1991.

The APPP also supported the policy framework in the Agricultural Services Rehabilitation Project (ASRP) which was agreed upon by the GOG and the World Bank in 1987. As a result of the policy reforms under the ERP (exchange rate reforms through the auction, inter alia) export crop output has increased, but the response of the food crop sector has been disappointing. Low yields were attributed to low adoption of modern inputs and to constraints in the marketing infrastructure. As part of the policy framework in the APPP, the GOG agreed to privatize the fertilizer operations, to eliminate the fertilizer subsidies, and to restructure and revitalize the seed industry. Prior to the APPP, Ghana's fertilizer distribution system was entirely under the control of the Ministry of Agriculture, and the seed industry was dominated by the Ghana Seed Company (GSC), a state-owned enterprise.

During the ERP, 1983-1990, the use of fertilizers fell to half of its aggregate levels from the early eighties (from an average of nearly 26,000 metric tons of nutrient equivalent to an average of less than 10,000 tons in 1988-1990). Less than twenty percent of small farmers used fertilizer in 1989, and only thirty percent of small farmers have ever used fertilizers. On the other hand, eighty-seven percent of larger farms (10 ha or more) used fertilizer in 1989. More than half of the farmers that use fertilizer use less than the recommended amount even though fertilizer use has been shown to be highly profitable in on-farm trials.

The seed industry did not serve the needs of the farmers; the GSC incurred losses and accumulated debts. Production and sales of improved seeds plummeted, seed quality deteriorated and the industry provided less than ten percent of the seeds used in Ghana.

10

Objectives, Goals and Purpose

Within the overall objectives of the ERP, the Agricultural Productivity Promotion Project had a goal of increasing productivity and employment in the private sector, particularly in agriculture. The purpose of APPP was to increase productivity in food cropping in terms of output per capita and yield per hectare. Specifically APPP sought to increase productivity by: 1) increasing the knowledge of farmers about improved technologies, especially the use of fertilizer and improved seeds; 2) increasing the availability and use of fertilizers; 3) increasing the supply and use of improved seeds; and 4) reducing infrastructural constraints in product and input markets. In addition to privatizing and revitalizing the seed and fertilizer industries, the APPP also provided local currency support for improving the Agricultural Extension Service and for improvement of the feeder roads system.

The local currency proceeds from the sales of the dollars in the auction were jointly programmed by USAID and the GOG; the CEDI equivalent of $9.7 million were programmed for feeder roads, $5.4 million for the Extension Service, $1.7 million for the AID Trust Fund, $1.1 million for the National Seed Program, and the remaining $2.1 million for policy studies, training, monitoring and evaluation.

Accomplishments

The major accomplishments of the APPP include:

1) The GOG met the conditions relating to privatization of the seeds and the fertilizer industries and eliminated explicit fertilizer subsidies.

2) The three tranches of dollars from the cash grant have been successfully released in auctions.

3) The feeder road program has made significant contributions to improving farmers' access to markets and services.

4) The Extension Service has increased its mobility, outreach capacity, and its training of front line staff. Notably, the Women's Extension Division is playing an important role in organizing rural women to benefit from the resources being provided and in improving living conditions of rural families.

5) Per capita output and yield have increased modestly during the period of the APPP; it is, however, impossible to attribute these impacts directly to the APPP because of weaknesses in the monitoring, evaluation, and impact assessment systems for the APPP.

The evaluation team found that the APPP was making satisfactory progress in implementing policy changes regarding privatization of the seed and fertilizer industries, in providing budgetary support for the Extension Service and for feeder road rehabilitation, and in providing funds for policy analyses and trust fund support. The monitoring and evaluation activities are inadequate and behind schedule. This notwithstanding, the implementation of the program appeared generally acceptable. There are, however, a number of issues which need to be addressed within each of the program elements.

A. Fertilizer Supply and Distribution

With the removal of the explicit government subsidy on fertilizers and with exchange rates determined in the foreign auction, fertilizer prices doubled in real terms during the period of the APPP (1987/88 to 1990). Fertilizer use fell during this period from an average of 11,000 metric tons of nutrient equivalent to 8,400 metric tons in 1990. At the same time, the Ministry of Agriculture has accumulated almost three years worth of fertilizers in its warehouse. Most of this has been provided by the international donor community as grants to the GOG. The Extension Service and parastatal Farmer Service Companies (FASCOM's) have continued to sell fertilizers. Furthermore, the GOG fixes the retail price of fertilizers and pays a rebate to private distributors on a progressive scale based on volume. These factors have all served to inhibit the private participation of fertilizer distribution.

Private fertilizer traders are unable to make profits from the government rebates; few dealers are entering the market. Dealers fear that the government will dump its stocks of what is becoming off-grade fertilizers onto the market at low prices. The presence of the government-owned FASCOMs (only 2% of the equity is owned by farmers) is also an impediment to private entry into the market for fertilizers. These conditions create uncertainty as to the role of government and the private sector and limit the participation of private entrepreneurs. One private firm has imported a significant amount of fertilizer (20,000 metric tons in bulk terms) equal to about a third of government stocks. Over a thousand individuals have registered as fertilizer dealers, but only about 50 are active in wholesaling and retailing.

Fertilizer Sector Recommendations:

1. Price controls and fixed margins should be eliminated to allow traders to profit from the marketing of fertilizers. The use of fertilizers will remain profitable to farmers at even higher prices, particularly with the use of improved seeds and appropriate techniques for production.

2. The government should get out of the fertilizer distribution business and limit its role to information, extension, dealer training, and quality control.

12'

3. FASCOMs should be divested from government ownership and forced to operate as private enterprises, or eliminated. At the least, they should be prevented from expanding beyond their current service areas.

4. Fertilizers donated to the government by other governments should be sold at auction to private dealers and not distributed by the Government of Ghana. Similarly, the GOG should auction off its existing stocks of fertilizers and it should be recognized that these materials will be sold at deep discounts because they have already deteriorated in quality. Alternatively, these materials should be sold through the FASCOMs as off-grade fertilizer.

5. USAID should provide technical assistance to the private sector in fertilizer procurement, transportation, storage, quality control and marketing.

B. Seed Industry

The Ghana Seed Company was closed in December of 1989. The government established a National Seed Certification Service and the production and sale of certified seeds was to become a purely private activity. While private seed production continues, there has not evolved a private seed marketing system.

The state of affairs at the time of this evaluation was one of confusion; private producers of certified seed did not know to whom they would sell and the GOG was seeking donor assistance to develop the seed industry. The components for a flourishing and growing seed industry exist, but there is a need to specify the policy framework for the existence of a private seed industry.

Seed Industry Recommendations:

1. The government should disseminate the policy framework for a private seed industry at a National Seed Seminar in February 1991. Seed growers, dealers, technicians and donor representatives should be invited to participate.

2. The National Seed Committee should include at least four representatives from the private seed producers, and the director of the National Seed Certification Service should be appointed.

3. The National Seed Committee should continue to review policy issues regarding the restructuring of the seed industry; these areas include legislation, research, production, quality control, certification, extension and marketing.

4. The donor community should consult continuously on the approaches they should follow in supporting the restructuring of the seed industry. Technical assistance is needed in all aspects of the industry.

13

C. Feeder Roads

The feeder roads program is having significant positive impacts even though the APPP targets (grading and reshaping of 700 km, regravelling of 155 km, improvements of 35 km and installation of 100 drainage structures and culverts) will not be fully met as a result of cost factors. Farmers and traders report that there is increased availability of consumer goods in the villages. Women traders are taking more produce to the markets. Savings in marketing costs have expanded the volume and diversity of products being sold to the market and areas under cultivation have expanded.

Technical and engineering aspects of the feeder roads program are acceptable. A labor intensive road construction technology has developed a viable private contractor enterprise and transferred valuable skills to private contractors and the rural population. Maintenance by voluntary village labor is effective for distances near the villages, but not viable where there are many beneficiaries and long roads involved.

Feeder Roads Recommendations:

1. There is still a need to improve the engineering and technical basis of the program, particularly regarding drainage.

2. Administrative bottlenecks regarding payments to contractors need to be resolved.

D. Extension Services

The APPP is providing budgetary resources to the extension service to increase the effective use of fertilizers and improve seeds. The APPP resources are directed at increased mobility and improved skills of extension agents as well as improved linkages between extension activities and agricultural research.

APPP support of the Extension Service Department of the MOA has increased their mobility, their frequency of training and the frequency of contact with farmers. The increased training of agents has significantly increased their knowledge of technologies and their promotional skills. The Women's Extension Service appears to produce positive impacts regarding access to credit, technology and improved home management practices.

All aspects of extension services need to be improved regarding the economic value of the recommendations being given. There is a need for improved technical content of many of the recommended practices.

Extension Recommendations:

1. Program planning, management, monitoring and evaluation need to be significantly improved. International technical assistance is required in all these areas.

2. Extension/research linkages need to be implemented, as well as linkages to private sector dealers in seeds and fertilization.

3. Extension services are spread too thinly over many regions and activities. In light of budget constraints, it is recommended that the extension service focus its activities on priority problems and regions, and that a smaller and better managed structure include an improved system of rewards for front line extension agents.

E. Monitoring and Evaluation

The APPP monitoring plan included: 1) dialogue between USAID and GOG on all aspects of the program; 2) technical meetings between USAID and the implementing agencies; 3) quarterly and annual operational and administrative reports; 4) field trips by GOG and USAID staffs; and 5) annual audits of implementing agencies.

Impact evaluation was to be achieved through special studies and with use of the Ghana Living Standards Survey (GLSS). These impact evaluation activities are seriously behind schedule.

Reporting and monitoring requirements are not being met. There is no baseline data for impact assessment. There have been no audits of implementing agencies. In the absence of baseline data and an operating information system it is not possible to measure quantitative or qualitative changes attributable to the APPP directly. While the reporting delays are significant, they appear not to have impeded program implementation. However, the delays in reporting could cause implementation problems to go unnoticed and uncorrected.

Planning for impact assessment is incomplete; the impact monitoring plan was drafted in October 1989, but has not been approved nor implemented. The linkage between process indicators and impact measures is not well defined in this plan.

Recommendations

1. An impact assessment scheme should be re-designed in light of a careful review of the linkages between program actions and expected impacts.

2. USAID should support the development of enhanced capacity for monitoring and evaluation within the MOA.

15

3. The GLSS should be used as the baseline for impact evaluation.

General Recommendations

1. USAID should continue support for APPP activities for another three to five years.

2. USAID and other donors should support confidence building measures for privatization through technical assistance to the private sector and continued policy dialogue with the GOG towards an improved policy framework for private entrepreneurial activities.

3. The rural financial system and the marketing system need to be enhanced to support greater private involvement in input and product marketing. Inflation and financial sector rigidities are serious impediments to private risk taking by entrepreneurs. Infrastructure bottlenecks also require increased public investments e.g., in feeder roads.

16

Table of Contents

EXECUTIVE SUMMARY i

1.0 PROGRAM DESCRIPTION: AN OVERVIEW 1

2.0 PURPOSE OF THE EVALUATION 4

3.0 EVALUATION METHODOLOGY 5

3.1. Team Composition 5

3.2. Methodology 5

3.3 Factors Affecting the Evaluation 5

4.0 FINDINGS AND RECOMMENDATIONS 7

4.1. Program Implementation 7
4.1.1. Program Conditionalities 7
4.1.2. Release of Funds & Local Currency Disbursement 7

4.2. Privatization of Fertilizer Supply and Distribution 7
4.2.1. Findings Regarding Fertilizer Privatization 8
4.2.2. Recommendations for the Fertilizer Sector 10

4.3. Seed Industry Restructuring 11
4.3.1. Findings Regarding the Seed Industry 12
4.3.2. Recommendations for the Seed Industry 12

4.4. Feeder Roads 13
4.4.1. Findings on Feeder Roads 15
4.4.2. Recommendations Regarding Feeder Roads 17

4.5. Agricultural Extension 18
4.5.1. Findings Regarding Extension Services 19
4.5.2. Recommendations for Extension Activities 20

4.6. Agricultural Marketing and Credit 21

4.7. Program Implementation, Monitoring and Impact Assessment 23
4.7.1. Findings Regarding Monitoring and Evaluation 23
4.7.2. Recommendations Regarding Monitoring and Evaluation 26

5.0 OVERALL ACCOMPLISHMENTS AND RECOMMENDATIONS 29

Table of Contents(continued)

6.0 LESSONS LEARNED 30

ANNEXES

Annex A: Program Implementation, Monitoring and Impact Assessment A-1

Annex B: Fertilizers and Privatization of the Fertilizer Industry B-1

Annex C: Seed Industry Privatization C-1

Annex D: Evaluation of Feeder Roads Component D-1

Annex E: Assessment of Agricultural Extension Activities E-1

Annex F: Productivity Assessment and Economic Issues F-1

Annex G: Terms of Reference for the Mid-Term Evaluation of APPP G-1

Annex H: Logical Framework - APPP H-1

Annex I: Map of Ghana I-1

Annex J: Individuals Contacted during the Evaluation J-1

Annex K: Documents Reviewed during the Evaluation K-1

Introduction to the Evaluation Report

The main body of the report is presented as a summary of the findings and recommendations in the general format required by the AID Evaluation Handbook. The scope of work was supplemented with technical directions from USAID staff during the course of the evaluation. The main findings and recommendations that are presented in the body of the report are bas . on individual reports. Because of the nature of the sectoral assistance program and its components, it was not possible to fully integrate all the relevant portions of the individual reports into the "Findings and Recommendations". The reader is directed to relevant annexes for details on each of the sections discussed under "Findings and Recommendations".

1.0 Program Description: An Overview

The Agricultural Productivity Promotion Program (APPP) was initiated in 1988 and is one of AID's first non-project initiatives under the Development Fund for Africa. The Program Grant Agreement with the Government of Ghana (GOG) was signed on August 28, 1988. The overall strategy was to (a) reinforce the major accomplishments and process of the Economic Recovery program (ERP) started by GOG in 1983 and (b) to encourage the GOG to continue the actions and policies initiated under a structural adjustment program.

The APPP was designed to accomplish the strategy by providing a $20 million cash grant from the AID Development Fund for Africa (DFA) to the GOG for auction by the central bank (the Bank of Ghana) and by using the local currency generated by the auction to provide selective budgetary support to the agricultural sector. These actions are expected to help the GOG undertake policy reforms that were outlined in a Policy Framework Paper (PFP) negotiated with the World Bank and the IMF.

An important element of the Policy Framework Paper (PFP) was privatization and divestiture of state owned enterprises (SOE's). Two policy reform actions relevant to the APPP were (1) privatization of supply and distribution and elimination of subsidies on fertilizers and (2) revitalization of the seed industry with emphasis on private sector participation in the production and distribution of certified seeds. The release of funds was based on the GOG policy reforms in these two areas. In both cases, conditionalities included preparation and review of detailed implementation plans for privatization.

The grant was obligated in three tranches: $4.5 million in FY 1988, $7.5 million in FY 1989 and $8.0 million in FY 1990. Local currency (cedis) proceeds from the auction were programmed for budgetary support to the following program elements:

	TRANCHES ('000s)		
	Programmed		Planned
	1st	2nd	3rd[1]
Rural Feeder Roads (MRH)	2000	5700	2000
National Extension Service (MOA)	3368	332	2000
Policy Studies*	74	--	--
USAID Trust Fund	297	861	540
Monitoring Evaluation Training	200	--	--
Training, Monitoring & Studies	--	327	275
National Seed Program	--	467	637
Other (to be programed)	--	924	--
Total	5940	8611	5449

[1]Policy Studies and seminars were combined with monitoring and evaluation in the 2nd and 3rd tranches. The 3rd tranche was released in November 1990 and was yet to be programmed by GOG as of 12-6-90.

APPP Strategy

Agriculture plays a predominant role in the economy of Ghana. Policy reforms and other actions under the ERP have stimulated increased production of export crops (cocoa, and other export crops) and timber, but the response of food crops has been disappointing. Per capita cereal production dropped from 80 KG in 1974-75 to 55 KG in 1983-87. Until the APPP, yields had remained stagnant at about 1.0 MT/HA for both maize and rice since 1970. Major causes of low yields in food crops were identified as low rates of application of modern inputs (seed and fertilizers), deteriorated rural infrastructure and irrigation facilities, and inadequate transfer of technologies to farmers through the extension services.

APPP seeks to promote increased food production by increasing farmer efficiency and productivity through the application of modern technologies and the reduction of institutional deficiencies and infrastructure constraints. APPP's strategy is to support activities and policies that deal with the major constraints. These include the privatization of fertilizer supply and distribution, the revitalization of the seed industry, the improvement of feeder roads and other rural infrastructure, and institutional improvements such as strengthening of the agricultural extensions service. In addition, APPP was to support policy studies to increase knowledge about the agricultural sector and the causes of low productivity, and to help the GOG, USAID and other donors to make more informed decisions concerning the sector[2].

Regarding fertilizers, research and experience has shown that the timely application of the correct type and amount of fertilizer would be a most important factor for improving cereal yields in Ghana. The GOG and World Bank had previously identified monopoly government control and management of fertilizer supply as an urgent problem. They had agreed on a plan to gradually privatize the system. Implementation of the agreed reforms had been delayed, however.

Seed Industry: Improved seeds were also considered as a key contributor to higher yields in cereals production. The Ghana Seed Company (GSC) was the largest supplier of improved seeds in Ghana. The seed industry was not meeting farmers' demand for improved seeds. Privatization of the GSC was considered an important and essential step to ensure self-sustaining supply of improved seed by a revitalized private seed industry. The low quality seeds and the poor distribution record of the GSC discouraged farmers' use of improved seed. Importantly, as long as the GSC existed as a parastatal, it was expected that revitalization and expansion of the industry and private sector participation would be handicapped. By privatizing or restructuring the GSC, the GOG would illustrate its commitment to strengthening the industry, as well as demonstrate its resolve to eliminate unproductive drains on its limited resources. Both the GOG and the World Bank were planning to pursue the revitalization of the entire seed industry under Structural Adjustment

[2]Rural Credit was recognized in the PAAD as a major constraint in the adoption of technology, but because of the weak institutional capacity of banks and the inappropriate credit policy environment to meet small farmer needs, it was considered premature to support rural credit within the APPP.

21

Credit-II (SAC II), and recognized USAID as the lead donor for privatizing the GSC. This was based on USAID's long experience with the company.

Agricultural Extension: Studies in Ghana have shown that agricultural extension is critical for helping farmers learn about the value and use of fertilizer, improved seeds and other modern farming technologies. While many agencies and projects in Ghana have been providing agricultural extension services to farmers, the most important is the Ministry of Agriculture (MOA). Unfortunately, the MOA extension service has not adequately fulfilled its role. With World Bank and other donor support, the MOA was addressing the institutional causes for extension's poor performance, and undertaking the reorganization and consolidation of various extension services. Other major constraints to improved extension service were not being addressed, except in limited geographical areas. Important among these constraints are lack of training of front line extension workers and logistical support for extension personnel. Almost all GOG budgetary resources that were available were required to pay salaries. Few funds were available for training, travel and other normal and necessary non-salaries expenses of extension service employees.

Rural Infrastructure: Weak rural infrastructure, particularly feeder roads, was universally cited in Ghana as a primary cause for lagging agricultural production. Without the ability to market their crops, farmers have less incentive to produce them. Poor infrastructure also contributed to the unavailability and/or increased costs of agricultural inputs. While Ghana has a relatively well-established feeder road network of over 21,000 kilometers, the network has deteriorated in recent years to the point that 4-wheel drive vehicles are required year-round throughout 57% of the network. Another 24% of the network requires 4-wheel drive vehicles during the rainy season. This situation is a major constraint to increasing farm output and the principal reason for the high marketing costs for food crops. About 40% of the retail price of food is absorbed by marketing costs; much of this is attributed to transportation.

The Department of Feeder Roads (DFR) of the Ministry of Roads and Highways was undertaking a dynamic program to improve this situation with substantial assistance from the World Bank and other donors. Additional local currency resources from APPP was to enable DFR to more fully utilize its expanding capacity, especially the local private contractors which it employed for feeder road rehabilitation and improvement.

Policy and sub-sector studies were supported under the APPP to fill important information gaps concerning agriculture and to contribute to more informed policy and investment decisions.

2.0 Purpose of the Evaluation

This is the mid-term program evaluation commissioned by USAID/Ghana as required in the PAAD. Its purpose is to examine program implementation and assess program accomplishments against targets set for each of the following activities:

(1) policy outputs, fertilizer and seed privatization, feeder roads, extension, and policy studies,

(2) assess internal and external factors influencing the accomplishments, and

(3) make recommendations concerning any future USAID initiatives in program assistance and comment on lessons learned from program assistance to Ghana under the Development Fund for Africa.

3.0 Evaluation Methodology

3.1 Team Composition

USAID obtained the services of a team consisting of the following specialists:

1.	Sanath K. Reddy, Team Leader	REDSO/WCA	25
2.	Vehi Toure, Fertilizer Privatization	REDSO/WCA	20
3.	Tej S. Mathur, Engineering Officer	REDSO/WCA	20
4.	Seth Vordzorgbe, Ag. Economist	Consultant, Ghana	18
5.	Donald L. McCune, Fertilizer Specialist	Sigma One Corporation	26
6.	John Harding, Seed Specialist	Sigma One Corporation	26
7.	Carl Van Haeften, Monitoring & Evaluation Specialist	Sigma One Corporation	20

18

3.2 Methodology

The evaluation team gathered information, data and opinions from representatives of various organizations and from farmers, both men and women. Documents and Reports of USAID, various agencies of Government of Ghana and other donors were also consulted. A list of documents consulted is presented in Annex K. Consultations, discussions and exchange of views were held with representatives from the following organizations: USAID, World Bank, FAO, EEC, Global 2000, and a fertilizer import company (WIENCO). GOG Agencies consulted were Department of Extension Services, Director of the Policy Planning Monitoring and Evaluation Department of the Ministry of Agriculture, Department of Crop Services, Department of Feeder Roads, Crop Research Institute (Kumasi), Director of FASCOM -- Upper East, Secretary of the APPP Coordination Committee (Ministry of Finance and Economic Planning), and Regional and District level staff (Volta, Brong-Ahafo, Ashanti, Northern Region). A list of individuals contacted is defined in Annex J.

The team visited four regions (Volta, Ashanti, Brong-Ahafo and Northern Region) and met with the regional level political and administrative authorities and district level officials of the departments receiving APPP funds. At each place the team held discussions with groups of farmers, seed producers and fertilizer retailers. The team also visited villages with feeder roads constructed and/or rehabilitated under the APPP and held discussions with beneficiaries on the impact of extension activities and feeder roads.

3.3 Factors Affecting Evaluation

The APPP project has just entered the third year of its three year projected life. The observations and findings reported under various activities have to be viewed in the context of several factors. For instance food production in Ghana is highly dependent on the rainfall pattern. The 1990 crop season was affected by poor and untimely rains. Fertilizer subsidy removal and exchange rate adjustment have increased the 1990 prices by 300 percent in nominal terms, compared with the prices in 1987-88. This is a real increase of approximately 100%. Similarly the situation regarding the availability of improved seeds

24

has remained stagnant and unsatisfactory. Also, experiences in Ghana and elsewhere have demonstrated the importance of the linkages between technology and the supporting systems (credit, storage, marketing) as necessary conditions for increasing production and productivity. The APPP has focused only on a limited set of these aspects. All the above factors could have affected the anticipated increases in productivity and production. The short period of implementation makes it difficult to generate the kind of sector wide impacts which might be ultimately produced by the program activities.

There are no data to make an assessment of impacts. Impact studies commissioned under APPP are in process. Data from the program activities were supplemented with information from secondary sources, other related projects, interviews with farmers and interviews with implementing agency personnel.

25

4.0 Findings and Recommendations

4.1 Program Implementation

4.1.1 Program Conditionalities

The release of the US$20.0 million grant was tied to policy reform measures to be undertaken by the GOG with respect to:

(a) removal of fertilizer subsidies and the privatization of fertilizer supply and distribution, and

(b) privatization/restructuring of the seed industry.

These actions were in line with policies under the Economic Recovery Program (ERP) and had been agreed upon by the GOG and World Bank under its Agricultural Services Rehabilitation Project (ASRP) in June 1987. The Development Credit Agreement for ASRP provided for a detailed implementation plan for the removal of subsidies and privatization of supply and distribution of fertilizers. The conditionalities of ASRP for revitalizing the seed industry were somewhat less specific. The conditionalities of APPP relative to the seed industry were, however, more specific and provided target dates for actions to be taken.

All conditionalities were fulfilled by the GOG and USAID has released the three tranches (US$ in millions 1st 5.94; 2nd 8.611, 3rd 5.499) of the cash grant. The third and final tranche was released in November 1990.

4.1.2 Release of Funds and Local Currency Disbursement

The release of dollar funds by USAID following the fulfillment of conditionalities has been timely. The auction system has been working satisfactorily. The accounting for dollars provided through the auction system and disbursement of local currency (cedis) by the Bank of Ghana to a special account managed by the Ministry of Finance and Economic Planning (MFEP) is transparent and easy to track. Disbursement of funds from the special account of MFEP to the implementing agencies follows the approval of budgets by MFEP and USAID. Delays have been reported in the approval of budgetary requests submitted to MFEP by the implementing agencies. This is reportedly tied to the overall GOG budgetary processes. The delays have not adversely affected the implementation of planned activities.

4.2 Privatization of Fertilizer Supply and Distribution

Privatization of fertilizer supply and distribution was among the major policy reforms to be undertaken by the Government of Ghana (GOG) under the Agricultural Services Rehabilitation Project (ASRP). This effort included two key elements: (a) gradual reduction of subsidies starting with 30% reduction in 1988 crop year to 100% elimination of fertilizer subsidies in 1990 and subsequent crop years, and (b) a program of privatization

26

of fertilizer supply and distribution. This privatization approach was supported by USAID under the APPP and conditionally was built into the program design with specific actions and target dates tied to the release of the first, second and third tranches. All the conditionalities have been met and program funds have been released. This has resulted in (1) the elimination of fertilizer subsidies and sale of unsubsidized fertilizer in the 1990 crop season; (2) private sector importing of fertilizer, and; (3) increases in private sector wholesaling and retailing. A private firm, WIENCO, imported 20,600 tons of fertilizer in 1990. A number of individuals (approximately 1160) were registered as wholesalers and dealers. However, only about 50 are actively participating in wholesaling and retailing.

Although the policy reforms regarding the removal of subsidies and launching of private sector importing and retailing are major accomplishments, there are several serious problems facing further progress in privatization of the fertilizer industry. These are described below as findings and recommendations (for details see Annex B).

4.2.1 Findings regarding Fertilizer Privatization

1. Prices of fertilizers increased as a result of the elimination of subsidies and from exchange rate adjustments. Fertilizer use has fallen to an estimated sale of 8400 tons of plant nutrient in 1990 compared to 29,000 tons of plant nutrient sold in 1981, 10,800 tons in 1988 and 11,340 tons in 1989.

2. With the decline in fertilizer use, large stocks of fertilizers have accumulated in the MOA warehouses (about 68,000 tons of gross product compared to 25,000 tons of product sold in 1990).

3. The GOG maintains fixed prices for fertilizers; rebates tied to volume of purchases are used to compensate private traders. The rebates on purchases of less than 500 bags are not enough for retailers to make adequate profits. Thus, few dealers are entering the market and those that do enter are selling small quantities in limited market areas. (See also Annex F Section 2-B).

4. The continuing role of the public sector in the fertilizer industry is of grave concern to the private dealers. Continued direct sales by the Extension Service and Global 2000 program (in 1989 these used about half of the fertilizers sold in Ghana) of fertilizers purchased directly from the MOA or from parastatal Farmers Service Companies (FASCOMs) put a damper on the sales by private retailers.

5. Lack of clear statements of GOG policies regarding prices, margins, taxation and fees, are affecting the dealers, wholesalers and importers in an adverse manner.

6. Although privatization has occurred on a small scale, a serious impediment to the growth of the private sector is the lack of definition as to what constitutes a private wholesaler or retailer. The role that the FASCOMs will be allowed to play is of special concern. FASCOMs were originally created in the Upper and Volta regions under World Bank financed development projects. Their main purpose was the distribution and marketing of fertilizers and other inputs for these projects. The

27

FASCOMs are primarily GOG owned parastatals with about 10% participation from the Housing Development Bank and the Agricultural Development Bank, about 2 percent shares are owned by the farmers. The share of capital for farmers was to have accumulated as a result of rebates to the farmers who patronize the service centers. With the announced GOG policy of privatization of fertilizer supply and distribution there is uncertainty as to what, if any, role FASCOMs can or should play. FASCOMs do have a valuable network of storage and service centers that should not be lost. A satisfactory solution must be found and announced if there is to be true competition in the marketplace. Some see FASCOMs qualifying as private enterprises and that they should be allowed to expand countrywide. Others see the FASCOMs as parastatal organizations with no role to play in a privatized fertilizer sector. Still there are others who feel that FASCOMs should be restricted to wholesaling. It was reported that the World Bank which created the FASCOMs feels that the FASCOMs should continue to play an important role and that there are plans to reorganize FASCOMs in about 2 years to qualify them as private sector businesses. It has not been possible to obtain any details as to the specifics of the plans for reorganization.

7. The need for fertilizers for increasing production is recognized by farmers in Ghana. A recent survey of 1200 farmers in five ecological zones shows that 18% of the small farmers and 87% of the medium and large farmers used fertilizer in 1989. It was also reported that 30% of the small farmers surveyed have used fertilizers at sometime.

8. Various programs especially Global 2000 have clearly demonstrated that fertilizer use is profitable, and that large increases in cereal production are possible when adequate fertilizers are available to farmers along with improved seeds, cultural practices and advice. In trials by Global 2000, increases of 10 or more kgs of grain (maize and sorghum) per kg of nutrient were common throughout the country. In 1987, the average yield of maize, in one hectare production test plots (PTP's) under farmers' management, was 2.84 tons per hectare compared with an average yield of 1.34 tons under the traditional practices. On average, yield increments of 1.98 tons/ha were obtained for sorghum from 1095 test plots in 1987.

   In 1989 the fertilizer recommendation was two (50 kg) bags of 15-15-15 or 20-20-0 plus two bags of Ammonium Sulphate. This represented a total expenditure of ¢11,700 per hectare. With an increase of 5 tons of maize per hectare and a price of ¢5000 per 100 kg bag of maize, additional revenues of ¢7500 were obtained by farmers, this is a 6:4 ratio of benefits over cost.

9. The success of the Global 2000 program, which reached about 85,000 farmers directly in 1989, was due not only to the use of fertilizers and other inputs by the farmers but also to the provision of credit and technical assistance, including storage to reduce post harvest losses. The storage and credit assistance allowed farmers to avoid forced sales immediately after harvest when prices are most depressed.

28

10. A privatized fertilizer supply and distribution sector requires certain services that can best be provided by the public sector. These services are quality control, dealer training at all levels, and information services required for good planning of fertilizer import, storage, distribution and sales. In the early stages of the development of the private sector in fertilizers, such activities have to be sponsored by the public sector. These services could be provided by the existing public services (Crops Services Department, Extension Services Department and Statistical Service) without additional expenditures.

4.2.2 Recommendations for the Fertilizer Sector

1. Much of the decline in fertilizer use is attributed to a rapid increase in fertilizer prices due to the removal of subsidies and exchange rate adjustments. Since these drastic price increases are occurring at the same time as privatization of the industry, many farmers and possibly the general public, have the impression that it is due to privatization and excess profit making by the dealers. It is recommended that the Ministry of Agriculture and other agencies take steps to dispel this incorrect impression. This should be done soon through publications, newspapers, television and radio.

2. FASCOMs should not be regarded as private enterprises if they remain organized and operated with significant government support. As an interim measure to manage the transition to private sector wholesaling and retailing, FASCOMs should be confined to those regions for which they were created. This interim period should last no more than three to four years. Furthermore, the extension service should restrict itself to advice and training and should not be involved in fertilizer sales.

3. Price controls should be lifted. Should it be decided to continue the practice of fixed retail prices, it is recommended that the volume discounts offered to retailers be increased for small retailers and dealers who cannot buy in quantities larger than 50 bag lots. Similarly, consideration should be given to off-season discounts to encourage fertilizer movements in the off-season. This would alleviate storage problems at the regional and district warehouses and would provide incentives to retailers who have their own storage.

4. There is widespread need for credit at all levels of the fertilizer trade and use. Credit on reasonable terms will do much to encourage a dynamic and competitive fertilizer industry. It is recommended that appropriate credit schemes be developed and their terms be broadly disseminated in a clear and precise manner. It is further recommended that the donor organizations provide opportunities for senior staff of commercial banks to observe the functioning of successful credit systems in other developing countries.

5. The GOG should develop appropriate policies relating to the sale of donated fertilizers. Two options are recommended in this regard: (a) the GOG must make every effort to seek equivalent cash donations (rather than fertilizers), or (b) should

29

donors still want to furnish fertilizer, the GOG should auction the donated fertilizers to the private sector wholesalers and retailers as soon as it arrives in Ghana.

6. The GOG should develop a policy relating to the sale or lease of the fertilizer storage facilities of the Ministry of Agriculture and publish the terms and conditions of sale or lease.

7. The Crop Services and Extension Services Departments should initiate fertilizer dealer training programs at the regional level before the beginning of the main cropping season in 1991.

8. Regarding the large fertilizer stocks with the GOG, it is recommended that these be sold to FASCOMs. This would encourage the private industry to begin importing at an early date. Further, off-grade fertilizers should be sold as off-grade-material. They should be priced, advertized and auctioned as off-grade material.

9. It is strongly recommended that full-time technical assistance over a 4-5 year period be provided to cover the following areas: procurement and marketing, transport, storage and handling, wholesaling, retailing and pricing, quality control and specifications, and credit.

4.3 Seed Industry Restructuring

The purpose of APPP is to increase productivity in food crop production. One of the means of achieving the purpose was through "increasing the supply and use of improved seeds through the revitalization of the seed industry" (PAAD, p. 26). The strategy adopted was to support the policy reform effort under the Economic Recovery Program (ERP) and reinforce the GOG commitment under the World Bank's ASRP which called for "rehabilitation and strengthening of the Seed Company".

One result of the GOG's plan for restructuring the seed industry was the closure of the parastatal, Ghana Seed Company (GSC), in December 1989. This action demonstrated beyond a doubt, the GOG's commitment to restructure the seed industry with a strong role for private sector participation. The basis for the decision was that the production of certified seed for sale to farmers should be a private sector commercial activity. Following the closure of the Ghana Seed Company, a number of processes were initiated which resulted in a proposal for "The Ghana Seed Industry Project" in November 1990.

The GOG requested the World Bank's assistance in funding a study "Restructuring the Ghana Seed Industry" (Chopra and Douglas, December 1989) subsequent to the closure of the GSC. This is an extensive report outlining in detail all aspects of seed industry development and provides guidance on restructuring seed programs. In July 1990 the World Bank commissioned a further study to develop a project paper based on Chopra and Douglas report. This resulted in a working paper called "Seed Industry Development Project". It focused on seed production and institutional development and was estimated to cost $3.6 million over a five year period. The Crop Services Department (CSD) revised the above paper in November 1990. "The Ghana Seed Industry Project" was estimated to

30

cost $4.31 million over a three year project. This paper is the first indication of the direction of the Ministry of Agriculture relative to the restructuring of the seed industry.

The proposal is not detailed enough for a project of its size and focuses on building the public sector as a means of supporting private sector. (more details are presented in Annex C)

4.3.1 Findings Regarding the Seed Industry

1. The closure of the GSC in December 1989 sent a clear message to the rudimentary seed industry that restructuring would occur. One immediate result was confusion among the seed growers who were accustomed to selling seeds to the GSC.

2. While the donors have embarked on studies and proposals, seed growers are still producing seeds, often of doubtful quality, with little prospects for marketing as seeds. There are no clear directions as to the involvement of the private sector and its representation, the National Seed Committee (NSC). Seed growers, large and small, are anxious about the future and their participation in the restructured seed industry. They were not yet aware of any specifics of restructuring and have not been consulted on their views regarding the seed industry.

3. There are a number of seed growers, large and small, who are willing to invest the necessary resources in seed production activities. However, they need to be appraised of the risks and opportunities of the seed enterprise and the changed role of government agencies for technical assistance, seed inspection, quality control, and certification and promotion of improved seed use.

4. Both USAID and the World Bank have committed funds or expressed interest in supporting the restructuring of the industry. APPP second tranche has allocated $467,000 for seed sector restructuring. The third tranche allocated $637,000.

5. There is a lack of a clear action plan to review the proposed "Ghana Seed Industry Project" (Item 4), form a national seed committee and operationalize various steps to create a seed industry.

4.3.2 Recommendations for the Seed Industry

1. It is recommended that the following steps be urgently taken by the GOG to move with the restructuring process for the seed industry.

   The Ministry of Agriculture should sponsor a national seed seminar for the purpose of (a) sharing the seed industry restructuring plans with interested government agencies, the private sector and the donors, (b) obtaining private sector suggestions and comments on the proposed restructuring, and (c) obtaining private sector representation on the national seed committee. This seminar should be held by February 15, 1991.

31

Prior to the National Seed Seminar, the MOA should (a) inform the seed growers in the principal seed production regions about the purpose and date of the seminar, (b) help form regional seed growers associations, and (c) advise the regional seed growers associations to nominate four persons to participate in the national seed seminar. This should be completed by January 15, 1991.

2. During the seminar, seed growers should identify their representatives to serve on the National Seed Committee (NSC).

3. The GOG should announce the creation of the National Seed Service (NSS) and fill the position of the Director with necessary office and secretarial facilities by January 1, 1991 or earlier so that they can coordinate all the activities relating to the revitalization of the seed industry.

4. It is recommended that the GOG and the newly created NSS convene the National Seed Committee to review the policy issues, proposed roles for both private and public sector and to review the proposed "Ghana Seed Industry Project". This should be done by March 1, 1991.

5. The GOG, with APPP funds, should take immediate steps to put into place the Ghana Seed Inspection Unit (GSIU), as an integral part of the Ghana Seed Industry, to register, inspect and certify seed growers for the 1991 crop season so that improved seed will be available to farmers for the 1992 planting season.

6. Representatives from USAID, the World Bank and other donors (CIDA/GTZ) should meet to develop a coordinated plan of action to support the restructuring of the seed industry and to identify the lead donor responsible for coordinating donor assistance and monitoring of progress (Target Date: January 30, 1991). A working committee of key donors should be set up to meet periodically to coordinate various actions. Identification of the lead donor is essential to coordinate donor involvement and avoid confusion and duplication of efforts and to standardize equipment procurement and seed certification standards. It is recommended that USAID take the lead role in this effort.

7. It is strongly recommended that technical assistance be provided to the National Seed Service to assist in the development of the seed industry and advise NSS in the various processes toward private sector participation in seed production and marketing.

4.4. Feeder Roads

A deteriorated rural road network has been cited in Ghana as a primary cause for lagging agricultural production and for contributing to the increased costs of agricultural inputs and for lack of access to output markets. In order to achieve the purpose of APPP it was considered necessary to alleviate infrastructural constraints to reduce input and marketing costs through the improvement of feeder roads. APPP planned an investment of $6.0 million over the life of the program to provide budgetary support to the Department

32

of Feeder Roads (DFR). This was increased to $7.7 million in recognition of the importance of feeder roads. The following activities were proposed in the PAAD: (a) grading and reshaping of 700 Km, (b) full regraveling of 155 Km, (c) spot improvements 35 Km, and (d) installation of 100 drainage structures and culverts.

The Department of Feeder Roads (DFR) in the Ministry of Roads and Highways is the GOG implementing agency. DFR is responsible for the management of about 22,000 Km of feeder roads network in Ghana. DFR was created in 1981 and has rapidly expanded since then. Institutional analysis of DFR was conducted in May 1990 under a World Bank sponsored study. The details pertaining to the strengths and weaknesses of DFR are discussed in Annex D, Attachment A. The following observations of the World Bank study are relevant to the activities of DFR under APPP.

-- Lack of trained manpower at the middle management level; unfavorable salary scale compared to private sector and sister agencies; lack of preparedness for future rehabilitation and maintenance planning needs; inadequate scope offered for increased voluntary participation in routine maintenance; and lack of full procurement capacity.

-- A strategy for future donor support should be developed so that the pace of rehabilitation does not exceed the capacity to maintain roads. Donor programs must focus on supporting the development of regional institutional capacity.

-- The payment system should be streamlined and some approval and payment responsibility be transferred to the regional level.

-- The channels of communication between agencies which have bearing on feeder roads planning should be reinforced at national and regional levels.

The DFR strategy of program implementation is to have rehabilitation and improvement work performed through contracting, while reshaping (recurrent work) is to be done both through contracting and force account. Routine maintenance is expected to be performed almost entirely by the participating communities. For this purpose, village, central and district level committees have been established. The work is performed by community members under the guidance of DFR foremen. Volunteers from the villages are trained in road maintenance and a set of hand tools is provided to each village. A district level committee of Government officials and prominent citizens helps organize routine maintenance work by village communities.

The DFR currently employs two methods of road constructions, a capital intensive method and a labor intensive method. The latter was introduced in 1986 under a pilot project sponsored by UNDP and ILO. The labor intensive approach was found to be 15% cheaper and had positive impact on rural employment and local economy. To implement the labor intensive method, selected contractors and their employees were given six-month training along with DFR engineers and technicians. Contractors completing the course were provided with a $160,000 bank loan repayable in 4 years. During the period 1987-90, 39 contractors had been trained in the labor intensive technique.

33

The evaluation team visited a sample of ten feeder roads, of which 7 were completed and three were under construction-rehabilitation. Discussions were held with DFR staff, contractors and groups of beneficiaries from the villages. A summary of various observations is presented below as findings and recommendations. For details see Annex D "Evaluation of Feeder Roads Component".

4.4.1. Findings on Feeder Roads

1. The feeder roads are having a significant impact on a number of fronts. Although reliable impact evaluations are yet to be initiated, the following will illustrate the nature of emerging impacts.

   (a) Increased access to market towns is promoting forward and backward rural-urban linkages. Farmers and women reported increased availability of consumer goods in the villages (soaps, kerosene, milk products, canned goods, etc.) and the ability of women to take farm produce (yams, plantain, vegetables) to weekly markets for sale to return with meat and fish for resale in the village.

   (b) Ability to market produce at the village level is being enhanced. In one village farmers reported that cocoa collection trucks have started coming right up to the village to collect cocoa which earlier was carried as head-load over a stretch of 2.5 Km. The average cost saved per farm (cocoa producer) in the village was calculated at $60-$90.

   (c) Increased access to markets, transportation, services, diversification of products marketed, expansion of area cultivated, reduced transportation costs have resulted from the feeder roads program (details are presented in Annex D).

      -- Charcoal and fish shipments to Accra have increased (Wusuta Vakpo-Tsoxare Road, Volta Region).

      -- Area under food crops has increased. One farmer reported an increase from 6 to 10 acres for tubers, cassava and plantain and an increased income of ¢60,000 or $180-$185 (Techiman-Mesidan-Buoyam Road, 11.8 Km, Brong Ahafo region). A second farmer in the same village reported increase in area under vegetables from one-half to three acres and increased the number of baskets shipped to market from 20 to 200 and reported an increased income of ¢500,000 or $1450, approximately.

      -- Increased traffic: The number of trucks and bush taxis per day increased from none to 10 and 6 respectively (Asekye-Busunya Road, and Brong-Ahafo region). Similarly, a village in the Northern Region reported increased traffic from 3 vehicles to about 25 after road

34

rehabilitation. Earlier, this village depended 100 percent on head loading (Tamale-Bamrim-Daborshie Road, 16 Km, Northern Region).

-- Reduced transportation costs: Transportation costs showed mixed results because of a three-fold increase in fuel costs. Either they remained constant or increased somewhat reflecting increased fuel costs. In several instances, the villages had no access to vehicular transportation before rehabilitation of the roads.

2. Inspection of the ten feeder roads indicated that the engineering quality was generally good and that the DFR staff were hardworking and enthusiastic about the program. Technical aspects of road and specifications are of acceptable quality.

3. DFR staffing levels, especially at the senior engineer and technician levels, are significantly lower than what would be required considering the magnitude of the present and planned feeder road improvement activities under APPP, the World Bank and EEC. A World Bank investment program of $90 million is under consideration. EEC is also expected to provide funds for rural feeder road programs although no specific levels are indicated at this time. In 1982 there were only five engineers; as of December 1990 there were 33 engineers compared to a total requirement of 67 for the whole of the DFR.

4. It was observed that DFR staff would need additional training in the specific area of low-volume road construction and maintenance as well as in management.

5. An in-country training program developed under an UNDP-ILO program to train DFR staff and contractors in labor intensive road construction methods has served a useful purpose and needs to be institutionalized. Continuity of this donor funded training program is uncertain.

6. Labor-intensive road construction technology has developed a viable private sector contractor enterprise and transferred valuable civil construction skills to contractor firms and the rural population.

7. The present allocation of funds in the DFR budget will not meet the maintenance cost of rehabilitated roads. Therefore, the sustainability of maintenance of the feeder road network will emerge in the near future as a major issue facing GOG budgetary resources. Maintenance of feeder roads by voluntary labor from the beneficiary villages is a cost-effective idea. However, it appears unrealistic in several cases where a number of beneficiary entities are involved and lengths of the road are large.

8. The interim payment procedures appear to be unduly long (60 days or more) and require the approval of a large number of regional, departmental and Ministerial level officers. This poses hardship for small contractors in maintaining construction schedules and consumes contractor time in tracking the paper though the bureaucracy.

35

9. The criteria employed in the selection of feeder roads for rehabilitation were noted to be satisfactory. Although not a serious issue, there appears to be a need for improved coordination with the Ghana Highway Authority, as was observed in the Northern Region where the rehabilitated feeder road could not be fully exploited because the trunk road to which it connected was under severe deterioration.

10. Implementation monitoring of this component both by DFR and USAID through REDSO/WCA support is satisfactory.

11. Performance of this component and the implementing agency (DFR) has been creditable. DFR has committed all the funds received under 1st and 2nd tranches, $2.0 million and $5.57 million respectively. Table 3, Annex D, shows targets and achievements under APPP. However, physical achievements remain far below their targets because large sections of road were in poor condition and this increased the costs of rehabilitation and maintenance. It is clear that all physical targets prescribed in the PAAD will not be met due to increasing costs. Cost structure of rehabilitation and maintenance is shown in Annex D.

4.4.2. Recommendations Regarding Feeder Roads

1. DFR should review its techniques of construction in the areas noted below and take steps to implement changes.

   (a) The DFR should consider construction of fords (also called causeways and radiers), instead of regular culverts, in areas like Northern Region, where the topography is relatively flat and the flood discharge is large.

   (b) Provide frequent road bars on steep roads to prevent erosion of road surfacing.

   (c) Do not build culverts on road-fill. One such structure was observed on the Logbo-Toto Road in Volta Region where the road section was half in cutting and half in filling.

   (d) The side slope of some road ditches is very steep. This is unsafe for passing vehicles. The roadside slope of a ditch should not be steeper than 3:1.

   (e) Use of a clegg impact tester is recommended for compaction control. This is a portable, easy-to-use device and performs tests very quickly.

2. Creation of sustainable road maintenance capacity should be given priority in the program of feeder road construction and rehabilitation. Appropriate strategies must be evolved including (a) matching the pace of rehabilitation with the capacity of DFR and means for maintenance, and (b) a line item in the DFR budget be provided for maintenance.

3. Payment to contractors should be expedited. It is recommended that regional engineers be authorized to make interim payments within two weeks if there are no variations.

4. Regarding staff development and training, the following are recommended:

   (a) One senior engineer from the DFR and one faculty member from the Civil Engineering Department, School of Engineering, Kumasi should be sent to attend the Fifth International Conference on Low-Volume Roads, May 19-23, 1991 in Raleigh, North Carolina, USA. It would be worthwhile to combine with the same trip a short management training course for the DFR Engineer.

   (b) Four engineers/technicians from the DFR should be sent to Kissi, Kenya for the advanced labor-based technology, a 7-week course sponsored by the ILO.

5. It is recommended that in order to develop in-country capacity for training in low-volume road construction and maintenance, the School of Engineering at Kumasi organize a two-week course on low-volume roads for 15 engineers of DFR in the later part of 1991 drawing upon short-term technical assistance. Such a course could be repeated frequently as needed.

6. Short-term technical assistance (up to 6 weeks) in low-volume roads should be provided from the US Forest Service in the latter part of 1991. The specialist should assist in the offering of the two week course as well as advise DFR in this specialty area.

7. A multi-year study of feeder roads impacts should be funded. It should utilize the information of two earlier studies sponsored by ILO and USAID.

4.5. Agricultural Extension

The APPP strategy was "to promote increased food production by increasing farmer efficiency and productivity through the application of effective technologies and the reduction of relevant institutional deficiencies and infrastructure constraints" (PAAD, p. 23). This strategy resulted in selective support to policies and activities to deal with major constraints. These were: privatization of fertilizer imports and distribution, revitalization of the seed industry with increased private sector involvement, strengthening of extension services, rehabilitation of feeder roads, and support to policy studies. Although fertilizers and improved seeds were considered as key ingredients for higher productivity, the lack of farmers' awareness and knowledge and skills about the use of these inputs and the inability of extension service to reach farmers effectively to transfer technologies was a major problem. Among the important constraints faced by the extension service were insufficiently trained extension staff and lack of mobility to reach a sufficient number of farmers. The GOG budgetary constraints precluded even a reasonable level of operating cost support to the Extension Service for training and transportation. Almost all of the GOG resources that were available were required to pay salaries.

31

In the case of extension services, APPP provided resources for the following activities: (1) increased mobility, (2) increased training to improve the technical skills of extension agents, and (3) improved research extension linkages. Specific targets were set; the number of training sessions attended per agent were to increase from 8 in 1987 to 15 in each of the three years. The number of farmers contacted per agent was to increase from 350 in 1987 to 770 in 1989; 960 in 1990 and 1150 in 1991. A summary of observations relating to the implementation of extension components are presented below as findings and recommendations. A detailed assessment of the extension components is presented in Annex E.

4.5.1. Findings Regarding Extension Services

1. Impact of Extension Activities:

   (a) APPP support to the Extension Services Department of the Ministry of Agriculture (MOA) has significantly increased its mobility, outreach and frequency of contact with farmers and enabled the extension service to offer training more frequently. (Available data is shown in Annex E) The importance of a well trained, mobile and well supervised extension service was demonstrated by the success of the Global 2000 program, which uses the front line extension agents of the ESD to promote maize production.

   (b) The above inputs have increased farmer awareness and knowledge of agricultural technologies and improved home management practices.

   (c) Increased training offered to front line extension staff appears to have significantly increased their knowledge of technologies and promotional skills.

   (d) Except for fertilizers and the use of improved maize seeds, the rate of adoption of other practices and their impact on yield and income cannot be assessed. About 30 percent of farmers are reported to be adopting improved maize seed and fertilizers.

2. Extension messages need economic content to be effective. A number of messages being extended do not appear to be based on cost-profitability considerations.

3. The technological base of the extension program appears to be weak. Apart from improved maize, cowpea and rice seeds, fertilizers and use of Actelic and improved cribs for storage, there are few well tested and proven technologies.

4. Certain activities carried out by the Women's Extension Service appear to have direct positive benefits (organizing women for credit, group farming and other forms of assistance; health and nutritional intervention, improved home management practices). However, a number of other practices need economic content and appear to be ineffective.

38

5. Proposed investments in extension under the Medium-term Agricultural Development Plan (MTADP) appear to be excessive given the weak capacity of the organization, limited range of economically viable technologies and concerns about long-term sustainability of operating costs.

6. Extension program planning, supervision and coordination, monitoring and evaluation of impact appear to be the most neglected aspects of the extension operations. Monitoring capability is inadequate to satisfy both the extension organization and APPP needs.

7. Front line extension staff need a system of incentives and rewards for better performers, given the generally low salary and meager allowances.

8. Not all of the front line extension workers have technical bulletins available to them even for the most frequently talked about extension recommendations.

9. The Extension Service's limited resources are spread thinly over a wide range of activities all over the country and thus there is an urgent need to focus and concentrate its resources on priority regions and products.

4.5.2. Recommendations for Extension Activities

1. Extension program planning and management (supervision and coordination) capabilities need to be significantly improved and its capability to monitor and assess the effectiveness and impact must be strengthened. The proposed organizational structure of the extension service should incorporate planning, management and monitoring concepts. It is strongly recommended that the extension service seek full-time technical assistance from donor resources, especially in program planning, supervision and program assessment. In country resources appear to be lacking in these areas.

2. Any proposal to expand the size of the extension service must be carefully reviewed keeping in view the sustainability of operating expenditures. Improved coordination with cocoa, cotton and tobacco extension services and seed/fertilizer dealers will have a multiplier effect, reducing the need for expanding the size of the present extension service.

3. Improved extension-research linkages to understand farmer strategies and test and develop relevant technologies should be implemented.

4. A system of incentives and rewards to recognize better performing staff should be instituted and implemented.

5. Extension methodology should incorporate both the modified T&V approach and a group approach essential for organizing credit and marketing activities.

6. Extension service should moderate the "target oriented" approach to accomplishments and improve the quality of operations.

4.6. Agricultural Marketing and Credit

Marketing problems are constraining the adoption of improved technology necessary to increase productivity and lower unit production costs. Infrastructural constraints and other rigidities in the agricultural system, such as high transportation costs, poor quality control, lack of uniform standards and weights and inadequate market facilities and information, prevent the marketing system from adequately handling the increase production.

Farmers talk about the "marketing" problem. The "marketing" problem could reflect a situation of low farmgate/producer prices, inadequate market access due partly to poor transportation infrastructure or low demand due to decreased purchasing power. Since low prices are, in turn, indicators of accessibility and demand, the latter factors, especially market access, warrant further analysis. Such analysis should include issues of storage, market roads, and other infrastructure, price and stock information, value-added in marketing, agro-industrial linkages and export marketing. Output marketing is strongly linked to input marketing. Private fertilizer and seed dealers complain that the poor market for cereals, especially locally produced rice, inhibits the development of private sector input marketing.

Input marketing in Ghana is underdeveloped. Although, apart from fertilizer and seed, the private sector has been dominant in agro-input marketing, especially agro-chemicals, community-level agro-chemical retailing has not been developed. In general, agricultural input marketing needs to be developed within the framework of an agricultural inputs marketing strategy. Hence, it would be beneficial to move beyond issues of privatizing seed and fertilizer marketing and look at broader issues of agro-input market development. These issues include: the role of the public sector in legislation, regulation and business development, etc., pricing mechanisms and trade policy, protection and incentives framework. These and other issues need to be studied in the context of an agro-input marketing and agri-business development strategy in Ghana.

One issue that stands out clearly is the role of FASCOMs in the fertilizer market. Private marketing would be enhanced during the transition period if alternative marketing arrangements could be established between FASCOMs and private dealers. Dealers at a major maize growing area, Kintampo, ranked their preferences for marketing support mechanisms as follows:

1. Bank (commercial) credit
2. Commissioned agents for FASCOM
3. Credit purchases from FASCOM, with interest payment
4. Normal FASCOM cash-down purchases

Discussions held with FASCOM (UR) staff indicated that FASCOM cannot afford to sell on credit to dealers, but would be willing to explore commissioned dealership. This

arrangement, and others, need to be analyzed with a view to using the FASCOMs to promote private sector marketing of fertilizer. Output markets need to be developed for input marketing to improve. It is necessary to promote an output marketing system that facilitates input use and technology adoption, in addition to supporting private sector input marketing. The outline of one such scheme is described below.

A development agency (or bank, acting through the agency) could finance selected inputs for farmers and the farmers agree to pay back in kind at an agreed price at harvest. Private grain traders buy the grain, using bankers' guarantees (or similar insurance) which could be redeemed by the agency if a trader defaults. The banks could secure their credit to traders for grain marketing through reinsurance or by means of the Bank of Ghana Credit Guarantee Scheme and the guarantees could eventually be traded as financial paper. This scheme, which needs to be further elaborated and analyzed, would ensure availability of funding for technology extension programs involving the provision of credit. It would relieve development agencies of the need to market produce paid by farmers, promote private sector grain marketing, facilitate group formation among farmers and traders and ensure that banks retrieve their loans to farmers and traders. But the commercial banks have to improve their strategy and resources for debt service and collection.

Credit is vital in the marketing of inputs, especially fertilizer. When market sales are unable to generate adequate financing, the need for substantial credit financing becomes greater. The financial system's greatest tasks are resource, mainly deposit, mobilization and credit allocation, supervision and retrieval. The financial system does not need injection of fresh loanable funds for agriculture lending since there already exists some funds to be lent under the World Bank-sponsored Rural Finance Project and the system finds it difficult to meet the target of 20% of loans going to agriculture. The share of credit to agriculture fell from 32% of total bank credit in Ghana in 1983 to 16% in 1988. It is important that farm-level profitability of credit use is ensured through adequate supervision of farm operations by MOA staff to facilitate farmers' adoption of the improved technology being promoted with the credit. Loans can be retrieved from small farmers in Ghana, contrary to popular belief, if banks improve their debt collection strategies, allocate more resources to the process and improve loan appraisal and supervision. This is not to advocate for a "supervised credit" system, but for improving the system of credit management by both banks and farmers to improve enterprise profitability and ensure repayment.

Farmers needed credit mainly for agro-inputs (especially, land preparation, equipment and fertilizers) and storage. The idea is not to explicitly provide credit to farmers to withhold their produce from depressed markets after the harvest, but for the construction of simple storage cribs. It would be beneficial if the cost of MOA/EEC sponsored maize cribs, presently costing ¢190,000, are reduced to a more affordable price, such as for the Global 2000 sponsored cribs costing about ¢30,000. In the absence of adequate finances linked to a program to improve grain marketing, the emerging fertilizer marketing program is likely to make very slow progress.

41

4.7. Program Implementation, Monitoring and Impact Assessment

The APPP monitoring plan included:

(1) active dialogue between the USAID and the GOG on all aspects of the program;

(2) frequent meetings at the technical level between personnel of USAID, MFEP, and implementing agencies;

(3) quarterly and annual reports from implementing agencies to MFEP and USAID to discuss accomplishments and problems including disbursements and funds remaining;

(4) quarterly meetings of a technical committee chaired by MFEP comprised of representatives of implementing agencies and USAID;

(5) annual or more frequent meeting of the Secretary of MFEP and the AID Representative;

(6) field trips for GOG and USAID personnel to monitor APPP activities including privatization of the seed and fertilizer programs; and

(7) annual audits of the implementing agencies.

Measurements of the impact of APPP were to be based on evaluations of statistical data being collected on the impacts of structural adjustment on socio-economic groups. APPP planned to generate empirical data and analysis, including special studies supported by the Ghana Living Standards Survey.

4.7.1. Findings Regarding Monitoring and Evaluation

1. Implementation:

   (a) In the absence of baseline data and an operating information system it is not possible to measure quantitative and qualitative changes attributable to APPP. To the extent that we were able to observe through field trips, interviews and review of reports available in the USAID, we do believe that the implementation of APPP activities is of acceptable quality.

   (b) Reporting and monitoring requirements are not being met satisfactorily and evaluation is behind schedule.

2. Accountability:

   (a) To date, there have been no audits of the implementing agencies. We understand that USAID is in the process of responding to the GOG request

42

for auditing by the Auditor General of Ghana rather than an independent auditor.

(b) There is a serious discrepancy between the financial reporting to the USAID Controller by the GOG Office of the Controller and Accountant General and the MFEP reporting to the USAID in the Annual Report on APPP activities. The discrepancy and delays in reporting APPP disbursements is serious and could very well cause implementation problems to go unnoticed until it is too late to take corrective action.

(c) Another problem that we have noted in reviewing available financial data is that it is impossible to determine whether or not APPP funds are additional to the regular budgets of the implementing agencies.

(d) The MFEP reported that the USAID had not reported on USAID Trust Fund expenditures as was agreed upon in the Trust Fund Agreement dated April 17, 1989. During our interviews with MFEP we learned that as of the evaluation date (December 7, 1990) USAID has still not submitted a report on the Trust Funds. The USAID Controller stated that a report was prepared, but we could find no evidence that it was submitted to the MFEP. We were given a copy of the report which had been prepared by the USAID controller.

3. Disbursements:

While there is a serious pipeline problem with respect to the reporting on disbursements, we can not say that we encountered serious pipeline problems in the actual disbursements of funds at the implementing agency level. Actually, the procedure being followed in implementing the APPP project of disbursing funds directly to the implementing agencies on the basis of approved budgets without the need for further approvals by the MFEP has without any doubt speeded up the disbursements compared to the usual system for disbursing funds within the GOG.

4. Management Oversight:

(a) Adequate management and oversight systems are in place, however, there have been serious shortcomings in implementing the system. At the highest levels, management and oversight have been effective. Policy dialogue is taking place on a regular basis.

(b) Lack of personnel and turnover of personnel dealing with APPP has been a hindrance to effective oversight and management at the operational level. Aside from the lack of staff, the APPP program does not lend itself to direct USAID supervision at the implementing agency level, by design.

(c) Reporting at all levels, with the exception of field trip reports, has been woefully inadequate and has seriously hampered the evaluation team in

43

arriving at factually supported judgments. The recent arrival of an experienced USAID backstop officer should ensure that management and oversight will improve significantly. As a first step towards improving management and oversight it is essential that all parties prepare and submit all reports stipulated and agreed to in the Grant Agreement.

5. Program Impact Monitoring:

(a) The program monitoring and evaluation activities are significantly behind schedule and appear to not be well focused. Only recently have some monitoring reports become available and these are almost exclusively process rather than impact oriented. A recently executed contract between PPMED and a local consulting firm to evaluate the APPP impact is a good beginning, but needs to focus on specific impacts to be expected from APPP initiatives in the context of farming and trader enterprises.

(b) Planning for impact monitoring is incomplete; a draft of a monitoring plan was prepared in October, 1988 and revised in early 1989, but it has not been formally adopted nor implemented. The draft "Monitoring Plan" is adequate for monitoring process but it is weak for assessing impact; the linkage between process indicators and impact indicators is not well specified. In other cases the linkages made are naive, e.g. it is assumed that if a firm has registered to deal in the inputs that it is, in fact, active and therefore generating employment. This has led to a gross overstatement of the employment effects in the private sector distribution system.

(c) We are concerned about how fast the PPMED will evolve into a fully operating monitoring and evaluation unit given the severe shortages of experienced and qualified agricultural economists and social scientists.

(d) The Policy Planning, Monitoring and Evaluation Department (PPMED) of the Ministry of Agriculture (MOA) has proposed to develop a complete Information Management System for Monitoring the Mid-Term Agricultural Development Plan for the MOA. The proposed enhanced capacity at PPMED would serve as a basic core of a monitoring and evaluation system, and additional financial resources should be provided on a recurring basis to provide for linkages between MOA and PPMED with other users and creators of data for monitoring and evaluating APPP. For example, the impact evaluation of APPP should be closely linked to the GLSS activities, and the final impact evaluation of APPP will require specific data collection and analysis; funding should be provided for these activities and for periodic issue specific studies for APPP.

(e) The "baseline data" for impact monitoring was assembled during 1990 through a contract with The Consortium (CIHSD). Their report of October 1990 presents the results of collecting the available baseline data from secondary sources and selected field surveys for primary data collection. From this

44

report it is patent that the quality of the available baseline data is highly variable; some of the data reported appear to be normative estimates rather than statistical estimates derived from valid samples. Furthermore, from this report and several other specifications and recommendations for evaluation systems, it is clear that impact evaluation and monitoring have been hampered by inadequate conceptualization of what can be expected from the APPP interventions and how these effects would reveal themselves in the performance of the economy, the agricultural system, the farms and the commercial enterprises. The generic specifications require more data than is needed and would cause the data collection processing and analysis tasks to be too costly and time consuming. There is a need for a consensus building exercise regarding what would constitute a basic set of indicators and measures of impact and how these are to be collected, processed, analyzed and disseminated.

6. Policy Studies:

Contracts were awarded for the preparation of the following policy studies:

1. Comparative Assessment of Alternative Extension Programs Implemented in Ghana

2. The Need for Food Aid and its Impact on Domestic Food Production and Consumption

3. Economic Analysis of Fertilizer Use/Consumption

The first two studies were six months late, however, both reports are of acceptable quality and provide useful information for policy dialogue. Although the fertilizer study is still in the final stages of editing, we have seen a draft copy of the report and we found it to contain useful information which helped the team arrive at our final conclusions.

4.7.2. Recommendations Regarding Monitoring and Evaluation

1. Implementation:

The USAID should redesign a realistic implementation monitoring plan for the remaining life of the APPP program based on the current capabilities of both the USAID and the GOG. As a first step both the USAID and the GOG should immediately prepare and submit the reports agreed upon in the Grant Agreement and the Trust Fund Agreement. The early warning checklist for monitoring project design and implementation which is currently being considered within the USAID should be implemented as soon as possible.

2. Accountability:

The Bank of Ghana should use the letter of credit procedure to transfer cedis derived from the third tranche dollar auctions to the Special Account to facilitate tracking. The USAID should expedite a response to the GOG with respect to the GOG proposal to have the Ghanaian Auditor General carry out an audit of the implementing agencies. In the absence of an agreement on the GOG proposal, the GOG and the USAID should reach an agreement which is satisfactory to both parties as to how to proceed with auditing. The use of an independent auditor should be given consideration.

3. Disbursements:

MFEP, implementing agencies and the GOG Controller and Accountant General should submit financial reports as required by the grant agreement. The USAID should immediately report to the MFEP on the expenditure of Trust Funds as agreed upon in the Trust Fund Agreement and the USAID should continue to submit reports to the MFEP as per the agreement.

4. Management and Oversight:

The existing management and oversight mechanisms of the USAID in the area of monitoring reports on disbursements to and by the implementing agencies is adequate by design, but needs to be fully implemented and on a timely basis.

5. Impact Monitoring:

(a) USAID and the GOG should carefully review the linkages between the actions being supported by the local currency and the privatization initiatives with the expected observable outcomes. The difficulties with impact monitoring are in part the result of overly ambitious expectations as to the outcomes, e.g. privatization per se need not increase the supply of seeds and fertilizer; the private sector will not respond unless there is a genuine opportunity to profit. The impact monitoring and evaluation requirements should be scaled down in light of realistic expectations of what APPP supported activities can be expected to achieve in an incremental manner to the ASRP and the Economic Recovery Program itself.

(b) USAID should support the enhancement of capacity for monitoring and evaluation at PPMED, particularly in their quality control functions and in their "clearinghouse" approach to incorporating Ghanaian professionals as contractors for information and evaluation tasks. This support would include donor coordination to promote and accept PPMED as the clearinghouse for information and for evaluation activities. Importantly, PPMED also requires international resources for training, equipment and technical assistance.

46

(c) Regarding base line data, USAID should review the original concept proposed in the PAAD to use the GLSS as a cornerstone of the impact evaluation system. Our review suggests that this concept remains valid and we were unable to determine why USAID diverted from this strategy.

(d) Policy Monitoring should be built into the monitoring plan directly and not left as a set of issues to be studied. For example, the existing policy of controlling trader margins in the input distribution system prevents risk taking by traders, and therefore prevents the evolution of a dynamic private sector input distribution system. Such issues are central to the success of the APPP and should not be relegated to a "studies" pigeonhole.

5.0 Overall Accomplishments and Recommendations

1. APPP's major achievements to date are privatization of fertilizer trade (supply and distribution), removal of fertilizer subsidies, and significant progress made towards revitalization of the seed industry with private sector participation, including the closure of the parastatal Ghana Seed Company by the Government of Ghana (GOG). While the GOG has demonstrated strong commitment to privatization, and initiated the process, USAID and other donors should help GOG consolidate its accomplishments in these two areas. There should be no illusion that the privatization has taken hold.

2. APPP's support to the agricultural sector (rural feeder roads and extension services) is beginning to show positive results in terms of increased year round access of farmers to markets and services, increased trading by rural women, increases in areas cultivated, produce marketed and farmers' incomes; increased extension contact with farmers and increased awareness of technologies and improved home management and nutritional practices.

3. APPP yield target assessment by the Evaluation Team (Annex F) indicates that APPP land and labor productivity targets would be achieved. In the case of maize, land productivity increased to 1.3 (MT/HA) in 1989 from 1.1 (MT/HA) in 1988, the base year. In the case of rice, land productivity remained constant at 1.0 (MT/HA) while labor productivity showed a small decrease from 61 to 54 (KG/capita) during the same period. Similarly labor productivity for maize increased from 43 (KG/capita) to 46 (KG/capita) during the same period.

4. There are strong evidences of participation by small farmers and rural women in the APPP supported activities. Eighteen percent of small farmers have adopted improved maize production technology (fertilizer and seeds) while thirty percent have tried. This is no small achievement in itself. Women are participating as fertilizer retailers and seed producers though in small numbers. APPP's support to the Extension Services Department has increased small and women farmers' awareness of and access to technologies and development programs.

5. The program is generally well managed at the USAID level, despite severe staff constraints; and well managed at the GOG level, despite the small number of experienced senior managers and sufficient number of middle and lower level staff who need far more experience and direction to implement ever expanding donor-financed programs. Major improvements needed would be in the area of program monitoring and impact evaluation.

5.1. Recommendations

1. It is recommended that USAID continue to support the activities initiated under APPP for an additional period of three to five years.

2. Privatization requires confidence building measures as well as clear policy and regulatory signals and incentives. To move the process of privatization further, it is recommended that GOG examine further changes in policies and regulations to promote private enterprise in seed and fertilizers and in agri-business activities in general. The donor community should continue to assist GOG in these efforts and intensify support for the development of private sector marketing infrastructure for inputs and outputs, including low-cost on-farm storage.

3. It is recommended that USAID and the World Bank coordinate their approaches and inputs to the seed industry development, fertilizer privatization, feeder roads rehabilitation and extension services and with GOG and the key donors that they set up a working group of three to five persons to identify policy and regulatory changes required for further progress in privatization of seeds and fertilizers.

4. It is recommended that GOG design a strategy and a viable approach to rural credit and marketing including strengthening of the banking sector for increased participation in rural credit. Access to credit on reasonable terms has emerged as a major issue facing farmers and agro input-output traders in the regions. In the absence of adequate rural credit and finance, the emerging fertilizer and other input marketing program is likely to make very slow progress.

6.0 Lessons Learned

1. Joint program design with GOG staff at all the stages of design has generated trust between USAID and GOG officials and facilitated implementation and problem solving.

2. DFA requirements for program observation management and monitoring could be made effective if the Missions are provided with necessary resources both human and material, to enable the Missions to take a more active role in program monitoring and evaluation.

3. Agency perception that program assistance is less management intensive and that smaller staffs are needed for implementing such assistance are not borne out by the APPP experience. If anything, better staffing of the Mission would have helped greatly.

4. It is necessary to get the baseline data collected and impact assessment framework completed simultaneously with program design.

5. The USAID should negotiate strict performance criteria regarding monitoring and evaluation to satisfy the Agency's requirements within the DFA.

6. Privatization is a long term process and it requires careful nurturing to build confidence both in the public and in the government. The donor agencies need to develop strategies to manage the interim period until privatization takes hold.

ANNEX A

Program Implementation, Monitoring and Impact Assessment

Prepared by
Carl F. van Haeften
Sigma One Corporation

Introduction

The APPP monitoring plan included: (1) active dialogue between the USAID and the GOG on all aspects of the program; (2) frequent meetings at the technical level between personnel of USAID, MFED and implementing agencies; (3) quarterly and annual reports from implementing agencies to MFED and USAID to discuss accomplishments and problems to include disbursements and funds remaining; (4) quarterly meetings of a technical committee chaired by MFED comprised of representatives of implementing agencies and USAID; (5) annual or more frequent meetings of the Secretary of MFED and the AID representative; (6) field trips by GOG and USAID personnel supported by REDSO personnel to monitor APPP activities including privatization of the seed and fertilizer programs; 7) annual audits of the implementing agencies.

Measuring APPP impact was based on evaluations of statistical data being collected on the impacts of structural adjustment on socioeconomic groups. APPP planned to generate empirical data and analysis, including 15-20 special studies and supported by the Ghana Living Standard Survey.

1.0 Observations

1.1 Monitoring of Program Implementation

1. The auction mechanism is working effectively and the foreign exchange regime is evolving as desired including the convergence of the auction and bureau rates. There is general satisfaction with the APPP program which provides untied dollar exchange to the foreign exchange auction system which generates local currency for agreed upon development activities. The first tranche was auctioned promptly, but there were delays in auctioning the 2nd tranche. It does not appear that the delays in 2nd tranche auctioning caused any delays in program implementation. The delays were actually advantageous since the auction rates increased over time and more cedis were derived and disbursed to the Special Account than originally expected. The grant agreement specified that funds were to be transferred to the Special Account at the auction rate in effect at the time the US dollars were disbursed to the Bank of Ghana in New York. For the 2nd tranche the GOG obtained higher rates which were in effect when the auctions took place and disbursed cedis

61

into the Special Account at the higher rates. This accounted for a windfall of 80,309,391 cedis.

2. In the absence of baseline data and an operating information system it is not possible to measure quantitative and qualitative changes attributable to APPP. To the extent that we were able to observe through field trips, interviews and review of reports available in the USAID we do believe that the implementation of APPP activities is of acceptable quality. Reporting and monitoring requirements are not being met satisfactorily and implementation is behind schedule. It would appear that delays have been caused by slowness in programming and budgeting which in turn caused delays in disbursing funds to the implementing agencies. However, we have been told that most, if not all, activities can and will be completed on schedule. We observed an honest desire on the part of all responsible officials concerned with implementing the APPP program to make it work. Lack of staff on the part of both USAID and the GOG and turnover of USAID backstop officers has hampered project monitoring. Andrew Sisson served as USAID backstop officer for one year until his departure in August 1989, he was followed by Edward W. Birgells, the USAID program officer, who served as acting backstop officer until March 1990, when Lynn Keeyes replaced Birgells in an acting capacity until August 1990 when Birgells again took over until the arrival of the permanent backstop officer Peter Weisel in October 1990. The newly arrived backstop officer possesses all of the necessary technical and administrative skills to monitor project implementation and we now expect more timely submission of financial and activity progress reports.

We are concerned about how fast the PPMED will evolve into a fully operating monitoring and evaluation unit and we are concerned about how soon the privatization of the fertilizer and seed programs will meet the needs of the farmers in bringing about significant increases in the income and general well-being of the small farmers. The APPP program was designed to support the Economic Recovery Program by increasing per capita production and by increasing yields per hectare. The program included targets for both per capita and per hectare increases for 1988, 89, 91, 93 and 95. The PAAD recognized the possibility that privatization of the fertilizer and seed programs might not be accomplished quickly and that there could be a lag of 3 to 5 years before productivity increases could be measured. Use of inputs such as fertilizer and improved seeds outside of Global 2000 appears to be decreasing. It seems that only the Feeder Road component of APPP is contributing to increased per capita production and increased income to farmers. Even here we do not have adequate data, but we have formed this opinion from interviews with farmers living along or at the end of feeder roads. In addition to the additional income resulting from the labor intensive feeder road construction, farmers told us that they were able to market more of their products at less cost since they no longer had to pay for head loading. We were unable to determine actual production increases, but farmers told us that they intended to increase production which may or may not come about depending upon future action to improve the marketing system and the availability of credit for marketing and inputs as described elsewhere in this report.

3. GOG accounting for dollars through the auction mechanism and ultimate disbursement by the Bank of Ghana of the cedis derived from the auctions to the Special Account managed by the MFED is transparent and easy to track. Similarly, the disbursement of funds from the Special Account to the implementing agencies should follow the budgets which are approved by the MFED and The USAID. Transfers of funds derived from the auctions of the 1st tranche were accomplished by letters of credit and were easy to track. Transfers of cedis derived from the auctions of the 2nd tranche were not handled through the letter of credit procedure, however, according to the USAID controller the transfers did track properly. With respect to the 3rd tranche dollars, which have yet to be auctioned, it has been agreed to once again use the letter of credit system which facilitates tracking of the transactions. To date there have been no audits of the implementing agencies. We understand that at the moment no consideration is being given to the hiring of an independent auditor who might satisfy the auditing requirements of both the G.O.G and the USAID. Instead the GOG has indicated preference for having the auditing done by the Auditor General of the GOG and has sought USAID approval. We further understand that USAID has not yet responded to the GOG concerning their auditing proposal.

4. There is a serious discrepancy between the financial reporting to the USAID Controller by the GOG Office of the Controller and Accountant General and the MFED reporting to the USAID in the Annual Report on APPP activities.

The October 15, 1990 Program Local Currency Status Report available to the USAID Controller (copy provided to the evaluation team) reflects that disbursements represent only 8% of the $14,551,000 or cedis 3,656,370,600.00 that were generated by the auctions were disbursed to the implementing agencies and that amount even includes the cedis 253,163,400.00 disbursed to the USAID Trust Fund.

The MFED submitted the First Annual Report on APPP activities on February 6, 1990 (eight months earlier than the above cited report) and reported actual disbursements as of December 31, 1989 totalling approximately 664,000,000 cedis or twice as much as the formal report approved by the GOG Office of the Controller and Accountant General.

Since then we have received an informal report from the Department of Feeder Roads claiming disbursements as of October 31, 1990 of $3,819,439.52 of a total of $7,700,000 programmed and budgeted under the 1st and 2nd tranches.

The discrepancy and delays in reporting APPP disbursements is serious and could very well cause implementation problems to go unnoticed until it is too late to take corrective action.

Another problem that we have noted in reviewing available financial data is that it is impossible to determine whether or not APPP funds are additional to the regular budgets of the implementing agencies.

To date, the MFED has only submitted the First Semi-Annual Report on APPP Activities dated August 21, 1989 and The First Annual Report on APPP Activities dated February 6, 1990. The Semi-Annual Report for the first half of 1990 has not yet been received at the USAID.

The MFED reported in the First Annual Report, dated February 6, 1990 covering progress and expenditures for 1989, that the USAID had not reported on USAID Trust Fund expenditures as was agreed upon in the Trust Fund Agreement dated April 17, 1989. During our interviews with MFED we learned that as of this date the USAID has still not submitted a report on the Trust Funds. The USAID Controller stated that a report was prepared, but we could find no evidence that it had been submitted to the MFED. We were given a copy of the report which had been prepared by the USAID controller.

1.2. First Annual Report

The First Annual Report submitted by the MFED contained pertinent information as follows:

The 1st and 2nd tranches were released by the US to the GOG in the amounts of $5,940,000 and $8,611,000 respectively and the auctions generated cedis 1,377,900,000 and cedis 2.278,470,600 respectively. There follows an approved budget for the 1st tranche:

AGENCY	AMOUNT IN CEDIS
Department of Feeder Roads	460,000,000.00
Extension Services Department	460,000,000.00
N.C.D.S.	17,250,000.00
APPP Monitoring	46,000,000.00
USAID Trust Fund	68,895,000.00
Unprogrammed Balance	325,755,000.00
Total	1,377,900,000.00

A cheque in the amount of cedis 68,895,000.00 was paid to the USAID Trust Funds and the funds approved for the implementing agencies were deposited in interest bearing accounts of the implementing agencies at the Ring Road Central Branch of the Agricultural Development Bank, Accra.

2.0. Progress Report of Work of Implementing Agencies

2.1. Department of Feed Roads

A total of cedis 625,353,652.00 were awarded to contractors in the Brong-Ahafo, Northern, Volta, Upper East and Upper West Regions. This exceeded the first tranche allocation and it was expected that the excess would be absorbed in the 1990 programming. In spite of delays caused by heavy rains in some areas good progress was made on road construction and it was felt that all projects would be completed by mid 1990. Actual disbursements to contractors as of December 31, 1989 amounted to cedis 144,400,000.00.

2.2. Extension Services Department

Funds allocated to the Extension Service were used to:

1. provide vital logistics and mobility needs
2. provide in-country on-the-job training for staff
3. forge closer links between Research and Extension.

A total of cedis 404,602,105.15 representing 88% of the funds allocated to the Extension Service were disbursed as of December 31, 1989.

2.3. National Center for Development Strategies (NCDS)

Contracts were awarded for the preparation of Policy Studies as follows:

1. Comparative Assessment of Alternative Extension Programmes Implemented in Ghana.

2. The Need for Food Aid and its Impact on Domestic Food Production and Consumption.

3. Economic Analysis of Fertilizer Use/Consumption.

At the time the First Annual Report was submitted these studies were underway, but not yet completed.

The first two studies were six months late, however both reports are of acceptable quality and provide useful information for policy dialogue. Although the fertilizer study is still in the final stages of editing we have seen a draft copy of the report and we found it to contain useful information which helped the team arrive at our final conclusions. The report does appear to contain more information than was expected and is somewhat lacking in analysis. The Food Aid study reflects a thorough understanding of the issues regarding economic, developmental and nutritional impacts from food aid; it is well grounded in the

modern international literature and presents an adequate empirical foundation with primary and secondary data. The failure to pursue this component more vigorously represents a serious lack of opportunity, because more studies would have helped detect some of the underlying conceptual problems with the APPP, particularly regarding the policy frame work for privatization.

For reasons not entirely clear to the evaluation team the NCDS was disbanded in early 1990 and two additional studies were initiated by the Technical Committee, both of which will be discussed later in this report under Impact Monitoring.

3.0. APPP Monitoring

At the close of 1989 most of the funds allocated to monitoring activities had been expended for the procurement of needed vehicles, computers, photocopiers etc. and there was an unexpended balance of cedis 798,802.00 and an accrued interest of cedis 37,349.00.

3.1 Project Implementation Letters

Pursuant to Project Implementation Letter # 8 dated July 30, 1990 USAID reviewed and concurred with budgets totalling 2,408,880,000 ($8,194,000) as follows:

M.O.A. EXT	cedis	495,710,000	$1,700,000
D.F.R.	cedis	1,680,000,000	$5,700,000
TRAINING MONITORING AND STUDIES	cedis	96,000,000	$327,000
NATIONAL SEED PROGRAM	cedis	137,170,000	$467,000
TOTALS	cedis	2,408,880,000	$8,194,000

The $1.7 for Extension comes from $1,368,000 unprogrammed 1st tranche and $332,000 2nd tranche.

The approved budget programs the total remaining funds from the 1st tranche and the equivalent of $6,826,000 from the 2nd tranche.

PIL#8 amends Annex 1, page 4 of the Program Grant Agreement indicating the cedi programming of the 2nd tranche and part of the unprogrammed 1st tranche as follows:

56

	Cedi Programming ($000) TRANCHE		
	Programmed		Planned
	1	2	3
Rural Feeder Roads	2000	5700	2000
MOA Extension Service	3368	332	2000
Policy Studies, Services[1]	74	-	-
AID Trust Fund	297	861	540
GOG Monitoring & Evaluation	200	-	-
Training, Monitoring & Studies	-	327	275
National Seed Program	-	467	637
Other (to be programmed)	-	924	-
TOTALS	5940	8611	5449

USAID had received 253,163,400 cedis for deposit into the Trust Fund. Actual cedi generations from the auctions were greater than originally expected and USAID accepted Bank of Ghana's calculation of 2,611,943,391.01 cedis actually derived from the 2nd tranche auctions versus expected 2,531,634,000 cedis since actual auction rates were used instead of the rate in effect at time of dollar transfers to the Bank of Ghana as per original agreement. Correct amount for the Trust Fund should have been 261,194,339.10 and USAID requested MFED to remit an additional 8,030,939.10 cedis.

Pursuant to PILS#9 dated October 16, 1990 the USAID acknowledged receipt of MFED letter dated August 31, 1990 (Ref: No. PAD/AG/07) which forwarded documentation acceptable to USAID that conditions precedent were met to permit disbursement of the 3rd and final increment of the grant. USAID informed the MFED that the US would take steps to disburse the 3rd tranche of $5,4449,000.

3.2 Disbursement Pipeline

While there is a serious pipeline problem with respect to the reporting on disbursements, we can not say that we encountered serious pipeline problems in the actual disbursement of funds at the implementing agency level. Actually, the procedure being

[1]Note that as per the Technical Committee decision on 2-13-90 budget line items "Policy Studies & Services" and GOG Monitoring and Evaluation have been combined into a new line item "Training, Monitoring and Studies".

followed in implementing the APPP project of disbursing funds directly to the implementing agencies on the basis of approved budgets without the need for further approvals by the MFED has without any doubt speeded up the disbursements compared to the usual system for disbursing funds within the GOG.

3.3 Informal Reports from the Department of Feeder Roads

On an informal basis we received reports from the Department of Feeder Roads that of the total of $7,700,000.00 budgeted for the 1st and 2nd tranches contracts have been tendered for $7,124,625.73 and a total of $3,819,439.52 has been disbursed. For the first tranche 89% of the physical activities have been achieved and 67% of the budget has been disbursed. For the second tranche the numbers are 54 % and 45%, respectively.

Adequate management and oversight systems are in place, however, there have been serious shortcomings in implementing the system. At the highest levels management and oversight has been effective. Policy dialogue is taking place on a regular basis. It is apparent that the GOG wants the system to work and the responsible officials are fully responsive to requests for information. As discussed in the previous section lack of personnel and turnover of personnel dealing with APPP has been a hindrance to effective oversight and management. Aside from the lack of staff, by design the APPP program does not lend itself to direct USAID auditing at the implementing agency level. Therefore, auditing by an independent auditor as provided for in the grant agreement may offer a good solution to the current auditing impasse. The Technical Committee Meetings, field trips by GOG and USAID personnel to monitor APPP activities, quarterly reports to MFED by implementing agencies, MFED Semi Annual and Annual Reports to the USAID and Bank of Ghana Reports to the USAID Controller provide the mechanism for adequate management and oversight assuming that they will take place regularly as needed. The fact remains that reporting at all levels, with the exception of field trip reports, has been woefully inadequate and has seriously hampered the evaluation team in arriving at factually supported judgments. The recent arrival of a highly competent and skilled USAID backstop officer should ensure that management and oversight will improve significantly. As a first step towards improving management and oversight it is essential that all parties prepare and submit all reports stipulated and agreed to in the Grant Agreement.

4.0 Program Impact Monitoring

1. The program monitoring and evaluation activities are significantly behind schedule and appear to not be well focused. Only recently have some monitoring reports become available (Quarterly Monitoring Reports for Extension Activities in 1989; May,1990), and these are almost exclusively oriented to process aspects rather than impact. Regarding impact, some questionnaires for producers and input distributors were recently designed by a local contractor. (Agroplan Ltd under contract to the PPMED). These seem to be a good beginning, but require further field testing; in their present form

58

they appear generic and seem to lack specific insight as to explicit effects to be expected from APPP initiatives in the context of farming and trader enterprises. For example, the logframe in the PAAD did not specify the linkage between privatization of the seed and fertilizer industries and increased input use at the farm level. An unstated assumption was that the private sector would fill the void and provide the distribution system for these inputs. Nothing was said about the conditions necessary to make these into profitable private sector ventures, nor was anything said about the specific policies that would facilitate the development of a private sector input distribution system.

2. Planning for impact monitoring is incomplete; a draft of a monitoring plan was prepared in October,1988 and revised in early 1989, but it has not been formally adopted nor implemented. The activities regarding impact monitoring and evaluation, particularly at USAID, appear to be hurried responses to the Mid-Term Evaluation rather than the result of an integrated planning effort. Several interesting proposals for systems to monitor impacts of APPP and other activities supported by USAID have been prepared for USAID by local and international consultants. These proposals contain many good ideas, but in some cases they seem overly ambitious and offer the risk of becoming mechanical exercises to assemble numbers for the sake of reporting rather than for developing insight regarding the performance of the programs and projects. The draft "Monitoring Plan" is adequate for monitoring process but it is weak for assessing impact; the linkage between process indicators and impact indicators is not well specified. In other cases the linkages made are naive, e. g. it is assumed that if a firm has registered to deal in the inputs that it is in fact active and therefore generating employment. This has led to a gross overstatement of the employment effects in the private sector distribution system.

3. The Policy Planning, Monitoring and Evaluation Department (PPMED) of the Ministry of Agriculture (MOA) has proposed to develop a complete Information Management System for Monitoring the Mid-Term Agricultural Development Plan for the MOA (Working Paper 17). This proposal would expand the role of PPMED in the monitoring and evaluation areas; it calls for enhancements of capacity for PPMED through computer procurement, training, standardization and reorganization. PPMED and their proposals offer an excellent approach for developing a sustainable system for monitoring and evaluation of agricultural policies and programs. The enhanced capacity at PPMED would serve as a basic core of a monitoring and evaluation system, and additional financial resources should be provided on a recurring basis to provide for linkages between MOA and PPMED with other users and creators of data for monitoring and evaluating APPP. For example, the impact evaluation of APPP should be closely linked to the GLSS activities, and the

final impact evaluation of APPP will require specific data collection and analysis; funding should be provided for these activities and for periodic issue specific studies for APPP. Such funding would be used to supplement PPMED internal resources and to provide for contracting with Ghanaian and international consultants. The role of these consultants is important in that PPMED is understaffed because they are unable to retain qualified professionals with analytical and computer skills to fill their table of organization. The contracting mechanism will insure that the resident expertise can be brought to bear on these requirements with remuneration that reflects the scarcity of these skills and experience in Ghana.

4. The "baseline data" for impact monitoring was assembled during 1990 through a contract with The Consortium (CIHSD). Their report of October 1990 presents the results of collecting the available baseline data from secondary sources and selected field surveys for primary data collection. The major conclusion was, "there is need for more systematic data collection on a regular basis". The report recommends that formal survey and administrative data be complemented with systematically collected appraisal information from field observations by experts at critical times and locales in the agricultural system. We concur with this approach as long as it is a complement to formal sample surveys and to standardized administrative reporting. From this report it is patent that the quality of the available baseline data is highly variable; some of the data reported appears to be normative estimates rather than statistical estimates derived from valid samples. Furthermore, from this report and several other specifications and recommendations for evaluation systems, it is clear that impact evaluation and monitoring has been hampered by inadequate conceptualization of what can be expected from the APPP interventions and how these effects would reveal themselves in the performance of the economy, the agricultural system,the farms and the commercial enterprises. The generic specifications require more data than is needed and would cause the data collection processing and analysis tasks to be too costly and time consuming. There is a need for a consensus building exercise regarding what would constitute a basic set of indicators and measures of impact and how these are to be collected, processed, analyzed and disseminated. An important consideration in this exercise would be establishing a consensus on which institution would be responsible for standards and quality control on the data, presumably this would be PPMED. Until this consensus is achieved, it is difficult to judge whether or not the existing baseline data is adequate or not. This not withstanding, it appears that the Ghana Living Standards Survey and the 1984 Census could serve as a "core" baseline for the income and employment related effects that are expected from APPP. The direct technological and economic effects will be more difficult to measure, let alone attribute to APPP. Never-the-less, the APPP can be evaluated in terms of process and impact; most of the elements

100

for a viable evaluation system are potentially available. Additional financial, technical and training resources are needed, however. The most important need appears to be the assignment of authority, responsibility and resources to PPMED for the monitoring and evaluation of APPP.

5.0 Recommendations

1. Auctions

No recommendations. The auction mechanism is working as desired.

2. Implementation Quality

The USAID should redesign a realistic plan to monitor the remaining life of the APPP program based on the current capabilities of both the USAID and the GOG. As a first step both the USAID and the GOG should immediately prepare and submit the reports agreed upon in the Grant Agreement and the Trust Fund Agreement.

The early warning checklist for monitoring project design and implementation which is currently being considered within the USAID should be implemented as soon as possible. If used properly this checklist should strengthen of the implementation of APPP.

3. Accountability

The Bank of Ghana should use the letter of credit procedure to transfer cedis derived from the third tranche dollar auctions to the Special Account to facilitate tracking.

The USAID should expedite a response to the GOG with respect to the GOG proposal to have the Ghanaian Auditor General carry out an audit of the implementing agencies. In the absence of an agreement on the GOG proposal the GOG and the USAID should reach an agreement satisfactory to both parties as to how to proceed with auditing and the use of an independent auditor should be given consideration.

4. Disbursements

MFED, implementing agencies and the GOG Controller and Accountant General should submit financial reports as required by the grant agreement.

The USAID should immediately report to the MFED on the expenditure of Trust Funds as agreed upon in the Trust Fund Agreement and the USAID should continue to submit reports to the MFED as per the agreement.

5. Management and Oversight.

The existing management and oversight mechanism of the USAID in the area of monitoring reports on disbursements to and by the implementing agencies is adequate by design,but needs to be fully implemented and on a timely basis; at the present time the delays in reporting make it nearly impossible to correct any deficiencies. Furthermore, the non-submission of required reports should not be tolerated.

6. Impact Monitoring

(a) USAID and the GOG should carefully review the linkages between the actions being supported by the local currency and the privatization initiatives with the expected observable outcomes. The difficulties with impact monitoring are in part the result of overly ambitious expectations as to the expected outcomes, e.g. privatization per se need not increase the supply of seeds and fertilizer; the private sector will not respond unless there is a genuine opportunity to profit. The impact monitoring and evaluation requirements should be scaled down in light of realistic expectations of what APPP supported activities can be expected to achieve in an incremental manner to the ASRP and the Economic Recovery Program itself.

(b) USAID should support the enhancement of capacity for monitoring and evaluation at PPMED, particularly in their quality control functions and in their "clearinghouse" approach to incorporating Ghanaian professionals as contractors for information and evaluation tasks. This support would include donor coordination to promote and accept PPMED as the clearing house for information and for evaluation activities; it will also include local currency support to fund contracts. Importantly, PPMED also requires international resources for training, equipment and technical assistance.

(c) Regarding baseline data, USAID should review the original concept proposed in the PAAD to use the GLSS as a cornerstone of the impact evaluation system. Our review suggests that this concept remains valid and we were unable to determine why USAID diverted from this strategy.

(d) Policy Monitoring should be built into the monitoring plan directly and not left as a set of issues to be studied. For example, the existing policy of controlling trader margins in the input distribution system prevents risk taking by traders, and therefore prevents the evolution of a dynamic private sector input distribution system. Such issues are central to the success of the APPP and should not be relegated to a "studies" pigeon hole.

62

ANNEX B

Fertilizers and Privatization of the Fertilizer Industry
(Supply and Distribution)

Prepared by
Don McCune
Sigma One Corporation

Introduction

Until recently, Ghana's total chemical fertilizer marketing system was in the public sector. Ghana's total fertilizer needs were met entirely by public sector imports which dictated the nature of its procurement and marketing systems. The responsibility for the fertilizer marketing function resided in the Ministry of Agriculture. This responsibility was given to the Crops Service Division (CSD) which determined annual fertilizer requirements, coordinated procurement, cleared imports at the port, and distributed to and marketed fertilizers from national, regional, district and subdistrict sales outlets throughout the country. It is claimed that there are about 400 Ministry of Agriculture (MOA) outlets throughout the country. Table I shows the Ghana fertilizer imports over the period 1984-1989.

In the Upper, Northern and Volta Regions under World Bank projects Farmer Service Companies (FASCOMs) have been established. These FASCOMs act in the place of the MOA in the distribution and marketing of fertilizers. In the Upper and Northern Regions there are at least 60 outlets for fertilizer. In the Volta region there are 40 outlets for fertilizer.

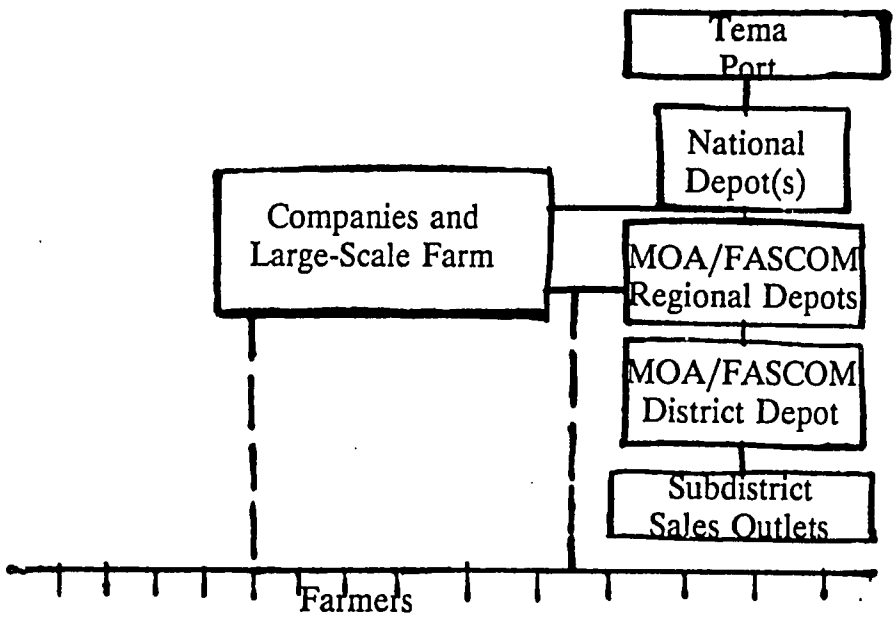
Table 1

Ghana Fertilizer Imports (in Metric tons)

YEAR	S/AMMONIA	S/SUPER	M/POTASH	UREA	15-15-15	17-17-17	25-15-5/ 23-15-5	20-20-0/ 22-22-0	10-20-15	POTASSIUM NITRATE	TOTALS
1984	13,600			200	24,550						38,350
1985	5,437				21,550			3,200			29,999
1986	8,500	400	1,000					9,600	600		20,100
1987	14,650		600		4,800			17,600	400		38,070
1988	20,550		1,050		9,400	5,075		2,900	600		39,575
1989	25,711		3,340	6,015	8,000		5,893	15,500	380	400	65,289
1990	2,000	500		20,100	4,250		8,000	8,500			43,350

The general flow of fertilizers from the port to sales outlets is diagrammed in the following figure:

Table II
Fertilizer Distribution System of Ghana



The FASCOMs are parastatal organizations that were created under the World Bank projects URADEP and VORADEP to handle agricultural inputs for these two programs. The FASCOMs are primarily GOG-owned with some 10% participation from the Housing Development Bank and the Agricultural Development Bank. It is further noted that about 2.5 percent of the shares are owned by farmers. These shares were to have accumulated as a result of rebates to the associations of farmers that patronize these service centers.

With the announced GOG policy of privatization of the fertilizer industry there is debate and uncertainty as to what, if any, role the FASCOMs can or should play in the privatization industry. FASCOMs do have a valuable network of storage and service centers that should not be lost. Some solution must be found and announced if there is to be true competition in the marketplace throughout Ghana.

1.0 Privatization of the Fertilizer Industry

A major program to reform Agriculture in Ghana is the Agricultural Services Rehabilitation Project (ASRP). The objective of the ASRP is to strengthen the institutional framework for formulating and implementing agricultural policies and programs and to improve the delivery of public services to agriculture. Among other things this project seeks to privatize the fertilizer industry.

65

In negotiating the above programs it was recognized that the timely application of the correct types and amounts of fertilizers was the most important factor for improving cereal yields in Ghana. The GOG and the World Bank identified *"monopoly government control and management of fertilizer supply as an urgent problem needing attention"* and they agreed on a plan to gradually privatize the system. This effort is included in the World Bank-supported ASRP, signed in 1987, as well as the Policy Framework Paper (PFP). USAID in supporting this effort believes that through conditionality and monitoring under the APPP, it can provide positive reinforcement.

The APPP funds release was based on various steps being completed in the privatization of the fertilizer industry. By August 1990 it was agreed that the conditionalities for release of the third tranche of funding had been met. These conditionalities had been met in that (1) private retailing and wholesaling had been launched in Ghana, (2) price subsidies had been eliminated, and (3) private sector importing of MOA approved fertilizers had been launched.

It is agreed, however, that the privatization of the fertilizer industry will take some time and USAID in its Program Assistance Approval Document for the APPP so states when speaking of this privatization effort "this will probably require a few years beyond the life of the program, which will end in 1991".

In November 1990, at the time of this review, though many accomplishments toward privatization had been made several serious problems were being faced. Important among these problems were:

(1) due to the rapid price increases due to subsidy removal and exchange rate adjustments fertilizer use had fallen to an estimated sale of 8400 tons of plan nutrient (N, P_2O_5 and K_2O) in 1990. This is to be compared to 29,000 tons of plant nutrient sold ten years before, in 1981. (With present oil prices spiralling upward, the outlook for fertilizer prices, especially nitrogen prices based largely on petroleum feedstocks, is one of rapid increases worldwide);

(2) with declining fertilizer use large stocks of fertilizers have accumulated in the MOA warehouses (by MOA estimates about 68,000 tons of product as compared to 25,000+ tons of product sold in 1990). This large stock in country, on the one hand, in the face of spiralling world fertilizer prices may be fortunate; on the other hand fertilizer is a perishable commodity and with the fertilizer stocks exceeding the capacity of the governments national and regional warehouses, good storage keeping measures are not possible and bags are stacked too high and the established first-in first-out measures are not possible. Also, this oversupply has discouraged, and essentially stopped importation of fertilizers by the private sector;

(3) the decision of the GOG to maintain fixed prices with volume rebates on sales to dealers is not working satisfactorily. The rebates especially on less than 500 bags are

just not enough for dealers to make adequate profit to encourage vigorous selling. Thus, few dealers are entering the market and those that do enter sell fertilizers in small quantities and limited market areas;

(4) The lack of understanding of the role of the public sector in relation t the newly established dealers is of grave concern. This includes the MOA direct sales by the Extension Service, the Global 2000 program (in 1989 these used about half of the total fertilizers sold in Ghana) which purchases fertilizers directly from the MOA, and especially the FASCOMs on which there are differences of opinion within the GOG and among the donors on how they should function and;

(5) an incomplete understanding in the trading community policies including incentives, taxation, fees, credit, etc. as they affect dealers, wholesalers and importers. Policies on these items should be formulated and announced at an early date.

2.0 Fertilizer Use, Prices and Constraints to Privatization

Fertilizers are only sparingly used in Ghana. A recent survey[2] of some 1200 small (10 hectares or less) farmers randomly selected from the five recognized ecological zones of the country shows that in 1989 only 18% of these small farmers used chemical fertilizers of any kind. It further showed that only 30% of the small farmers surveyed had ever used chemical fertilizers. The same survey also shows that 87% of the medium to large farmers (10 hectares or more) used fertilizer in 1989.

Over half of the farmers surveyed that used fertilizer used less than the recommended rates and as farm size increased the percent of farmers using the recommended rates declined. The main reason for using less than the recommended rates was financial constraints--not having capacity to pay cash at the time of fertilizer purchase.

Fertilizer use in Ghana as reported by the Crops Service Department (CSD) for the period 1975 to 1990 is reported in Table III. Fertilizer sales have declined markedly since the early 1980s, when over 20,000 tons of fertilizer nutrients (N, P_2O_5 and K_2O) were used annually. According to FAO this was about 7.7 kilograms of nutrient per hectare in 1983/84. This was about equal to the average of all African countries, South of the Sahara not including South Africa at that date.

---

[2] Fertilizer requirements and use in Ghana, by Obeng, H.G., Erbyrn, K.G. and Asante, E.O. for National Center for Development Studies, March 1990.

- 67

Table III
Fertilizer Sales

(Metric tons nutrient--N, P_2O_5 and K_2O)

Year	Observed
1975	2450
1976	20500
1977	31200
1978	19000
1979	18500
1980	12000
1981	29000
1982	27100
1983	21400
1984	8400
1985	12500
1986	7600
1987	13520
1988	10882
1989	11349*
1990	8409*

* Preliminary

Fertilizer consumption has been declining and by 1987 13,520 Kg of nutrient were used. This was about 3.8 Kg of nutrient per hectare. In 1990, it is estimated that only about 8,400 Kg of nutrient was used in Ghana.

In 1989 fertilizer consumption is reported by the CSD to have been 11,340 tons of nutrient. During 1989, the Global 2000 program carried out by the Extension Service of the Ministry of Agriculture which consisted of some 85,000 Product Test Plots (PTP) is reported to have used half of the total fertilizer use, about 6,000 tons. In 1990 the Global 2000 programs are sponsoring only about 32,000 PTPs, thus only 40% of the fertilizer that was used in 1989 is being used by the Global programs in 1990. This reduction in the Global program in itself accounts for much of the decline in fertilizer use in 1990. Therefore, something must be done to stimulate fertilizer use for Ghana to be able to feed the population that presently exists and one that is increasing by about three percent per year.

This decline in fertilizer use is occurring at the same time that efforts are being made to privatize the fertilizer industry. This is not an encouraging situation for private ventures to develop.

Much of the decline is attributed to rapid increases in fertilizer prices during the decade of the 1980s (See Table IV). This rapid increase in fertilizer prices to the farmer has resulted from two sources: exchange rate corrections and the elimination of fertilizer subsidies (See Table V).

Table IV
Fertilizer Prices 1981-1990
(cedi per 50 Kg)

Year	15-15-15	20-20-20	AM 504	17-17-18	
1981	30.00	--	25.00	--	--
1982	30.00	--	25.00	--	--
1983	53	--	38	--	--
1984	450	--	310	--	--
1985	450	--	310	--	--
1986	450/800	800	500	--	--
1987	850/1420	850/1420	550/850	--	--
1988	2300	2300	1600	2640	--
1989	3500	3350	2350	3600	4200
1990	4200	4200	3100	4400	4200

Source: Crop Service Department

Since these drastic price increases are occurring at the same time that efforts are being made to privatize the fertilizer industry, many farmers (and possibly the general public) have the impression that this is due to the privatization and that dealers are making excess profits. Efforts by the MOA and others must be made to dispel this incorrect accusation toward privatization. This should be done through publications, newspapers, television, radio, etc.

On the other hand, various programs, especially Global 2000 (see addendum for details), have vividly demonstrated that large increases in basic food crops are possible when adequate fertilizers are available to the farmer along with improved seed and better cultural practices. In the Global 2000 PTPs increases of 10 or more Kg of grain (maize or sorghum) per Kg of applied nutrient are common throughout the country. In 1987 the average yield of the production test plots (PTP) for maize was 2.84 tons per hectare compared with an average of 1.34 tons per hectare for the average farmers yield. Thus, an average yield increment of 1.50 tons per hectare for all of the maize PTPs. In sorghum even greater yield increments of 1.98/ha were obtained on some 1095 PTPs in 1987.

Table V
Factors Affecting Increased
Fertilizer Prices in Ghana
Exchange Rate Corrections and
Removal of Fertilizer Subsidies

Year	Exchange Rates cedis 1 $ U.S. Avg. for this year	Fertilizer Subsidy (%)
1981	2.75	--
1982	2.75	--
1983	3.45	--
1984	35.33	--
1985	54.05	60
1986	89.29	56
1987	147.06	42
1988	200.00	30
1989	290.00	15
1990	340.00	0

Source: IMF, International Financial Statistics

In 1989 the Global 2000 fertilizer recommendation was two bags of 15-15-15 or 20-20-20 at 3550 cedis per 50 Kg bag plus two bags of ammonium sulfate at 2350 cedis per 50 Kg bag, or a total fertilizer expenditure of about cedis 11,700. With an average increase of 1.5 tons of maize per hectare and a price of cedis 5000 per 100 Kg bag of maize an increased additional income of cedis 75,000 was produced. Thus a cost benefit ratio of 6.4 was obtained with fertilizer application.

Obeng et al. try to take into account all the additional costs to the farmer of the package of inputs used by Global 2000. This analysis is shown as follows:

70

Economics of Global 2000 Input Packages

Crop Fertilized	Maize	
Fertilizer	2 bags 15-15-15 1 bag urea	
Cost of producing (one acre)		
without fertilizers	16,500	
with fertilizers	28,300	
Average revenue for crops harvested (one acre)		
without fertilizer	30,520	
with fertilizer	57,500	
Average net revenue (profit)		
without fertilizer	14,020	
with fertilizer	29,200	
Average Revenue (profit) from fertilizers per acre		Cost/Benefit Ratio[3]
high yield farms	23,800	3.01
average farms	15,180	2.29
low yield farms	9,950	1.85

The success and benefits of the program was due not only to an increase in productivity through the use of fertilizers, improved seed, and improved cultural practices but also in providing credit and assisting with storage so that post harvest losses are minimized and distress sales at depressed post-harvest prices are not necessary.

Thus, Global 2000 has been successful. It has shown that inputs (fertilizers, seed, improved cultural practices, etc.) do produce a profit. The Global 2000 program is now looking into second generation problems of storage, marketing, credit, etc. One may question whether these problems should be addressed by Global 2000. Someone must address such problems if the programs including fertilizer privatization are to be successful.

[3]Similar cost/benefit ratios have been found to encourage fertilizer use in other countries.

When one asks farmers why they do not use fertilizers, the immediate answer is that they are too expensive. When one delves into this with farmers using fertilizer, it is evident that they do make a profit. The farmers that use fertilizer often say that they do not use as much as they would like, but buy fertilizer in the quantity for which they have available cash or credit. They may then spread these fertilizers over their total acreage, thus fertilizing at rates lower than recommended. Upon questioning the farmers not using fertilizer, it was determined that they too would use fertilizer if they had the cash to pay for it or if they could get fertilizer on credit at reasonable terms.

Again the Global 2000 experience confirms that farmers will use fertilizer if provided to them on credit on reasonable terms. Global 2000 has had all the cooperators they wanted. The number was held to 85,000 PTPs in 1989. It is the author's understanding that many more farmers wanted to participate in 1989. Global 2000, due to some management problems plus collections deficiencies on the loans has limited 1990 PTPs to about 32,000. They have proven that, if the credit is available on terms that perceived as reasonable, the farmers will use fertilizer and will make profit.

With the present situation the GOG, the donors, and the appropriate Banks must find a solution to this credit crunch if Ghana is to be able to produce the food to feed its growing population. This along with improved output marketing may well be the major obstacle to be overcome to assure food production to feed Ghana's rapidly increasing population.

Although privatization has occurred on a small scale another serious impediment to rapid growth of the private sector is the lack of definition as to what constitutes a private wholesaler or retailer. Specifically, the role that the FASCOMs will be allowed to play is of concern. Some see the FASCOMs qualifying as private industry per se and that they should be allowed and encouraged to go countrywide. Others feel that the FASCOMs should be restricted to only wholesaling. Still, others see the FASCOMs feel that the FASCOMs should continue to play an important role and that there are plans to reorganize these FASCOMs so they do qualify as private industries. It is not understood by the author just what changes are anticipated but it is understood that the timetable for this reorganization is about 2 years.

It is recommended that over the long run that the FASCOMs as they are now organized and operated not be qualified as private industry. However, recognizing that the networks of storage and outlets of the FASCOMs is the best available in Ghana, it is recommended that the FASCOMs continue to operate but be confined to those areas for which they were created. The remainder of the country should be reserved for a 4-5 year period for private industry. Within this 4 to 5 year period, the FASCOMs should have been restructured and the private industry could have become established and operating. The decision could then be made on the FASCOMs and possibly the whole country could be opened for anyone and everyone to compete.

The large stock that presently exists in the Government warehouse is a threat to private industry involvement. According to the CSD there was nearly 68,000 tons of product in storage at the end of September 1990 (see Table VI). This can be compared to the 25,780 tons of fertilizer product that is estimated to be sold in 1990. Thus there remains over a two year supply, based on 1990 sales. The question of how the GOG intends to dispose of this large stock, much of which will be offgrade from a physical standpoint, is of concern to the potential importers and wholesalers.

It is recommended that the Extension Service should cease retailing fertilizers to the farmers at the earliest possible date. Also, if the FASCOMs are to continue operation but be confined to the areas for which they were created that much or all of the present stocks could be sold to the FASCOMs. This would encourage the private industry to begin importing at an early date to service the non-FASCOM areas. Should it be felt necessary to sell some of the stock to the private industry, it is suggested that only good or grade materials be sold to them or if offgrade materials are sold to industry this must be done as offgrade material. This should be priced, advertised and auctioned as offgrade. In this way the public will know that if the industry pays less than book price they will have to reprocess such materials before they can command full prices in the marketplace and when sold to the farmers.

Another concern is the potential of continued donor furnished fertilizers being received by Ghana. The Secretary of Agriculture has assured the team that he is doing his utmost to convince potential donors to provide funds and not fertilizers.

In the case where donors still want to provide tied aid so their fertilizer industries can participate in the Ghanian market, it is suggested again donations be given in the currency of the country but stipulated to purchase fertilizer from designated country or countries. These monies would then be auctioned to the importers who would then use this currency to purchase fertilizers in the donor country or countries priced on a CIF basis at Tema port.

Should a country still insist on providing fertilizer, the GOG should then auction this fertilizer as soon as it arrives in Ghana to the private sector fertilizer wholesalers and distributors.

The Ministry of Agriculture is said to have nearly 100,000 metric tons of fertilizer storage capacity (warehouse). The potential fertilizer importers and wholesalers are interested in knowing what the Ministry intends to do with this. The GOG should at the earliest let it be known if they are going to lease or sell these warehouses and on what terms.

Again, on credit there is widespread need for credit. Credit on reasonable terms will do much to encourage a dynamic and competitive privatized fertilizer industry. This is true at the importer, wholesaler, retailer and the farmer level. With credit available, more

Table VI

Fertilizer Supply, Consumption and Stock Balances
Preliminary Data as of September 1990

Fertilizer Type	Total Supplied	Consumption	Balance Stock
UREA	24,007.9	2,460	21,547.9
S/A	21,506.5	9,375	12,131.5
15-15-15	8,891.35	5,449	3,442.35
20-20-0/22-22-0	19,358.5	5,480	13,878.5
25-15-5/23-15-5	14,794.6	894	13,900.6
17-17-17	---	---	---
KNO_3	371	38.1	332.9
M O P	3,169	2,084.55	1,084.45
SSP/TSP	728	---	728
C A N	23	---	23
10-20-15	550	---	550
TOTAL	93,399.85	25,780.65	67,619.2

74

people can enter the various functions of the fertilizer industry. Credit schemes need to be developed and their terms broadly disseminated in concise and simple terms. It seems that this must be through the various banks. These banks will need additional well trained staff. Here donor organizations can play a large role in providing training and opportunities for senior staff to study functioning credit systems in other countries, especially in the developing world. Probably some of the APPP/Funds would be well spent in this manner.

The incentive environment as well as the taxes, fees etc., are, as yet, not well known by the potential fertilizer industry. This must be spelled out in clear, simple and concise terms. Possibly a seminar or a panel discussion including printed literature, aimed at future importers and wholesalers would go a long way toward alleviating doubts and fears that may otherwise limit participation. Again APPP funds could be well spent on this.

The present system of government fixed prices and discounts to dealers based on volume of purchase is not adequate at least for the very small dealer. The price list and the dealer discount based on volume of purchase is shown in Table VII. The 200 cedis per bag discount is not sufficient to pay for the loading, transport, unloading and storage and still have any profit margin for the small dealers who are expected to sell at the fixed retail prices indicated in Table VII. It is, therefore, recommended that the control be lifted on pricing to the farmers. Should it still be decided that retail prices continue to be fixed, that the volume discount be studied with the intention of increasing the discount to provide incentive at least for the small dealers who cannot buy in larger than 50 bag lots.

Another consideration should be given off-season discounts to encourage fertilizer movements during the off-season. This would alleviate storage problems in the regional and district warehouses and still provide added incentives to fertilizer retailers that have their own storage.

3.0 Role for the Public Sector

A privatized fertilizer industry still requires certain services that can best be provided by the public sector. Some of these services may include, but not be limited to:

1. <u>Quality Control</u>

   There must be standards of quality, both chemical and physical, that are adhered to on fertilizers that are imported and that are sold by dealers. This is a mechanism that assures the farmer that he is getting what he is paying for. It also assures the serious dealer that he is competing on the same plane with other dealers. This function can usually be best carried out by a public sector organization. This function would require well devised and easily enforced standards and laws. It would also require well equipped laboratories and trained personnel. Again funding will be required and APPP funding for local currency expenditures might be considered.

75

Table VII

1990 Fertilizer Price Schedule, Effective 9th February 1990

Type of Fertilizer	Retail prices ¢ per bag.	Dealer discount for minimum purchase of 50-50 kg bags. Available at all district, regional, and national depots.	Dealer discount for minimum purchase of 500-50 kg. bags. Available at designated regional depots.	Dealer discount for minimum purchase of 2000-50 kg. bags. Available at national depots only.
Sulphate of Ammonia	3,100			
Single Superphosphate	3,000			
Muriate of Potash	3,800			
Urea 25 kg. bag	2,200			
Urea 50 kg. bag	4,200			
15-15-15	4,200			
17-17-17	4,400	¢200/50kg bag	¢350/50 kg/bag	¢600/50kg bag
25-15-5	4,900			
20-20-0	4,200			
22-22-0	4,400			
Potassium Nitrate	7,300			

Terms of sale: Ex-depot for cash
Minimum purchase quantities may be satisfied with any combination of fertilizer types.
Minimum purchase quantities are for each individual purchase.

Designated regional Depot:
- Bolgatanga
- Wa
- Techiman
- Kukurantumi
- Sekondi
- Ho

National depots:
- Tema
- Swendru
- Tamale

76

2. Training

For farmers to properly use fertilizer they must be knowledgeable on the proper fertilizers and their use. A good fertilizer dealer should be capable and willing to provide this knowledge to his customers. Thus, dealer training is a must, and trained dealers can become effective allies of and a supplement to agricultural extension programs in transferring fertilizer and crop production technology to the farmers. The extension service should, along with the fertilizer wholesalers, be active in assuring that fertilizer dealers are knowledgeable and capable of servicing the farmers with the latest information and know how.

Training at the wholesale and the imports levels will also pay good dividends as these functions emerge in the new setup.

Such training at least in the early stages of development of a private sector will have to be public sector sponsored and thus, funds (such as APPP) which were well used in these endeavors could help defray the local currency costs.

3. Information System

Timely and reliable information is required for good planning of fertilizer import, storage, distribution, sales, etc. Probably at least in the early years this should be done within the MOA. It is recognized that the CSD is already providing such services. These efforts need to be expanded. To do sill require additional training, equipment, space, etc. Again APPP funding can assist in local currency needs.

4.0 Technical Assistance Needs

In recognition of the magnitude of the effort that will be necessary to bring into being an efficient and dynamic private fertilizer industry, technical assistance on a full-time basis for 4 to 5 years will no doubt be required and should result in a high pay off.

This assistance should be in all phases of marketing-procurement, port clearance, transport, storage, wholesaling, retailing, pricing, credit, quality control, staffing, specifications, etc. Probably an organization that can call on many disciplines with broadly experienced personnel would best provide this TA and the one organization that stands out in this type of effort is the International Fertilizer Development Center (IFDC).

It is gratifying to know that the Secretary of Agriculture is cognizant of IFDCs successful effort along these lines in Bangladesh. The Secretary has stated such a program is just what is needed in Ghana. If such a TA project is initiated the two or three person team assigned to Ghana would be in the best position to determine the types and magnitude of short term assistance that would compliment their efforts in creation of a successful private fertilizer sector.

11

ADDENDUM

Global 2000

Global 2000 is an initiative within the Ministry of Agriculture (MOA) and in the Extension Service to improve food production through the use of a package of inputs (improved seed, modest levels of fertilizer, pesticides, and improved cultural practices including line planting and weed control). All of these technologies are based on existing technology not now widely used by the Ghanaian farmers.

In addition, the Global 2000 program has provided adequate credit to cover the costs of the recommended and required purchased inputs. The credit could be repaid in cash or in kind after harvest and drying of the produce. The Global 2000 is jointly sponsored by the Sasakawa Foundation of Japan and the Jimmy Carter Foundation, Atlanta, Georgia, USA.

Modest funding is made available to support three expatriate staff and one national coordinator from the Ministry of Agriculture. Also, limited funding is made available for credit to farmers but this has been greatly expanded by the Ministry of Agriculture and the various Banks that deal with agricultural credit in Ghana. More recently some funding is made available to help in the construction of cribs that are designed to improve drying and eliminate rodents and insects to cut down on postharvest losses. Some funds have been made available for vehicles, automobiles, trucks, motorbikes and bicycles in support of the extension service work in the project.

The method of operation has been the Production Test Plot (PTP). These plots are of one acre in size and the farmer agrees to follow recommended practices and to demonstrate his plot and the results there to a minimum 10 neighboring farmers. For this the cooperating farmer receives the inputs on credit.

These two foundations have joined together to form the Sasakawa Africa Association (SAA) with Dr. Norman E. Borloag as president and principal senior advisor. This organization in Ghana is generally known as Global 2000. The SAA is also active in Togo and Benin started by the Ghana office and staff. In the Sudan, Tanzania and Zambia programs similar to Ghana are under way. This program started in 1986 with some 20 PTPs in each of two northern regions. In 1987, the program was expanded to cover 2000 PTPs. In 1988 the initiative was expanded nationwide with some 15,000 PTPs. The results of the first two years were so impressive that the MOA wanted to expand to at least 100,000 PTPs in 1989. About 85,000 PTPs were conducted in 1989. During the first two years to the repayment of the credit was nearly 100 percent. However, with the big expansion in numbers there was a loss of control over the PTPs. (It has been said that at least 1000 extension service specialists were involved in 1989) Credit recovery was a problem to varying degrees throughout the country--as much as 90 percent recovery in some regions and as low as 25-30 percent in others. This was in part due to the system not being

18

able to absorb and dry the grain for payment in kind. The Ghana Food Distribution facilities were overflowing with grain and eventually some 17,000 tons were exported to Angola. To illustrate the magnitude of this program in 1989, the Global 2000 effort used over half of the total fertilizer sold in Ghana. Thus, Global 2000 successfully met its objectives of improving food grain production. It was, however, stymied by problems of a second generation--credit recovery, marketing, storage and drying, transport, etc.

Faced with these second generation problems, the 1990 Global programs were limited to 32,000 PTPs and the emphasis has been shifted away from maize and sorghum to other crops including cowpea, soybean, quality protein maize and to some degree intercropping with root crops. With the closure of the Ghana Seed Company and no immediate solution for good seed, the Global 2000 program has been supporting potential seed producers with its inputs and credit programs. These programs support producers for up to 5 hectares of maize, sorghum, rice, cowpea, soybean, etc. per grower, with additional credit being made available for cribs for proper drying and storage.

ANNEX C

Seed Industry Privatization
Program and Status

Prepared by
John Harding
Sigma One Corporation

1.0 Introduction

Ghana's food crop production has been poor as yields of maize, rice, and sorghum, and millet have not supplied the country's demand.

The "formal" seed industry, mainly the Ghana Seed Company (GSC), was not producing a quality product as improved seed sales were less than 10% of the country's total. The traditional open markets, operated by "market women", were selling the bulk of commercial seed.

It became clear to the donor organizations that the seed industry needed a complete overhaul, since the GSC operation was destroying what little creditability existed for using improved varieties. Donor support was committed to exploring new possibilities to "restructure the seed industry". Private sector involvement was highly recommended.

The Agricultural Productivity Promotion Program (APPP) was designed to support this need.

2.0. Project Description

2.1. Strategy

The strategy for the APPP was for the GOG to restructure and/or privatize the GSC to help revitalize the seed industry. The GSC had been in operation since August 1979 right after the country experienced a period of high seed sales (1974-1978). Since then there has been a steady decline in part due to poor quality control standards.

The APPP was designed and implemented in August 1988 to assist the GOG in policy analysis as a productive means to support the seed industry. It also called for a plan to make the GSC attractive to the private sector, even though it was recognized that for farmers to regain confidence in the GSC, as a supplier of improved seed, it would take years beyond the scheduled PACD of September 30, 1991.

90

2.2 Conditions

Target dates were established for the APPP conditionalities.

1st Tranche was for two studies to be started:

1. Study on the Ghana Seed Company assets valuation.
2. Study on the Ghana market for improved seeds.

2nd Tranche was for:

1. The completion of the two studies.
2. An implementation plan, acceptable to USAID, which includes detailed actions to explore options for privatizing and restructuring the GSC.

3rd Tranche was for:

1. GOG selects an option for privatizing/restructuring the GSC that is acceptable to AID
2. GOG submits a plan, acceptable to USAID, to implement the selected option.
3. GOG submits evidence, acceptable to USAID, that it has launched implementation of the selected option.

APPP was expected to accomplish the privatization or restructuring of the Ghana Seed Company resulting in an increased supply of improved seed to farmers.

2.3 Implementation

The conditions for each of the three tranches were met and Project Implementation Letters (PIL) were signed to release the project funds.

One aspect of the GOG's implementation plan for restructuring or privatizing the GSC was to close down the seed company's operation completely in December 1989. This action went beyond the required conditionalities of the APPP. The basis for the decision was that the production of certified seed for sale to farmers should be a private sector commercial activity.

The implementation plan for restructuring included establishing a National Seed Certification Service and to invite private sector participation in the commercial seed production program. Accordingly, 163 farmers registered as official seed growers. Hopefully, these seed growers will see the opportunity to profit from a deregulated market. APPP funds were targeted to assist in the development of the Ghana Seed Inspection Unit (GSIU), the country's new designated certification and seed testing service.

81

The Ghana Seed Company was no longer an issue. The GOG acted decisively in terminating the seed operation, yet there was not an immediate course for action to implement other parts of the plan.

The emphasis on the mid-term evaluation of the APPP seed component changed considerably. It is now more appropriate to look at the role USAID should play in the future seed industry.

2.4 Impact

A profile of what has happened to the seed industry revitalization and privatization issues addressed by the APPP are:

1. The major change was the closing of the GSC. This was the GOG's message to the seed industry, in general, that restructuring would occur. This message created confusion with the private seed growers who were accustomed to selling their seed each year to the GSC. They continued their seed production efforts even through they no longer had the GSC market. The confusion was that they expected the GOG to still purchase their seed.

2. The progress the GOG has made in initiating its plan for restructuring the seed industry was to request a study be undertaken by the World Bank. In December 1989, a report was completed titled: Restructuring the Ghana Seed Industry by Chopra and Douglas. This was an extensive report outlining in detail all aspects of seed industry development. It is an excellent guide to restructuring old seed programs or developing a new ones.

In a follow-up study, the World Bank commissioned two consultants in July 1990 to develop a project paper based on the Chopra and Douglas's report. As a result, the Ghana Seed Industry Development Project was designed. This proposal used the restructuring concepts and created a working paper as the basis for a seed project that focused on Seed Production and Institutional Development. Its estimated cost would be $3.6 million over a five-year period.

The Crop Services Department (CSD) revised the above paper in November 1990 and requested assistance from the World Bank for support of their three-year, $4.31 million project titled; The Ghana Seed Industry Project. This project paper is the first clear indication of how the MOA wants to go with restructuring the seed industry. The constraints are mainly that the paper is not specific or detailed enough for a project of its size. It does represent a document that focuses on building the public sector as a means of supporting the private sector. A majority of required funding would be for buildings and vehicles.

The options that exist for accelerating the restructuring of the seed industry are for the donors to decide how to respond to the CSD's request for a project. Ghana still needs a viable, functioning seed program and is in a perfect position to restructure this industry. The messages are:

- The GOG is ready to completely redesign the seed industry as a free-market enterprise, encouraging private sector participation.
- Donors, both USAID and the World Bank, have committed funds to the restructuring of the seed industry.
- Seed growers are still producing seed even without a guaranteed market.

All the components are there for the seed industry to flourish and grow, yet it remains stagnant because with the three groups; public, private, and donor, one group doesn't know what the other groups are thinking or doing.

2.5 Immediate Emphasis and Recommendations

From the previous studies commissioned by USAID and the World Bank, a lot of useful information has been written about the "Restructuring of the Ghana Seed Industry". Essentially, the conceptual foundation for a seed program has been developed in these reports and a project proposal has been designed and submitted. This project is reviewed in the Framework of a Seed Industry section.

The intent of this evaluation of the previous reports on restructuring the seed industry is to make specific recommendations and to generate action.

To restate the proposed status, the basic framework for restructuring has been adequately described and charted from concept, to proposal, to project design. Next comes a timeframe for action to take place. Before project implementation occurs, there needs to be some additional conditions met to strengthen the new seed industry's foundation.

The most critical element missing from the current proposal is private sector representation on the NSC. This committee is to be revived to reassess the original seed laws, review the direction the restructuring seed industry should take, and formulate a governing body to oversee the new seed programs. Contrary to some beliefs, there is no private sector representation on this committee today.

-93

RECOMMENDATION: TO BE COMPLETED BY FEBRUARY 1, 1991	The MOA should decide which cities represent the seed production regions in Ghana and arrange local meeting to inform the seed growers about the upcoming National Seed Seminar. Selection of regions could be, for example: Ho: for the Volta Region Winneba: for the Central and Western Regions Kumasi: for the Ashanti and Brong-Ahafo Regions Tamale: for the Northern, Upper East and Upper West Regions

A list of registered seed growers can be obtained from the GSIU's files. All of these seed growers should be contacted by the GSIU agents, Extension Service agents, and the Crop Service personnel and informed that their attendance is mandatory at the pending National Seed Seminar.

RECOMMENDATION: TO BE COMPLETED BY: FEBRUARY 15,1991	The MOA should sponsor the National Seed Seminar for the purpose of informing all seed industry Participants representing seed growers, dealers, technicians, and donors the current status of the restructured industry.

The MOA must communicate to the seed growers that they--the seed growers--need to select among themselves, four representatives to serve on the NSC, representing the private sector. These four seed growers could represent specific crops, regions, or growers associations. It will be their decision how they can best discuss and speak with one voice on matters related to private sector seed policy.

Without the private sector asserting their position, the function of the NSC will lose its purpose and become another bureaucratic jumble more likely to inhibit rather than enhance the needs and growth of the country's seed industry.

The Director of the proposed National Seed Service (NSS), if identified, should demonstrate the MOA's intention to serve this body of growers and assist them in organizing themselves for the NSC selection process. If the Director of the NSS is not available, then the Director of the Crop Services Department (CSD) should be the spokesperson.

Currently, the seed growers are either not informed or misinformed concerning the MOA's future position on seed production. This seminar would be an ideal opportunity for the MOA to come forward, state their position, and offer support to this independent group of seed growers. It will not be an easy task.

94

After the selection of seed growers to represent the private sector on the NSC, the first meeting of the NSC should take place to start the policy dialogue on restructuring the seed industry.

RECOMMENDATION: TO BE COMPLETED BY MARCH 1, 1991	That the National Seed Committee convene to address policy issues, the proposed roles for both the public and private sector, and to review the proposed Ghana Seed Industry Project.

The purpose of the National Seed Seminar is to inform the agricultural seed sector of the MOA's position and one group, besides the seed growers, that lacks consistent up to date information is the donors. The donors have one element in common--they want to give money to support the seed industry restructuring effort. Presently, USAID doesn't know what the World Bank's position is regarding seeds and the World Bank doesn't know what USAID is thinking. Both the GTZ and the CIAD are involved in supporting the research stations and breeder seed production. All donors should be presented the MOA's plan for the seed industry at the same time.

RECOMMENDATION: TO BE COMPLETED BY FEBRUARY 15,1991	Representatives from USAID, The World Bank, MOA, and other donors (GTZ, CIAD) meet to develop a plan of action to support the restructuring of the seed industry.

During this meeting with the participating donors, a commitment needs to obtained from each donor on what aspect of the seed restructuring project they are willing to contribute to.

Specific roles to be addressed include:

- Who will control the supervision of the project?
- What resources will be provided by each donor?
- For how long?
- What will be the monitoring and reporting requirement?

Once there is an agreement, then action can take place for the implementation of the restructured seed industry program.

From a technical standpoint, quality control is one component of the seed industry that is essential for success. The Ghana Seed Inspection Unit (GSIU) needs to be strengthen now. Its role will be discussed at length in the Framework of a Seed Industry section, yet it is a component that needs immediate support.

RECOMMENDATION: TO BE COMPLETED BY APRIL 1, 1991	The GSIU be in place, staffed, and mobile to register, inspect, and certify seed growers for the next crop season.

The emphasis of the above recommendations are to integrate the private sector into the public sector and to facilitate the restructuring effort by coordinating donor involvement. Acting on these recommendations would complete the foundation of rebuilding the seed industry with the private sector as an integral part of the framework.

3.0 Framework of a Seed Industry

The overall objective of the Seed Industry is to continually upgrade the quality and improve the quantity of agricultural products. This is accomplished by the desire of all principles involved, representing both public and private interests, to initiate a seed program that addresses all aspects of the seed industry; legislation, research, production, quality control/certification, marketing, extension and training. These components are necessary for a viable and successful seed industry.

3.1 Review of Each Component

1. Legislation develops policy that defines and supports the country's seed programs. Policies need to be established, reviewed, and revised, if necessary, to enhance and stimulate overall agricultural progress.

2. Research in agricultural production is based on having the best varieties available to the farmers and for the farmer to accept these new improved varieties and incorporate them into their farming system. Plant Breeders and farmers are linked through the Extension Service's efforts to demonstrate potential varieties in on-farm tests.

3. Production and seed multiplication starts with the Plant Breeders and their selection of Breeder Seed from research plots. All subsequent production for Foundation Seed and Certified Seed, must be monitored closely to insure the genetic composition and purity of the variety.

4. Quality Control/Certification involves determining the eligibility of new varieties from research organizations, verification of the seed source, field inspections, sampling processed seed, seed testing and evaluation against quality standards, and labeling.

5. Extension, education and training strengthen the infrastructure of the seed industry and provide linkages within the whole system from plant breeders to farmers and from farmers to plant breeders

6. Marketing is a method that promotes widespread use of improved varieties and to make the seed available for purchase from a seed enterprise.

3.2 Current status in Ghana

1. Legislation, defined by the 1972 Seeds Decree, established the National Seed Committee (NSC) as an advisory body to the seed industry. This committee, chaired by the Secretary of Agriculture, is represented by members from various MOA departments, institutes, and university faculty. It is currently being revived, with additional members being added from the GSIU, the GLDB, and from the private sector, represented by seed growers and dealers.

2. Research is conducted for seed crops by the Crops Research Institute (CRI). The main emphasis in plant breeding is on the maize and cowpea. Six improved maize and four cowpea varieties have been released since 1986. Minor emphasis is on the research for soybeans, rice, groundnuts, and root and tuber crops.

3. Production or multiplication of seed is produced in systematic stages: Breeder Seed, Foundation Seed, Certified Seed, and Commercial Seed. Currently these classes of seed are being produced in name only. The GSC did have a seed lab for testing and did provide technical assistance in the field to seed growers, but quality control was not enforced or maintained. Even the Foundation Seed produced by the GLDB for the 1990 crop was of questionable quality, both in germination and purity. Only recently has the GSIU been formed to insure quality control through field inspections and seed testing.

4. Quality Control/Certification was handled by the GSC until December 1989. There was a seed lab in Winneba. The Ghana Seed Inspection Unit (GSIU) has been in the makings since 1987, but has developed slowly. At one point, a two-year, $756,000 project was presented to USAID for 1990-1991 implementation. APPP has programmed $467,000 as part of the 2nd tranche and $637,000 has been earmarked from the 3rd tranche for "seeds". It is not clear if this money was put to constructive use or what it was used for.

The inspection unit started working in Tamale with the seed growers in August 1990. It was more of a formality in announcing themselves as it was too late to inspect fields. The GSIU is still being put together, yet it will take a concentrated effort to get their program in place for the next crop season, starting in April 1991.

87

5. Extension information has been through many groups. The Extension Service provides information on new improved varieties. Crop Services Department extends information on crop rotations and fertilizer usage. The GLDB promotes the usage of improved seeds and conducts on-farm trials. The GSIU, being under the Plant Protection and Regulatory Services Department (PPRS) provides information of pesticide usage. A new extension group, the National Seed Service (NSS), is being formed to coordinate all activities related to seed and be the secretariat for the NSC. This is will be covered in more detail in the Future Project section.

6. Marketing for improved varieties was through the GSC and the GLDB as Certified Seed. The remainder was sold through the local markets as commercial seed and grain. In 1989 a marketing report was prepared titled: Revitalization of the Seed Industry, by the Media Majique and Research Systems (MMRS). This report covers in detail marketing strategies for improved seed.

3.3 The Future Project

The restructuring process started with the Ghana Seed Industry Options Team in October 1986. It has then evolved through a series of recommendations until the World Bank's report by Chopra and Douglas in December 1989 outlined a specific plan for restructuring the seed industry. Next came the World Bank's report in July 1990 by McAlister and Vordzorgbe titled; Ghana Seed Industry Development Project.

From this report, the Crop Services Department in the MOA modified the project design to fit their own plan and requested assistance from the World Bank to fund the seed project. The Ghana Seed Industry Project proposal was prepared in November 1990. The project is currently under review by the World Bank staff.

USAID has been involved in Ghana's seed industry development since 1973 and has continued in a supporting role up to the APPP. The mission's current development strategy has proposed additional support to the seed industry under the PL 480 Food for Progress paper. As previously recommended, donor coordination is necessary to proceed with the seed project in a constructive manner.

The evaluation process of the APPP has included a review of the current proposed seed project by the CSD. The review is evaluated and presented on how it relates to each component in the seed industry.

1. Legislation will be in the hands of the National Seed Committee (NSC). Their first mandate is to review the existing 1972 Seed Decree and make any

88

appropriate changes to accommodate the private sector. The NSC, as it stands today, is not represented by the private sector and this issue has been addressed in the immediate recommendations. The NSC must be a progressive thinking, far-sighted group with flexibility to readjust policies when necessary.

2. Research will still be with the Crops Research Institute (CRI). Maize will continue to be the focus of the breeding program. Soybean research has increased and cowpea has decreased. More emphasis will be put on root and tuber crops. As with most public research organizations, financial support is limited. If the new improved varieties prove to increase yields significantly, then in the future it would be reasonable to have a small portion of the seed costs go directly back to support the breeding program through royalties. The production of Breeder Seed will be discussed next.

3. Production or multiplication of seeds is the main focus of this seed industry project. They will be discussed individually.

(a) Breeder Seed production would continue through the CRI for maize, rice, sorghum, millet, groundnuts, soybeans, and cowpeas. In anticipation of the expected demand for increased production, CRI is programmed to receive $665,000 to upgrade the present facilities at Kumasi and Nyankpala. This would include equipment for storage, laboratories, drying and processing. Technical training for the staff in the mechanics of seed production is also included.

Breeder Seed is an important component in the stock-seed chain. Its value, based on the overhead costs of research and development, cannot be determined in actual costs figures. Breeder Seed is a very expensive product and should be treated as such.

After interviewing the plant breeders at Kumasi, they indicated that the present equipment being used for seed production is somewhat limited. The project paper does not clarify how Breeder Seed production would be handled. It would be most effectively managed in a separate building with drying, cleaning, and storage space. The amount of support requested is somewhat confusing since both Kumasi and Nyankpala are already supported by donor projects. Only 1000 kgs per year of Breeder Seeds have been projected over the next five years. This is a relatively small amount of seed to justify a large operation. This request needs further review. It would be necessary if the CRI had a specialized unit for seed production where additional amounts of Foundation Seed could be produced as part of the seed-stock security program.

(b) Foundation Seed production would become the sole enterprise of the Grains and Legume Development Board (GLDB). The project paper requests support for the development of seven locations at a cost of $567,000. This

includes tractors, farm implements, storage, laboratory, drying and processing equipment. It also includes fertilizer, herbicides, and training. Annually, between 26-30 MT of Foundation Seed are projected over the next five years. The requested amount for support is grossly underestimated for seven locations.

There is concern that if the GLDB is the only producer of Foundation Seed, problems could arise in field production, proper storage, and with fair and reasonable seed pricing. In a sense, it would be "keeping all the eggs in one basket". As of now, it appears the GLDB is the best equipped organization to produce Foundation Seed, from the processing side. The request for funds should be examined and could be increased to cover the cost of building a specialized drying and cleaning plant, along with controlled storage.

Local seed growers have demonstrated their agronomic abilities to produce seed in the field, yet most have limited access to proper cleaning facilities. It may be premature to expect a private grower to invest in the necessary equipment to produce the high quality standards required for Foundation Seed. Ideally, if a group of growers purchased one of the GSC cleaning operations or a private seed company wanted to invest in a quality program and demonstrated they could process Foundation Seed satisfactorily, then the Seed Policy/Laws should encourage the private sector. This issue will need to be addressed by the NSC.

One positive aspect of the GLDB is their experience in seed production. They are staffed with qualified people. They are committed to educating the farmer on the use of improved seed. Their present operation for Foundation Seed production works, yet it needs to be upgraded and expanded. To what degree needs to studied.

Because of Ghana's warm and humid climate, seed germination can quickly decline if the seed is not stored properly. There is great concern about having a National Seed Security Reserve stored in-country as insurance against disasters of one kind or another. From all observations, the GLDB could produce, process, and store this seed-stock as one of their responsibilities, especially if the amount of their current seed production program decreases.

4. Quality Control/Certification will be controlled by the Ghana Seed Inspection Unit (GSIU). The role and function of this unit is the most critical in the restructuring effort. The purpose of the GSIU is to protect the consumer. That requires monitoring the registered seed growers through all the steps from seeding to storage. This unit needs total support to be put in proper operation. USAID funds have been programmed for this unit under the APPP, yet there is no physical evidence of this to date. It is highly recommended that this unit be funded now so it will be in place, equipped, mobile, and functioning by April 1, 1991.

90

The Seed Industry Project has made the GSIU a major component, proposing $1.32 million over three-years. Five locations would be developed with Pokuase as the site for the National Seed Testing Office. The plan includes buildings, housing, vehicles, specialized equipment, and training. This is a long-term investment.

There should be qualified, trained people from the GSC who operated the original seed testing laboratory in Winneba available to the GSIU.

5. Extension programs for seed production have been through the Extension Service (ESD), the Crop Service (CSD), the GLDB, and most recently, the GSIU. Each organization has a specific role improving crop production and keeping growers informed of the current information on new varieties, pesticides, storage techniques, and farming practices.

Recognizing seed production is a multi-disciplined program, the MOA, through the CSD, has created the National Seed Service (NSS). The NSS would focus on all aspects of extension in the seed industry.

The NSS would expand the roles of extension by complimenting the other extension efforts. Through technical training, they would develop a corp of "seed material" specialists who would work throughout the seed sector. To support this effort, The Ghana Seed Industry Project has outlined a three-year, $1.8 million assistance package to develop and strengthen this service. The formation of the NSS is the key element in the MOA's plan to see the private sector in the seed industry succeed.

The main responsibility of the NSS would be to provide leadership to the new restructured seed industry. This service would coordinate all aspects of seed production, from Breeder Seed through Commercial seed, including the stock-seed security program. The NSS would be the seed industry's link to banks and other non-governmental organizations.

6. Marketing of agricultural products will be the responsibility of the private sector. Ideally with the formation of growers associations and, eventually, seed companies, Certified Seed and any other marketable products would be promoted through specific marketing strategies.

A local consulting group, the Media Majique and Research Systems (MMRS) completed a study in 1989 which achieved a through analysis of the seed market and developed an intensive campaign of advertizing to promote improved varieties.

The new National Seed Service (NSS) would support and strengthen the marketing and promotion efforts of the private sector.

3.4. Summary

The proposed Ghana Seed Industry Project should be supported as a long-term project or in the short-term, starting with specific components. The whole restructuring process will take years to develop since it includes all parts of the economy. Organization, training, getting equipment in place, exploring avenues of credit, education, promotion, quality control are all parts of a complex system that intertwine. They all build off of each other through communication and coordination. They all take time.

The recommendations focus on what is required to start the process of restructuring. Progress will come in stages, developed step by step.

The Secretary of Agriculture is well aware of the need for action to take place and has requested technical assistance from USAID to be a catalyst to get the restructuring process started. In all reality, the Secretary's concern is what it will take to get the process started.

4.0 Conclusion

The Agricultural Productivity Promotion Program (APPP) was a gift donation to the Government of Ghana (GOG). Visual results are vehicles, office equipment, and feeder roads. These are valuable contributions and donating $20 million to this program has had a positive impact on Ghana. The Department of Feeder Roads (DFR) does not have to deal with the complexities of policy, relating to restructuring and privatization. The DFR develops the feeder roads meter by meter, kilometer by kilometer and progress can be measured day by day.

The idea of restructuring the Ghana Seed Company (GSC) into a private enterprise changed drastically and its termination created a fiasco, or in other terms, an opportunity to be part of the formation of a new seed industry which will include private sector participation.

USAID/Ghana has made a commitment to assist this new seed industry get started, develop, expand, and be a profitable success. To achieve this goal, specialized technical assistance should be utilized to monitor and evaluate the progress. The degree of involvement will relate to the time and amount of the commitment by USAID and other donors.

This evaluation has provided valuable insights to the seed industry as it exists today in Ghana. The overriding fact is--Ghana has tremendous potential to achieve its goals in seed production. The implementation of the Seed Industry Project will be the start of the restructuring that will lead a successful campaign. Rebuilding the seed industry should be approached like the DFR develops feeder roads--meter by meter, day to day--with clear objectives and reasonable goals.

92

ANNEX D

Evaluation of Feeder Roads Component

Prepared by
Tej Mathur
REDSO/WCA

1.0 Background

Roads are the lifelines of Ghana's rural economy and provide increased access to inputs-output marketing. A good road network was built in Ghana before 1970. But, due to inadequate or no maintenance, by 1984 the condition of about 70 percent of the rural roads deteriorated to such an extent that only 4-wheel drive vehicles could transit. Accessibility to many interior areas was severely curtailed. According to a study undertaken by the Ministry of Agriculture (MOA), poor roads account for up to 70 percent of the difference between the farmgate price and the retail price of some products. Farm to market transportation cost on poor roads are on the average 125 cedis per ton-km, which can be reduced to 80 cedis per ton-km with rehabilitation and maintenance of roads.

In 1983, recognizing the past mistake of neglecting the roads, the GOG gave a very high priority to feeder roads rehabilitation and maintenance in the Economic Recovery Program (ERP).

2.0 APPP Feeder Roads Component

The APPP Project (1988-91) planned to provide $6.00 million for the rehabilitation of feeder roads in 3 tranches, each of $2.00 million. The first tranche, $2.00 million was provided for 1989 DFR budget support. The geographical allocation was determined by MOA and DFR based on certain criteria. Priority was given to areas where fertilizer distribution and agricultural extension services where initiated. However, considering the need and the absorptive capacity of the DFR, the second tranche was raised from $2.00 million to $5.7 million. As a result, the USAID funding level moved from 11.0% in 1989 to 16.0% in 1990 of the Department of Feeder Roads budget. Funding for DFR in Tranche 3 is yet to be programmed. The following were the target outputs (Table 3.4 of PP) for rehabilitating and maintaining non-cocoa feeder roads for each of the 3 years beginning in 1989:

a.	Graded and shaped	700 km
b.	Full graveling	155 km
c.	Spot improvements	35 km
d.	Drainage structures & culvert installed	100 (amounts)

3.0 Organization and Management of the Department of Feeder Roads (DFR)

The DFR was created in 1981 and started functioning independently within the Ministry of Roads and Highways (MRH) in 1982. The Ghana Highway Authority (GHA) and the Department of Urban Roads (DUR) are the other two agencies within the MRH.

The DFR has been expanding rapidly since its creation in 1981. In 1982 there were only 5 engineers; at present (1990) there are 33 engineers working against a total requirement of 67. There is a severe shortage of senior engineers with experience and training. The situation is likely to improve in the next couple of years as the junior engineers gain experience and move up.

The DFR is responsible for the management of about 22,000 km of roads. The classification of roads by the type of surfacing and by driving condition is given in Table 1.

Annex J of Project Paper gives the institutional analysis of the DFR. The World Bank report "Institutional Study of the Department of Feeder Roads" of October, 1990 proposes ways of strengthening the institutional structure and management systems to rehabilitate and maintain the feeder roads network under the proposed National Feeder Roads Rehabilitation and Maintenance Program (NFRRMP) a 10-year plan. The first phase (1992-96) is expected to rehabilitate approximately 3,000 km of rural roads. Each of the next two phases are expected to rehabilitate 4,500 km.

Executive summary of the recommendations of the World Bank Report are given in Attachment A. The following are some of the important findings and recommendations:

- Some of the findings: lack of trained manpower at the middle management level; unfavorable salary scale compared to private sector and sister agencies; lack of preparedness for future rehabilitation and maintenance planning needs; the scope offered for increased voluntary participation in routine maintenance; and lack of full procurement capacity.

- A strategy for future donor support should be developed so that the pace of rehabilitation does not exceed the capacity to maintain. Donor program must focus on supporting the development of regional institutional capacity.

- The payment system should be streamlined and some approval and payment responsibility be transferred to the regional level.

- At national and regional levels, the channels of communication between agencies which have bearing on feeder roads planning should be reinforced.

gt

3.1. Construction Strategy

Up to 1985 the DFR was employing capital-intensive (CI) methods for road work. Then in 1986, with the assistance of the World Bank ($6.0 million), UNDP ($1.7 million) and the ILO, (the implementing agency) the GOG undertook a 4-year pilot feeder road project using labor-intensive (LI) methods. The LI approach was found to be about 15% cheaper than CI approaches. Additionally, it creates more jobs which in turn helps in improving the local economy.

To encourage the use of LI methods, the GOG with the technical assistance (TA) of ILO, provided a 6-month training course to selected contractor and their employees along with the DFR engineers and technicians. The successful contractors were given a $160,000 loan to purchase equipment payable in 4 years. Initially, these contractors were provided guidance and guaranteed work. During the period 1987 to 1990 thirty nine (39) labor-based contractors have been trained. The program has been quite successful.

Due to shortage of PAMSCAD and other funds, the DFR is concerned about the continuation of the training program and is interested in seeking assistance from the USAID. SInce this program has been successful in promoting private enterprise and generating employment in rural areas, it is *recommended* that the Mission consider it favorable, especially if the second phase of APPP is planned.

3.2. Road Maintenance

The strategy of DFR is to have rehabilitation and improvement work performed through contracting. Reshaping (recurrent work) will be done both through contracting and force account. The DFR plans to expand its fleet of graders with the assistance of the World Bank to develop certain minimum capability for reshaping work. Routine maintenance (cleaning ditches and culverts, filling potholes, etc.) is almost entirely expected from community participation. The GOG has established sub-committees at village level, central committees and district committees of government officials and prominent citizens to organize and oversee the routine maintenance work. The work is performed by community members under the guidance of DFR foremen.

DFR has six (6) road maintenance units, called Spot Improvement and Maintenance (SIAM) Units developed with the World Bank funds. Three (3) units have been in operation since 1987.; the other three (3) are not operation yet. Each unit has three trucks, four tractors with trolleys, two vibratory rollers and some smaller equipment along with plenty of hand tools. These units are used for recurrent maintenance. Four (4) SIAM Units, at a cost of $1.74 million from the second tranche of APPP, are being built. Three (3) more units are planned from the third tranche. DFR is in the process of evaluating the cost effectiveness and reliability of the operating units.

95

Because of lack of proper maintenance (routine, recurrent and periodic) in the past, the whole road network deteriorated. Realistically, complete routine maintenance of the national road network from voluntary labor is not likely. The GOG should, therefore, be ready to provide funds for rehabilitated roads to protect the investment if they are not maintained by the community.

4.0 Inspection of Selected Feeder Roads

The Evaluation Team visited 10 feeder roads in four regions (3 in Volta, 2 in Ashanti, 3 in Brong-Ahafo and 2 in Northern Region). Seven roads were already rehabilitated; the remaining 3 roads were under construction. We talked to a number of the officials of the Department of Feeder Roads (DFR) and the construction contractors to obtain information about the construction activities and offer the following comments:

(a) The senior officers of the DFR are enthusiastic, hardworking and upbeat. The supervisory personnel in the field are also doing a good job. However, due to rapid expansion of the DFR, the mid-level engineers do not have adequate experience and seasoning. Training needs are recommended elsewhere in the report.

(b) The quality of work was generally good.

(c) The DFR should consider construction of fords (also called causeways and radiers), instead of regular culverts, in areas like Northern Region, where the topography is relatively flat and the flood discharge is large.

(d) Provide frequent road bars on steep roads to prevent erosion of road surfacing. The technical considerations were discussed with Mr. Brown Oppong of the DFR.

(e) Do not build culverts on road-fill. One such structure was observed on the Lobgo-Toto Road in Volta Region in a reach where the road section was half in-cutting and half in-filling.

(f) The sideslope of some road ditches was very steep. This is unsafe for passing vehicles. The road-side slope of a ditch should not be steeper than 3:1.

(g) Use of Clegg Impact Tester is recommended for compaction control. This is a portable, easy-to-use device and performs tests very quickly. The subject was discussed with Mr. Oppong of the DFR.

96

5.0 Impact of Rehabilitating the Feeder Roads

We talked to a number of villagers, the ultimate beneficiaries, to get an idea about the immediate impact of improving the roads. Information gathered from the interviews with the villagers is given in attachment C. The following are some of the observations:

(a) The villagers were happy about the road improvements and expect an improvement in the quality of their life.

(b) The vehicular traffic has significantly increased and the cost of transportation has decreased in real terms.

(c) Many villagers found employment on road work.

(d) Some farmers have already started growing more types of crops and vegetables and also started cultivating more area because improved roads provide them opportunity to market their produce--without headloading in many cases.

(e) With the increase in business activity, the income of the villagers has gone up.

The "Socio-Economic Impact Study Of Feeder Roads Improvement Using Labor-Based Technology", August 1990 sponsored by the ILO shows that the immediate impact of rehabilitating the roads is positive. We concur with their recommendation that further study should be conducted to systematically assess the short- and long-term impact of the rehabilitated roads for future guidance. The summary of conclusions and recommendations of the above study is given in Attachment B for ready reference.

Baseline Data, a study for APPP sponsored by the USAID/Ghana was completed in October 1990. Though the scope of work of this study was different than that for the study sponsored by the ILO, some sort of coordination with the earlier study would have made both studies more useful.

The two impact assessment studies, stated above, cover different geographical areas and follow different methodologies. It is, therefore, *recommended* that a new multi-year study of feeder roads impacts be funded. It should utilize the information of the two studies to the extent possible. The contractor should be required to first get the methodology approved by the USAID before proceeding further with the study.

'97

6.0 Observations and Recommendations

6.1. Payment Procedures

The construction contracts state that the interim payments will be made in 60 days. This is an unduly long delay to keep the work moving on construction projects, especially for smaller contractors. It was reported that the interim payment bills pass through all levels of the DFR--right up to the Director. The payments also need the approval of the Regional Secretary and the Secretary for Roads and Highways in Accra. The World Bank report (Attachment A) also identifies this problem as a serious constraint in construction work.

It is *recommended* that the regional engineers be authorized to make interim payments within 2 weeks if there are no variations. If needed, the regional engineer may be required to inform all the concerned officials the name of contract and contractor, and the amount of payment on the day of the payment. This information would allow any official wishing to contact the regional engineer or visit the site itself to check the details of the payment.

6.2. Sustainability of Maintenance

The road fund is financed by fuel taxes. Cashflows into the Fund are historically erratic. Periodically funds are diverted to some other pressing needs. It is important that once the roads are rehabilitated by donors or otherwise, the GOG assures itself that they will be properly maintained subsequently.

It is *recommended* that a line item for road maintenance (for roads not covered by voluntary participation work) be provided in the DFR budget with a high priority.

6.3. Coordination with Other GOG Agencies

During a general meeting in Ho, Volta Region on November 14, 1990, it was reported by the Department of Crop Services that progress reports on the feeder roads work did not reach them. Apparently, the information was sent to the Office of the Regional Secretary, as it should have been, but it did not reach to different Departments.

In a meeting with the Department Secretary, Agriculture in Tamale, Northern Regional it was reported that one rehabilitated road cannot be effectively used because the trunk road it merges with is not properly maintained. It is *recommended* that the DFR take a lead and go an extra mile to improve coordination among the sister agencies.

98

6.4. Donor Coordination

The World Bank is considering financing the National Feeder Roads Rehabilitation and Maintenance Program (NFRRMP) to rehabilitate 10,000 to 12,000 km in 10 years. The first of the 3 phases is expected to be operational in mid-1992. It will rehabilitate 3,00 km at a cost of $40.0 million in a period of 4 years.

The following rehabilitate projects with donor assistance are in progress:

Cocoa Rehabilitation Project, financed by the World Bank	3,000 km
First Transportation Project, financed by the World Bank	600 km
Second Transportation Project, financed by the World Bank	150 km
Integrated Development Project, financed by IFAD	160 km

6.5. Staff Development and Training

There is a serious shortage of senior engineers with experience and training, both in technical and managerial areas. Similarly, there is an acute shortage of trained technicians. The Evaluation Team considers training of engineers and technicians of the DFR very important. It is also important that we develop some training capability within the Engineering School at Kumasi for the training of future engineers of DFR.

Staff Training:

1. One senior engineer from the DFR and one faculty member from the Civil Engineering Department, School of Engineering, Kumasi should be sent to attend the Fifth International Conference on Low-Volume Roads, May 19-23, 1991 at Raleigh, North Carolina, USA. It would be worthwhile to combine a short management training for the DFR Engineer also in this trip. The estimated cost of travel and per diem for two persons is $12,000.

2. Four engineers/technicians from the DFR should be sent to Kisi, Kenya for the advanced labor-based technology, a 7-week course sponsored by the ILO. The estimated cost of travel and per diem is $30,000.

In-Country Capability Building:

1. Currently, training in labor-based technology is provided to the technical staff of the DFR and some selected contractors at Koforidua, Volta Region with the technical assistance from ILO and PAMSCAD funds. Availability of funds to continue this training program in years to come is uncertain. However, this training is vital for promoting labor-based construction which generates local employment and saves precious foreign exchange needed for the purchase of machines and spare parts.

It is *recommended* that consideration should be given to institutionalize this training program. After the proposal is approved in principle, the DFR should be requested to prepare a comprehensive proposal for further consideration.

2. It is *proposed* that the School of Engineering, Kumasi organize a 2-week course on low-volume roads for 20 engineers of the DFR in the later part of 1991. After the approval of the Mission, REDSO engineering should prepare scope of work.

Technical Assistance

1. It is *recommended* that technical assistance (6 weeks) in low-volume roads be provided from the USDA-Forest Service in the later part of 1991. The roads specialist will visit some of the project roads and advise the DFR engineers in his specialty area. Technical assistance be coordinated to coincide with the 2-week course at the Kumasi School of Engineering. The cost of salary, travel and per diem is estimated at $20,000.

6.6 Performance of the Department of Feeder Roads

Table 1 shows the length of feeder roads classified according to surface type and driving condition. It may be seen that more than 60% of roads are in poor condition--meaning that one can travel only in a 4-wheel drive vehicle.

The DFR received $2.00 million in the first tranche. As of November 15, 1990, they have committed the full amount. In the second tranche, they received $3.89 million for rehabilitation work and $1.74 million for routine maintenance and for the purpose of equipment for road maintenance centers. The DFR is reported to have committed all the funds. Tables 2 and 3 show the targets and achievements, as of November 15, 1990, for rehabilitation work.

Though the expenditure incurred in the first and second tranches is as programmed, the physical achievements remain far below their targets. It is so because the roads being rehabilitated were in poor condition for most of the lengths and they needed a lot of work to put them into good condition. The unit cost for various rehabilitation and maintenance activities at 1990 prices, including cross drainage structures, are estimated as follows:

Rural roads rehabilitation	$17,000 per km
Periodic resurfacing	$3,000 per km/every 5 yrs.
Recurrent regrading	$150 per km per year
Routine maintenance	$150 per km per year

(These prices are from "Rural Roads Sub-Sector Strategy" Report prepared by the DFR and issued on November 1, 1990)

100

REDSO engineers made 3 field inspections and reported that the work was of good quality and was progressing satisfactorily. The team also agreed.

The team strongly feels that rehabilitation of rural roads is the single most important element in meeting the objectives of the APPP. It, therefore *recommends* that rehabilitation of feeder roads should be given maximum emphasis in the second phase of the project.

6.7 Monitoring and Evaluation (M&E)

To assure satisfactory progress of rehabilitation and maintenance of roads, the DFR exercises routine monitoring. The M&E plan of the project indicates quarterly visits by a REDSO engineer. Two monitoring trips by Win Collins in April 1989 and November 1989 and one by Tej Mathur in April 1990 were performed. The monitoring reports show that the DFR is managing the feeder roads rehabilitation work satisfactorily. The team feels that a quarterly monitoring visit by a REDSO engineer is adequate. Preferably, it should coincide with the World Bank engineer's trip for better coordination.

101

Table 1

Classification of Roads
1990 Road Length by Surface and Conditions Types

	Gravel	Earth	Bituman	Total (%)
Good	2,406.4	725.5	45	3,177 (14.5)
Fair	3,705.3	1,462.6	102	5,270 (24.1)
Poor	1,939.8	11,372.3	144	13,456 (61.4)
TOTAL	8,051.5	13,560.4	291	21,903

The road condition is classified according to driving conditions as shown below:

Good: 2-wheel dr. vehicle ok year-round.
Fair: 4-wheel dr. vehicle needed in rainy season.
Poor: 4-wheel dr. vehicle needed year-round.

102

Table 2

Department of Feeder Roads

APPP/USAID First Tranche 1989
Targets vs. Funding Levels and Accomplishment

Activity	Target (KM/No.)	Length Awarded (KM)	Tender Sum (Cedis)	Length Completed (KM)	Expenditures (Cedis)
Grading/ Reshaping	700	192.75	118,959,217.00	176.5	78,295,897.34
Regravelling	155	59.6	163,304,963.00	59.6	120,416,356.80
Spot Improvement	35	81.3	319,320,598.00	61.4	216,703,206.20
Drainage (No.)	100	15 No.	31,153,652.00	14	25,216,392.00
			633,338,430.00 ($1.86 million)		440,631,762.34 ($1.3 million)

Note: Exchange rate (assumed) is $1.00 = ¢340.

Table 3

Department of Feeder Roads

APPP/USAID First Tranche 1990
Targets vs. Funding Levels and Accomplishment

Activity	Target (KM/No.)	Length Awarded (KM)	Tender Sum (Cedis)	Length Completed (KM)	Expenditures (Cedis)
Grading/ Reshaping	700	105.65	94,129,317.12	34.2	25,625,000.00
Regravelling	155	73.30	277,306,710.42	42.01	52,985,000.00
Spot Improvement	35	211.15	785,501,495.80	142.09	445,572,000.00
Drainage (No.)	100	19 No.			1,885,000.00
			1,156,936,523.34 ($3.40 million)		526,067,000.00 ($1.55 million)

Note: Exchange rate (assumed) is $1.00 = ¢340.

104

Table 4

Department of Feeder Roads

Status Report on USAID/APPP Projects as of 15 November 1990

Region	Total Length Awarded (KM)	Total Tender Price, ¢ Million	Total Length Completed (KM)	Total Amount Spent, ¢ Million	Remarks
Brong Ahafo	156	481.66	116	287.57	100 km awarded in 1990 in progress
Volta	215	463.61	123	132.16	60.25 km awarded in 1990 in progress
Northern	80	194.36	42	143.70	64.25 km awarded in 1990 in progress
Upper West	129	193.75	127	123.63	44 km awarded in 1990 in progress
Upper East	63	173.7	59	124.05	40.75 km awarded in 1990 in progress
Ashanti	56	177.00	43	127.08	56.20 km awarded in 1990 in progress
Eastern	28	104.66	8	21.56	17.90 km awarded in 1990 in progress
TOTAL	727	1,790.25	518	959.75	Most of the 1989 projects have been completed.

D 13

Republic of Ghana

ATTACHMENT A

Department of Feeder Roads, Ministry of Roads and Highways

The World Bank

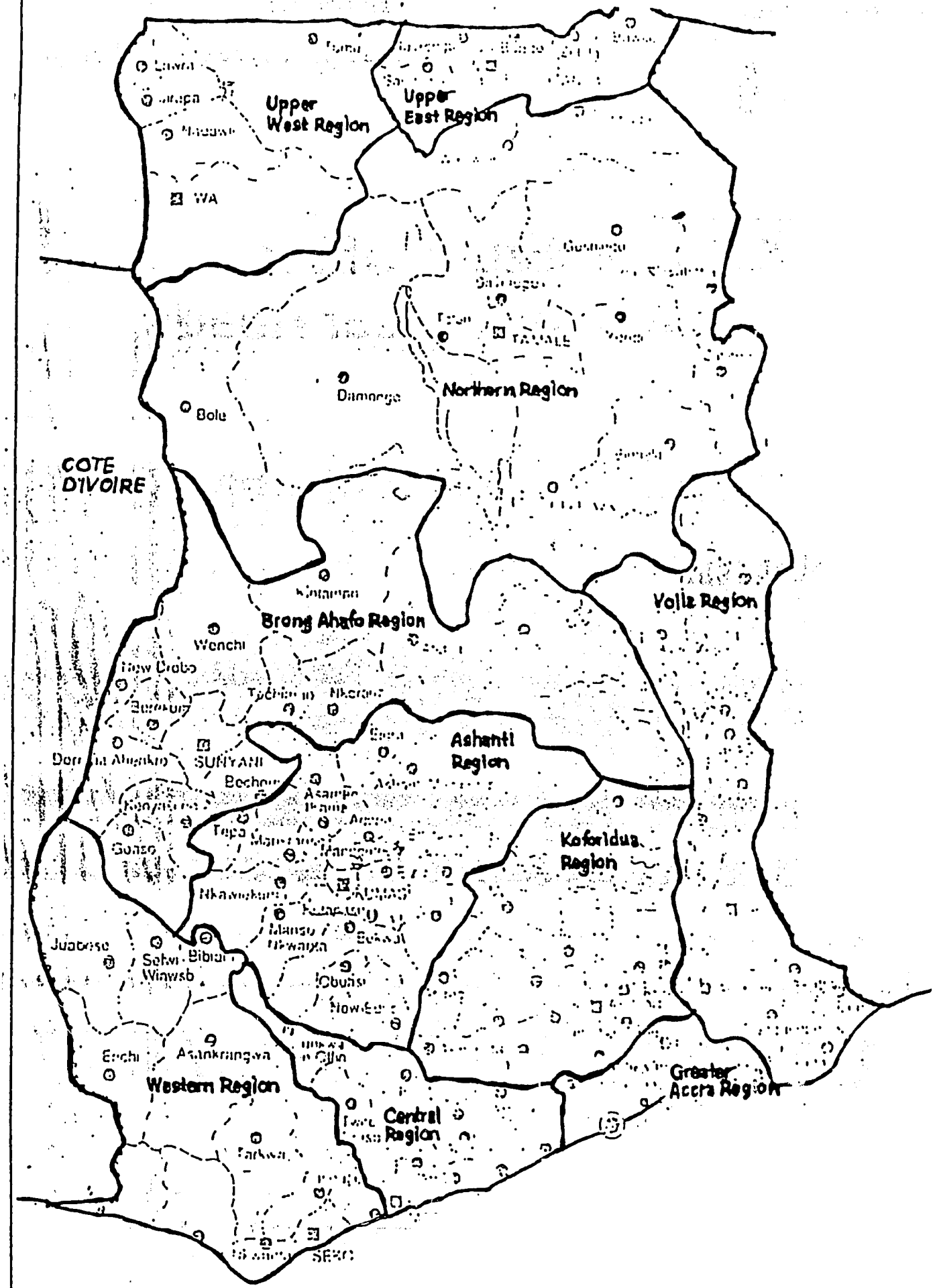
Institutional Study of the Department of Feeder Roads

Final Report

October 1990

COWIconsult

Consulting Engineers and Planners AS



Reference:

National Capital — National Boundary

Regional Capital — Regional Boundary

Scale 1:3,000,000

TABLE OF CONTENTS

EXECUTIVE SUMMARY

CHAPTER 1 - BACKGROUND ON DFR ORGANISATION

A- CURRENT SITUATION 1
Institutional Context 1
Policy Context 1
DFR Headquarters Structure 1
DFR Regional Organisation 1
Community Involvement 1
Planning 1
B PROBLEMS AND CHALLENGES 1
Staffing Levels 18
Pay and Conditions 18
Flexibility 20
Planning For Maintenance 20
Prospects For Voluntary Participation 20
Headquarters Organisation 24
Regional Organisational Structure 24
26

CHAPTER 2 - RECOMMENDATIONS FOR DFR ORGANISATION

A DFR's INSTITUTIONAL STATUS 28
B HEADQUARTERS SETUP 28
Planning and Contract Administration Division 28
Development Division 28
Administration Division 31
C REGIONAL SETUP 31
Planning 32
Donor Support Strategy 32
Siam Units 32
Community Routine Maintenance 34
D PLANNING AND COORDINATION 36
Inventories 37
Coordination 37
37

CHAPTER 3 - ARRANGEMENTS FOR ENGINEERING DESIGN AND EXECUTION OF WORKS

A PROCEDURES FOR ENGINEERING DESIGN AND WORKS SUPERVISION 39
Design 39
Tendering 39
Construction Supervision 39
Issues 39
Conclusion 40
42

108

EXECUTIVE SUMMARY

BACKGROUND ON DEPARTMENT OF FEEDER ROADS ORGANISATION

1. Ghana has an extensive rural road network, an estimated 21,000 kilometres. About 70% of this network is considered to be in a poor or very poor condition due to long-term maintenance neglect.

2. The purpose of Institutional Study is to propose ways of strengthening the current institutional structure and management systems to ensure that the rural road network is properly rehabilitated and maintained and in order to face the challenge of the forthcoming initiative, the National Feeder Roads Rehabilitation and Maintenance Programme (NFRRMP).

3. Responsibility for the planning, construction and maintenance of rural roads lies with the Department of Feeder Roads (DFR), one of the three constituent agencies of the Ministry of Roads and Highways (MRH).

4. The current institutional arrangements allow for DFR representation at various levels - headquarters, region, road area and political district. A hierarchical structure of committees associated with the political districts facilitates community participation in planning and involvement in voluntary road maintenance.

5. There are both strengths and weaknesses in the current institutional arrangements which will need, respectively, to be exploited and overcome if operational efficiency is to be improved, particularly in the light of added responsibilities. Chief among these are the lack of trained manpower at middle management level; unfavourable pay and conditions compared with the private sector and with DFR'S sister agency, the Ghana Highway Authority (GHA); the lack of a comprehensive planning approach which is needed to co-ordinate future rehabilitation with maintenance planning; the scope offered for increased voluntary participation in routine maintenance; and the lack of full procurement capacity.

RECOMMENDATIONS ON DEPARTMENT OF FEEDER ROADS ORGANISATION

6. While there is no case for any fundamental change in the structure of responsibility for feeder roads, it is considered that, with its growing responsibilities, DFR needs more scope for flexibility in its operations. It is recommended, therefore, that DFR achieves the status of a subvented incorporated authority.

7. A re-orientation of functions within DFR is proposed. At headquarters level, this implies the creation of a new division, the Planning and Contract Administration Division incorporating the existing Planning, Quantity Survey and Accounts Sections.

8. The benefits offered by this proposed functional re-allocation are: first, it will facilitate the development of a proper planning process; second, it combines the three disciplines which have the most important linkages and inter-relationships throughout the project cycle, that is, planning, quantity surveying and accounting; thirdly, it will act as a common resource and service agency for other divisions, notably the Development and Maintenance Divisions.

8 A Project Coordinator should be appointed in the Development Division to coordinate the implementation of the NFRRMP. Close liaison with the proposed Planning and Contract Administration would be essential.

9. Responsibilities should continue to be allocated flexibly between the Maintenance and Development Divisions.

10. The responsibilities of the Administration Division would be restricted to personnel and training, and general administration.

11. At the regional level, the role of planning also needs to be promoted. This will require the establishment of a small Planning and Programming Unit to support the regional engineers in carrying out their planning responsibilities.

12. It is essential that a strategy for future donor support is developed. This, in turn, will require a reappraisal of NFRRMP activity to ensure that the pace of rehabilitation does not exceed the capacity to maintain. The creation of a sustainable maintenance capacity must be seen as an essential precursor of rehabilitation operations. Donor programmes must focus on supporting the development of regional institutional capacity.

13. A priority listing for the introduction of the Spot Improvement and Area Maintenance (SIAM) Units for 1990-1992 is presented. A phased approach to their introduction may need to be considered to avoid overloading the regional organisations.

14. The creation of Road Area offices should proceed in tandem with the introduction of the SIAM units. Furthermore, funds for tools for community based routine maintenance should be programmed in such a way as to allow the setting up of arrangements at the political district level to proceed as soon as SIAM units are operative.

15. With regard to expanding community routine maintenance, additional political districts are proposed for 1990-91 over tho already committed. However, this will require an improved level performance on the part of DFR, the current rate of adoption political districts into the community routine maintenance program being somewhat slow.

16. There appear to be no administrative, technical nor econom advantages in devolving funding or operational responsibilities f the community routine maintenance programme, to the politic districts. It is recommended, therefore, that current arrangemen remain as they are.

17. An important component of the development of a proper planni process is an improved road inventory. One of the initial, priori tasks of the proposed Planning and Contract Administration Divisi will be to devise an inventory format to provide appropria information for regional organisations to plan for bo rehabilitation and maintenance.

18. DFR's record on involving the community in feeder roads planning a operations, through the establishment of, and consultation with, hierarchy of committees at the district level, has been excellen The network of committees will now need to be expanded within t proposed priority regions in conjunction with the spread of the SI units and the establishment of the road area offices.

19. At the national and sectoral levels, channels of communicati between agencies which have a bearing on feeder road planning shou be reinforced. It is to be hoped that newly-formed Nation Planning Development Commission will undertake a strategic planni role.

20. The Planning Committee established within MRH offers the potenti to improve planning and co-ordination at the transport sector level. It is recommended that this Committee be revived, that it chaired by the Chief Technical Director of the Ministry and that include representatives from all the road agencies and alli bodies, such as the Ministry of Agriculture and the Department Town and Country Planning.

ARRANGEMENTS FOR ENGINEERING DESIGN AND EXECUTION OF WORKS

21. In future, DFR should undertake all labour based design a construction supervision. Consultants should carry out 90% equipment base design. It is appropriate for DFR to equip itself

nationally to cater for, at peak, approximately 75% of the average total annual anticipated construction supervision workload. All construction over and above this should be carried out by consultants.

23. It is unlikely that there will be significant interest by foreign contractors in implementing rehabilitation schemes. There appears to be sufficient availability of both capital base and labour base local contractors for rehabilitation work on the NFRRMP and other projects. Arrangements for equipping labour base contractors, which is the responsibility of the Bank of Housing and Construction, need to be improved.

24. Periodic maintenance will continue to be carried out by private contractors. There appears to be sufficient capacity within DFR through its programme of equipping MOREMAT units to undertake recurrent maintenance. It is anticipated that most of the routine maintenance work will be implemented through voluntary community labour, but there will be scope for the involvement of labour base contractors

25. To ensure that the success of labour base operations is sustained, it is recommended that technical assistance support arrangements on existing lines are continued - by current agencies (UNDP and ILO) if possible.

26. Refresher courses for labour based contractors need to be run by DFR on a regular basis.

27. There are few areas in the country which are not suitable for labour base contractors. Therefore, to ensure that a considerable proportion of NFRRMP is implemented using labour base methods, training of new contractors should continue to the end of 1996.

ARRANGEMENTS FOR COSTING AND PAYMENT OF WORKS

28. The proposed new Planning and Contract Management Division will be responsible for developing a monitoring and reporting system which incorporates fully-fledged cost accounting procedures.

29. Cost accounting responsibilities will be devolved down to the units undertaking implementation, with reporting up to the Responsibility Centre, the regional office. Co-ordination of reports will be one of the tasks of the proposed regional Planning and Programming Section, which will be responsible for refining the information for use at the various levels of the administrative hierarchy.

30. The payments system should be streamlined and decentralised: this would involve transferring some approval and payment responsibilities to the regions. Regions will only receive such delegations after the Director of DFR is satisfied there is sufficient local capacity to carry out such tasks.

31. Given current manpower constraints, the allocation of internal auditors to each region is impracticable: further thought, therefore, needs to be given by DFR to the most appropriate arrangements for involving internal audit staff at the regional level.

32. Other checks and balances, such as limits on a region's delegation to approve interim payments, are recommended.

33. To counteract the problem of uneven cash flows, a revolving fund of approximately 200 million cedis should be established at DFR headquarters. Donor sourcing of the initial capital for the fund should be sought.

ARRANGEMENTS FOR STAFFING AND STAFF TRAINING

34. It is estimated that the ultimate field establishment of professionally qualified engineers required at 1996 at the regional level will be 60. During the interim, there will be a serious shortfall of DFR staff: measures to alleviate this situation, such as the more frequent use of technician engineers in place of professional engineers, additional technical assistance, reducing the pace of NFRRMP implementation etc. are put forward.

35. There is an urgent need to fill the vacancies in the Survey and Design Section and Quantity Survey Section at headquarters.

36. While the number of civil engineers graduating each is considered sufficient, it is likely that DFR will have to compete harder to attract graduates into its employ.

37. To ensure skilled professional staff are attracted and retained, a housing incentive scheme is proposed, with funding to be sought through donor sources.

38. Just as it is essential to provide career opportunities for the major professional staff in DFR, so must greater scope for promotion be given to technician engineers and quantity surveyors.

39. While the significance of food aid as a form of subsidy to DFR staff is acknowledged, it should not be seen as an entitlement or a long-term arrangement and should be discontinued as soon as real wages have recovered from borderline subsistence levels.

40. The scope of training at Koforidua should be extended to cater for broader initiatives. It is proposed, therefore, that a project be designed and costed on the scale of investment in building and plant, and staffing necessary to develop Koforidua as a full-time training institute.

41. The DFR in-service training courses should be re-orientated to incorporate modules on management, planning, financial and accounting procedures, reporting and monitoring. Computer skills will also need to be developed.

42. A target of one-third of all professional staff in DFR to have received postgraduate training should be aimed for.

43. Consideration should be given to upgrading the School of Engineering at Kumasi so that its students can receive training appropriate for employment in DFR.

ATTACHMENT B
INTERVIEW WITH VILLAGERS TO ASSESS
IMPACT OF REHABILITATING FEEDER ROADS

1. Logba-Tota Road (Volta Region)

Length: 6.9 KM, Width: 6.0M, Surface: Gravel
Date of Completion: 60% completion
Date of Interview: 11/16/90
Person Interviewed: Chief of Logbo-Tota Village

- Earlier village was inaccessible. Now accessible by 4WD vehicles.
- People are very happy about the rehabilitation/improvement of the road.
- Area of cultivation has increased.
- No. of tourists to see a waterfall (about 2 km on foot from the village) has gone up.

2. Wusuta Vakpo - Tsoxare Road (Volta region).

Length: 18.7 KM, Width: 6.0 M, Surface: Gravel
Date of Completion: 12/89
Date of Interview: 11/16/90
Persons interviewed: A group of farmers and fishermen.

- One year ago the village was not accessible.
Between 3:00 to 4:00 PM, we saw 3 trucks, 1 bus and 5-6 taxis passing by - a normal day. Estimated no. of vehicles/day 50.
- Charcoal shipment to Accra has been going up. Some coming from accross the lake before being trucked out.
- Fishing has gone up. More fishermen have moved to the village because of access to Accra market.
- Social interaction has increased.

3. Anum-Peki-Dezake Road (Volta Region)

Length: 6.6 KM, Width: 7.3 M, Surface: Gravel
Date of Completion: 1/90
Date of interview: 11/16/90
Persons interviewed: Two persons in Annum Village.

Because of this road, the distance between Anum and Hohoe, the district headquarters has been reduced by about 50% resulting in lower transportation cost.

Access to some smaller communities and farms along the road improved.

4. Techiman-Mesidan-Buoyem Road (Brong-Ahafo Region)

Length: 11.3 KM, Width: 7.32 M, Surface: Gravel
Date of Completion: 1989
Date of interview: 11/20/90
Person interviewed: A farmer

Activities/Items	Before Rehab.	After Rehab.
No. of vehicles/day coming to the village	1	10
Mode of transportation	Tractor-Trolly and 10% by headloading.	Mostly trucks
Cultivation by his family	6 acres	10 acres
Farm production		
- Tubers	400	1000
- Cassava (Trailer full)	1	4
- Plantain (Trailer full)	1	4
His net income per year	¢40,000	¢60,000
Rent per trip	Tractor-tra ¢20,000	Truck ¢10,000
Passenger fare	¢50	¢100 because of inflation and jumps in gas price.
Shopping (kerosene, fish, beef, soap, etc.)	Had to go Techiman	Now merchants bring to the village.

Second interview with another farmer in Buoyem village.

No. of shops in Buoyam	6	8
Prices: Tinned Fish	¢150	¢200
Milk	¢150	¢150
No. of vehicles stationed in Buoyam		
Trucks	0	4
Taxi	0	6
- Vegetable production by his family	1/4 acre	3 acres
- No. of crates shipped	20	200
- His net income per year	¢100,000	¢600,000

116

5. Asekye-Busunya Road (Brong Ahafo Region)

Length: 12.5 KM, Width: 7.32 M, Surface: Gravel
Date of completion: 50% completed
Date of interview: 11/20/90
Person interviewed: A farmer

Activities/Items	Before Rehab.	After Rehab.
No. of trucks/day	0	10
No. of taxi/day	0	6
Selling price of maize	¢3,000/bag	¢10,000 now (11/90) ¢20,000 in next March

Shipments from the village: to Kumasi, Accra and Techiman: Yams, maize, peanut, Tomato, charcoal, cassava. Earlier smaller quantities by headloading; now large quantities by trucks.

Shipments to the village: Kerosene, clothes, fish. Earlier by headloading only. Now by trucks.

Size of interviewee's farm: 20 acres.

Because of low rains, he expects to sell only 18 bags of maize this year. Last year he sold 38 bags.

He plans to grow tomato also.

Krabonso-Kintampo Road (Brong-Ahafo Region)

Length: 13.0 KM, Width: 732M, Surface: Gravel
Date of Completion: 8/89
Date of interview: 11/21/90
Person interviewed: Some farmers.

Shipments to town: Maize, plantain, charcoal, cassava, yam, tomato.

Shipment from town: Fish, kerosene

Village population: 3,000

No waiting for transport now.

117

Activities/Items		Before Rehab.	After Rehab.
Vehicle/day	Tractors	3	5
	Trucks	0	10
	Taxis & mini bus	0	4 & 6
Transportation cost of a bag of maize.		¢200	¢200
Size of family farm		2	8
No. of shops		2	10
No. of bars		3	5
Tomato farmers		0	165 families out 300

7. Jimile-Palguri Road (Northern Region)

Length: 29.45KM, Width: 7.32M, Surface: Gravel
Date of completion: In progress, 70% complete
Date of interview: 11/21/90
Persons interviewed: Contractor and a farmer from Trigu village.

- At present only contractors' vehicles are on road. A few traders' vehicles have started coming to the village now.

- People expect this road to be a service road for salage (ancient market for slaves).

8. Tamale-Bamrim-Daborshie Road (Northern Region)

Length: 16.0, Width: 6.0M, Surface: Gravel
Date of Completion: 7/90
Date of interview: 11/22/90
Persons interviewed: Some farmers from Daborshie village.

- Produce sent out: Rice, maize, millet, cassava, peanut, sheanuts, cowpeas. No change in items due to road rehabilitation.

- Earlier some men temporarily lived in Tamale to sell farm produce. Now the families stay together at the village.

- Cultivated area has been increased by a few families upto 3 times.

- Family income has been rising significantly. In a few cases up to 3 times.

Activities/Items	Before Rehab.	After Rehab.
Vehicles day	Only headloading	
Trolly-Tractor	0	10
Trucks	0	10
Taxis	0	5
Harvesting machine	0	At least one
No. of schools	0	One with one teacher
No. of bicycles	Just a few.	5 times more now.

ANNEX E

Assessment of Agricultural Extension Activities

Prepared by
Sanath K. Reddy
REDSO/WCA

1.0 APPP Strategy and Rationale for Supporting Extension Activities

At the sectoral level APPP was designed to focus on measures to improve food crop productivity and thus contribute to the creation of productive employment in Ghana's private sector. APPP strategy was "to promote increased food production by increasing farmer efficiency and productivity through the application of effective technologies, and the reduction of relevant institutional deficiencies and infrastructure constraints" (PAAD, p.23). This strategy resulted in selective support to policies and activities that deal with major constraints. These were: privatization of fertilizer imports and distribution, revitalization of seed industry with increased private sector involvement, strengthening of extension service rehabilitation of rural feeder roads and support to policy studies to increase knowledge about the agricultural sector and the causes of low productivity.

APPP investments in the above activities were to help increase productivity by:

(1) increasing the flow of knowledge to farmers about improved technologies, including fertilizers and improved seed use through improvement of MOA's agricultural extension service;

(2) increasing the supply and use of fertilizer through the privatization of fertilizer supply and distribution;

(3) increasing the supply and use of improved seeds through revitalization of the seed industry;

(4) alleviating infrastructure constraints to reduce farmer input and marketing costs through the improvement of rural infrastructure such as feeder roads.

Although fertilizers and improved seeds were considered as key ingredients for higher productivity, lack of farmers' awareness, knowledge and skills about the use of these inputs and the inability of extension service to reach farmers effectively to transfer technologies was a major problem. Among the important constraints faced by the extension service were insufficient trained extension staff and lack of mobility to reach sufficient numbers of farmers. GOG budgetary constraints precluded even a reasonable operating

119

cost support to the Extension Service for training the transportation. Almost all GOG resources that were available were required to pay the salaries. Low budgetary support to the Extension Service was due to "a pervasive budgetary squeeze that affected many other priority areas as well". Therefore, to increase the effectiveness of the extension service APPP provided resources to increase extension staff mobility, improve the technical skills of extension staff through increased training and to improve extension-research linkages.

a. Purchase of vehicles and operating costs
b. Purchase of field equipment
c. Training
d. Research - Extension Linkages

It is the opinion of the team that APPP investments in extension, a modest $3.7 million during year 1 and 2 of APPP, were justified in view of the existing constraints. The following activities have been financed under the APPP.

2.0 Inputs

Under the first and second tranche $14.551 million were provided to GOG of which $3.7 million (460,000,000) was allocated to the extension service, expenses were incurred on procurement and operating costs of vehicles, equipment and training.

Vehicle:[1]	Five Ton Truck (1) Pickups/4-WD (29) Motor Bicycles (350) Helmets (100) Bicycles (100)
Equipment:	Office Equipment Field equipment: 500 units (measuring tapes, balance rain coats, pocket calculators, haversacks, boots.) Agro-chemicals and seeds for demonstrations (300 demonstrations)
Training:	Training 45 participants

The amount to be provided to the extension services department under the 3rd tranche (disbursed by USAID to GOG in November 1990) is yet to be determined.

[1] Oral Communication

120

3.0 Comment on PAAD Target for Extension

PAAD prescribes a target of 15 training sessions per agent pr year for each of the three years (1989, 1990, 1991) compared with 8 training sessions for the base year (1988). Similarly farmers contacted per agent is prescribed at 770, 960 and 1150 for each of the three years respectively, compared with 350 for the base year 1983. These targets appear to be irrational and seem to promote a tendency in the extension service to blindly reach the prescribed targets without any consideration of efficiency, ability and impact. Under the circumstances existing in Ghana, no more than six to eight training sessions per year appear to be reasonable. Each training session held at the district level once every 6 to 8 weeks would consume enormous amounts of time and resources of regional level subject matter specialists (SMSs) and other staff likely to be available under the proposed reorganization. To have expected the yet-to-be reorganized service to conduct 15 sessions per year during 1989-91 appears to have been ambitious, given the state of extension service in 1987-88 when the program was designed. So is the case with the number of farmers to be contacted per agent.

4.0 Proposed Investment in Agricultural Extension

GOG's proposed investments in extension related activities for the period 1991-1995 consist of the following (in millions, US$)

1.	National Extension Development Harmonization of extension services Research extension linkages Logistical and transportation facilities Staff Development ($5.2 million USAID up to 1991)	50
2.	Agricultural Extension in N. Ghana (GTZ)	1.92
3.	Crop demonstrations (yams, maize, pineapple)	0.39
4.	Rural livestock extension (poultry, pigs, small ruminants)	0.316
5.	Women Farmers Extension Service Food Production Processing, Preservation Storage marketing Home Management Nutrition, Health, Family planning Credit and income generating activities	1.1

121

6.	Integrated Development: Ashanti (UNDP, FAO until 1990)	
7.	Building and Logistics Project	1.9
8.	Training	
	Renovation of Agricultural colleges	2.56
	Training and manpower department	0.390
	TOTAL:	58.770[2]

5.0 Critique of Proposed Agricultural Extension Strategy

(Ref: Proposed Agricultural Extension Strategy Ghana, June 5, 1990)

A. Ghana has a long history of extension activities and programs. However, much of this activity in the 1970s and 1980s has been implemented through a number of donor supported programs and projects focusing on specific geographical regions, specific problems and issues, and demonstrating development strategies and approaches. Not withstanding success and achievements of the various programs and projects, this approach has led to fragmentation of extension service, promoted ad hocism, proliferation of independent and uncoordinated activities unsustainable without continuing donor support. More importantly these approaches have not contributed to the building of a national institution with strong credentials. Long term needs of a national institution capable of promoting and managing technology transfer, national budgetary support for sustained operations, recruitment and training of qualified staff with high commitment and morale have been neglected. Therefore, the proposal to reorganize and consolidate all the extensions activities under a national extension service is timely and needs to be supported by the donors and GOG. Such support should be of long term nature based on considerations and economic sustainability, managerial capability, extension methodology and approach appropriate to the Ghanaian rural conditions, and technology transfer needs for sustained increases in production, productivity and rural incomes.

B. The proposed strategy is weak in relation to a number of strategic considerations required for an effective extension service. A brief overview of these considerations is presented below.

---

[2] This is in addition to $13.30 million planned for investments in crop services to complement technology testing and development and for agricultural research and $97.3 million under CSIR, Universities, CRIG, MOA (excluding cocoa research $59.7).

-122-

(i) Structure, Organization and Size:

Proposed organization appears reasonable. The concept of "voluntary agents of change" (VEM) should be promoted as an approach and method rather than as an organizational element. Zonal Extension Officer (ZEO) should be the village level agent covering two or three villages and directly responsible for extension activities. Otherwise, Village Extension Motivator (VEM) concept will lead to part-time extension at the village level. VEM concept is a laudable objective tried but hardly worked in any country.

Ghana, in the foreseeable future, cannot afford an ideal extension service with small agent-farmer ratios (1:250), high mobility and infrastructural support of offices and housing. Therefore, it is but necessary to limit the size to the present size (approximately 2700) for the medium term of 10 years and provide the service with minimum required infrastructure, mobility, incentives and skills. Present staff could be rationally reallocated based on a number of possible approaches, most importantly exploiting the complementarities with the cocoa, tobacco, cotton and il palm extension services and family planning and health extension agencies. Extension in the medium term should concentrate and focus on key production areas in each region/district leaving the rest of the areas with a relatively light structure and activity. The medium term focus should be on improving the "performance effectiveness" and "economic and social" worth of the service.

Extension service should limit itself to agriculture, animal husbandry and home improvement activities. It appears too premature for a nascent extension service to include "Fisheries" a highly technical and complex activity. It should only collaborate with fisheries department to test technologies. Proposed to include fisheries should be reconsidered.

Regional and National level subject matter specialists (SMS) should include an agricultural economist to give extension/technology transfer activities an economic content. Again, in the medium term Deputy District Extension Officers (General and Women) seem unjustified and likely to be top heavy.

(ii) Method and Approach:

Modified T&V approach proposed in the strategy appears a reasonable choice. Benor model of "T&V system", notwithstanding its merits, is not sustainable over the long term. Its cost effectiveness and sustainability are highly questionable and countries like Ghana should not be enticed through low-interest long-term credits.

The modified T&V approach should be supplemented by group methods for extending the reach of the relatively small extension service. Group approach (especially in the case of small and women farmers) is highly suitable to the African rural communities. This approach will also enable the organization of credit and marketing activities around commodity interest groups and will have a multiplier effect on extension activities.

Demonstrations of various types (PTP, ETP, etc.) should be more strategically targeted focusing on social-economic impact and income generation, and should also serve as educational tools and feedback mechanisms on new technologies and practices.

(iii) Planning, Supervision, Monitoring and Impact Evaluation:

This is the guts of an effective extension system. Proposed strategy devotes almost no attention to these aspects. Present-day extension service is rather very weak in all the four areas. Extension translates ultimately into managing people and resources (both internal and external) to bear on a range of discrete but inter-related problems. Therefore, the key management functions (planning, coordination, supervision) and monitoring and assessment of effectiveness (of extension activities) and their impact (on peoples lives) should receive great emphasis. It is suggested that the proposed positions of Deputy Director (General Extension), and Deputy Director (Planning and Research) be redesignated as Deputy Director (Planning and Coordination) and Deputy Director (Monitoring and Evaluation) respectively.

C. Technologies, Messages, Linkages

There are very limited numbers of proven and cost effective technologies in Ghana given the wide range of food crops, diversity of farming and home management practices and problems. These technologies are limited to production of rice and maize using fertilizers and improved seeds in agriculture. In the area of home improvement, effective technologies/messages appear to be limited to smokeless stoves and improved nutrition and health (soft technologies with significant social-human resource implications).

Although a vast number of technologies/messages are promoted (Table 4) their real value to the farmers and homemakers is yet to be established. There is no evidence that these have been systematically tested, and evaluated or monitored for economic and social profitability and impact.

It is recommended that greater efforts be made for increased problem oriented collaboration with Crop Services and other relevant departments to identify, test/demonstrate and analyze a limited number of urgently required technologies. Until technology options are expanded, there appears little justification to expand the size and complexity of extension service.

Increasing the technological content of the message requires close linkages and collaboration with research and training institutions. The proposed consultative groups on research-extension linkages, if organized and directed properly, will serve a vital function. It is suggested that the need for a District level consultative group be re-examined. This appears to pose an unacceptable management load in terms of organizing over 100 district level meetings annually or bi-annually and synthesizing the deliberations. A regional level group well represented by farmer and women groups, seed producers, fertilizer and

chemical dealers and grain dealers supplemented by resource personnel from extension, research and training institutions, would seem more appropriate at least as a starting point.

6.0 Improved Agricultural Extension Programs: Constraints and Opportunities

6.1. Constraints

Notwithstanding the resource constraints (budgetary and human resources) faced by the extension service, there are three principal constraints which should receive priority attention before large scale investments are undertaken expanding the extension service operations.

(a) Organizational: these relate to the programming of extension activities, supervision or implementation and monitoring of impacts. Unless these three aspects are improved efficiency of extension service cannot be improved. Good planning of activities is necessary not only for cost management but also for effective supervision and monitoring of implementation and impact. For example, a number of monthly workshops are planned in each region (Table 3, Northern Region). It is questionable whether such large numbers of workshops for training extension workers are required. Similarly, in 1989 300 demonstrations were planned in two regions (Greater Accra and Eastern Regions) an average of 150 per region. One has to critically look at the relevance of training (king of topics, frequency, viability of message and availability of reliable information) and the need for excessive numbers of demonstrations. Similarly, supervision of front-line staff appeared to be weak and unreliable. Monitoring of impacts, so necessary to justify investments in extension and improve performance, hardly exists.[3] Therefore, if the extension service is to receive the necessary political and budgetary support, management of extension service must be improved and experience must be gained in managing the service, before large scale investments are made.

(b) Technology base: Technologies recommended to the farmers lack economic justification, except in the case of improved maize seed and application of fertilizer. In talking with the front line extension staff in the regions, it was noted that for a large majority of recommendations there was no information as to how much the farmer would gain in terms of increased yield, decreased labor or other advantages. Much of the so-called technology is either unavailable to the extension workers and farmers or is unusable.

Also there are a number of problems for which there are no technologies yet. Extension workers and researchers are not yet aware of the strategies farmers must use to

---

[3] APPP Financed Study: Comparative Assessment of Alternative Extension Programs Implementation in Ghana, May 1990, p. 67-73.

overcome constraints. For example: adjustments to increased cost of fertilizers. To improve the technological basis of extension, there appears to be a critical need to identify farmers' problems and prioritize them for research and development. In this context research extension linkages become an important issue. Research extension consultative groups proposed in the National Extension Strategy is an innovation that needs to be encouraged.

(c) Monitoring and Impact Evaluation: Monitoring and impact evaluation are not undertaken by the extension service at present. Reporting is done on the number of farmers reached by various means. This has started recently and is being analyzed. However, there appears to be an overemphasis on the number of farmers and women reached and the number of demonstrations conducted (Table 1 and 2). Given the continuing lack of mobility and the lack of effective supervision, the quality and reliability of their data appears somewhat doubtful. Extension service recognizes the need for monitoring-evaluating impacts. However, they have not been able to develop a program of impact evaluation as a part of its regular activities.

Sporadic reporting of impact-type of information found in the reports is not useful to judge the impact. (For example: "Production of food for home consumption registered 36455 women farmers which was a 5% increase over the last year"; "Food Preservation as an income generating activity registered 14026 women and there has been a two-fold increase over the target figure". (WFED, Mid-year Report, 1990)). What is the economic impact of the two activities on women farmers? Managers of Extension Service and officials in the Ministry of Agriculture cannot judge the effectiveness by relying only on the number of people reached.

6.2. Opportunities for an Improved Extension Program

(a) Improve the program planning process: Program planning process has been described in the APPP financed study "Comparative Assessment of Alternative Extension Programs Implemented in Ghana, May 1990". Extension planning originated at the district level and, compiled and reviewed at the regional level. All the regional programs are reviewed at the national level and a national extension program is drawn. The process appears to be in place. What is needed is an improvement of dynamics of the process with clear and measurable objectives to ensure that the program is relevant, has content and offers sound technologies for production and economic improvement. At present there is little or no effective involvement of the front line staff, representative of farmers and other interest groups at the lowest level of extension organization. Most of the front line staff have no written plans and activity schedules to guide them in implementing their extensions program. Officers below the district level in most cases had no copies of any annual extension program.

(b) Build into the programs, reporting and evaluation requirements: What is to be reported, how frequently, specific data sets and measurements required for impact evaluation. Initially impact assessment may be introduced in selected representative production systems (villages/districts) in each region. Once experience is gained and cost requirements are assessed, the system may be extended to larger areas.

(c) Include program and impact monitoring as a regular feature of the extension program. (APPP financed study: Comparative Assessment of Alternative Extension Programs Implementation in Ghana, May 1990, P. 67-73). Train all
levels of extension staff in program monitoring and impact assessment. An ongoing system of impact assessment in selected districts in each region should be set up.

(d) Rationalize the number of training topics and number of training sessions per year. Present practice of holding monthly training sessions in each region is not justified on any grounds. A quarterly training session of two to three full days can cover 8-10 topics and saves a lot of resources.

(e) Establish a system by which demonstrations and data gathered in impact assessments is used as a tool for training extension personnel and feedback to researchers. There is no evidence that this is being done at present.

(f) Screen and select messages which can either make economic impact or social impact (health, nutrition, management) and build an extension program around them (administration, PTPs etc.).

(g) Emphasize on-farm testing of technologies to ensure economic profitability adaptability to specific conditions in the region. Technical recommendations should be supplemented by information on increased yields, impact on labor requirements and economic profitability.

(h) District, Regional and Headquarters level staff should be given training in extension supervision.

We believe most of these improvements can be brought about with little or no capital expenditure and require only small expenditures of office supports etc. While a certain number of district and front line staff still need mobility, it is considered critical to bring about the changes suggested above.

7.0 Impact of Extension: An Assessment

Impact of extension resulting from resources provided under APPP, is to be assessed in terms of (a) increased mobility and contact with farmers; (b) general awareness of men and women farmers about certain improved technologies: improved seeds of maize, cowpea, rice, fertilizer use and application; post harvest storage using chemical treatment; crop management practices of planting in rows, importance of weeding; (c) increased training offered to various categories of extension personnel; and, (d) adoption of technologies and practices resulting in increased yields per hectare, overall trend in increased production of food grains (and products), increased income and improved home management practices (including health, nutrition practices, utilization of food products).

(a) Increased mobility and contact with farmers:

Extension Services Department, Ministry of Agriculture (ESD/MOA) has been provided with 44 vehicles, 350 motorbikes and 100 bicycles.[4] Of these Women Farmers Extension Division was allocated 7 vehicles and 70 motorcycles. This has significantly increased the mobility of the extension staff the frequency of contact with farmers. There is still a much greater demand for transportation among all levels of extension organization. Increased mobility has led to increased contact with farmers as reported by the PPMED (Tables 1 and 2).

(b) Awareness of improved technologies relating to farm and home:

Evaluation teams discussions with farmer groups indicated a high degree of awareness of improved technologies promoted by the extension agency, attesting to the increased contact with farmers. This increased awareness has been made possible due to a large effort devoted to training, demonstrations and field days.[5] Although the team has been able to observe a high degree of awareness of recommended technologies, it was almost impossible to assess the adoption rates of the technologies/practices promoted. Extension service is not yet reporting on the adoption of recommended practices. Even on the two most widely touted technologies--improved maize seed and fertilizer use--the information is sporadic and is not systematically collected, evaluated, analyzed and reported.

(c) Increased Training:

APPP-provided resources have enabled the Extension Services Department (MOA) to increase the number and range of training activities offered to various levels of

---

[4] Majority of the vehicles ordered have been delivered.

[5] Number of demonstrations conducted nationwide were 13,392 in 1988 (APPP Study, Comparative Assessment of Alternate Extension Program Implemented in Ghana, May 1990) and 6,807 in 1989 (only 5 regions reporting).

128

extensions personnel and farmers. The number of staff training sessions/workshops offered appears to have surpassed the targets proposed in the PAAD (15 per agent each year). A sample of training sessions/workshops planned for 1990 (Northern Regions) shown in Table 3. It was an essential input since 32 percent of the front line extension workers have had no formal training in agriculture while 48 percent of the front line extension workers had two years of training after high school; and only 20 percent of the total extension staff had training at degree level or more and are mostly in administrative positions.

(d) Adoption of improved technologies, impact on increased yields, production, income, quality of life, etc.:

A wide range of improved agricultural technologies and improved home and family management practices are being extended by the Extension Service (see table 4 for specific themes). Twelve (12) broad groups of technologies are promoted by the extensions service; seven (7) by the general extension service exclusively in agriculture; and five (5) by the WESD expand in agriculture, health-nutrition, home improvement, income generating activities and social organization of women. A major problem in assessing the impact on production and/or increased income is the lack of data. Extension service has not yet instituted a systematic process to collect data on adoption of recommended practices and their impact on income or quality of life (in the case of home improvement practices). It is doubtful whether the extension service has cost-benefit information on a majority of the practices recommended, with the exception of fertilizer use, maize seed and post harvest storage of maize. In the absence of such information, relevance of the message and its quality will be severely compromised. Therefore, it can be surmised that, despite the increased volume of activity and increased farmer contact (confirmed in the field trips) extension appears to be having less impact on increased production and income, except among those groups of farmers using fertilizer and improved maize.

A review of two high profile extension programs--URADEP (Upper Region Agricultural Development Project) and VORADEP (Volta Region Agricultural Development Project--URADEP indicated that "little routine evaluation has been done" and "studies on the impact of the project on the target population are relatively scarce. The overall impression is that very little evaluation on impact of extension has been done in Ghana" (APPP Study, Comparative Assessment of Extension Program in Ghana, May 1990).

8.0 Findings and Recommendations

8.1. Findings

1. APPP support to the Extension Services Department of the Ministry of Agriculture (MOA) has increased its mobility, outreach and frequency of contact with farmers and enabled the extension service to offer training more frequently.

189

2. As observed during the evaluation teams field visits, these inputs have increased farmer awareness and knowledge of agricultural technologies and home improvement practices.

3. Except for fertilizers and the use of improved maize seeds, the rate of adoption of other recommended practices and their impact on yield and income cannot be assessed. According to a recent survey of 1,200 farmers in five ecological zones, 18% of small farmers and 87% of medium to large farmers had adopted fertilizer use in 1989. About 30% of small farmers ever used seed and fertilizer. Extension service does not appear to be collecting and reporting systematically either the improved practice adoption data or its impact on production and yield. Therefore, effectiveness of extension cannot be assessed in production terms.

4. Not all of the front line extension workers have technical bulletins available to them even for the most frequently talked about extension recommendations.

5. Extension program planning supervision coordination, implementation monitoring and impact assessment appear to be the most neglected aspects of the extension operations. Monitoring capability is inadequate to satisfy the needs of the extension organization itself and APPP.

6. Front line extension staff need a system of incentives and rewards for better performers given the generally low salary and meager allowances.

7. Extension messages need economic content to be effective. A number of messages being extended do not appear to be based on cost-profitability considerations.

8. Certain activities carried out by the Womens' Extension Service appear to have direct positive benefits (organizing women for credit, group farming and other forms of assistance; health and nutrition intervention, improved home management practices). However, a number of other practices need economic content and appear to be ineffective.

9. Technological base of extension program is rather weak. Apart from improved maize, cowpea and rice seeds, fertilizers and use of Actelic and improved cribs for storage there are few well tested and proven technologies.

10. Extensions limited resources are spread thinly over a wide range of activities all over the country and thus there is an urgent need to focus and concentrate its resources on priority regions and products given resource and time constraints.

8.2. Recommendations

1. (a) Extension program planning and management (supervision and coordination) capabilities need to be significantly improved and its capability to monitor and evaluate the effectiveness and impact must be strengthened urgently. Proposed organizational structure of the extension service should incorporate planning, management and monitoring concepts.

   (b) It is recommended that USAID negotiate and reach an agreement with the Extension Service and PPMED on specific data and information on extension's impacts that should be monitored annually or bi-annually.

   (c) It is strongly recommended that the extension service seek full-time technical assistance from donor resources.

2. Proposal to expand the size of the extension service must be carefully reviewed keeping in view the sustainability of operating expenditures as well as present and future resource constraints. Improved coordination with cocoa, cotton and tobacco extension services and seed/fertilizer dealers will have a multiplier effect, reducing the need for expanding the size of the present extension service. A related recommendation is to concentrate and focus its activities on critical production problems and national needs.

3. Improved extension-research linkages to understand farmer strategies and test and develop technologies should be implemented.

4. A system of incentives and rewards to recognize better performing staff should be instituted and implemented.

5. Extension methodology should incorporate both the modified T&V approach and a group approach essential for organizing credit and marketing activities.

6. Extension service should moderate the "target oriented" approach to accomplishments and improve the quality of operations.

7. Extension Service (including Womens Extension Division) (a) should carefully review the range of technologies and practices recommended; (b) drop those which are lacking in economic or social content; and, (c) work with Crop Research Service and other concerned organizations to develop cost-benefit information on agricultural technologies and practices recommended to the farmers.

8. It is recommended that the Extension Service not purchase expensive high tech equipment, such as combined video-cinema van and shooting and editing package

131

(¢23.00 million or 68,000 pounds). Maintenance, operation and sustainability of such sensitive equipment under the rural road conditions existing in Ghana would pose enormous problems. One would have expected such decisions to be based on adverse experiences gained under URADEP (Radio Broadcasting, Institute of Field Communication and Training). It is a luxury GOG and the Department of Extension Services cannot afford when other pressing needs have yet to be met.

Table 1

Number of Demonstrations (D) and Number of Participants (F)

	1		2		3		4	
	#D	#F	#D	#F	#D	#F	#D	#F
Central	--	--	322	1711	411	1105		
Eastern	--	--	1563	3672	--	--	--	--
Ashanti	--	--	8	2403	24	4152	18	2563
Brong-Ahafo	--	--	709	3526	911	4405	281	13447
North	--	--	2079	15887	--	--	--	--
Western	--	--	--	--	69	141	416	3326
TOTAL	--	--	4677	27199	1415	9863	715	19336

Total Number of Demonstration = 6807
Total Number of Participants = 56398
Number per demonstration = 8.28

Table 2

Intensity of Extension Contact

	Training Sessions		FH Visits		Gen. Meeting		Groups Meeting	
	#	#P	#	#P	#	#P	#	#P
Western	2,445	63,557	13,703	130,106	565	44,329	301	4,240
Central	772	10,362	6,453	20,591	544	9,066	322	1,711
Ashanti	390	2,922	27,384	112,128	85	4,372	485	34,976
Brong-Ahafo	915	44,056	24,510	98,259	817	59,933	758	8,572
Eastern	76	3,409	5,535	26,818	99	5,288	1,586	4,267
Northern	250	3,795	35,400	35,400	88	1,986	3,536	31,512
Upper West	22	166	0	0	6	2,109	0	0
TOTAL	4,870	128,267	112,985	423,302	2,209	121,583	6,988	85,278
# Farmer/ Session		26.33		3.74		55.16		12.20
# Regions Reporting		7		6		7		6

124

Table 3

Monthly Workshops - 1990

MONTH	TOPIC	RESOURCE PERSON
January	-Soybean Utilization	Miss Mercy Falley
	-Introducing Improved mud-stoves	Miss Grace Koyiri
February	-Animal Traction (Staff Training)	Mr. Alhassan Fusheini
	-Guinea Worm Prevention	
	-Guinea Worm Prevention & Eradication	Sasakawa Global 2000 Project Coordinator
March	-Animal Traction	Mr. Gyefiri (STO)
	-Research Inorm Delivery &	Mr. A.M. Adam, NAES,
GGDP	Discussions on on-Farm Agronomy Packages	
	-Using Bullocks and Donkeys as Draught Animals	Mr. H.K. Naah
April	-Legumes Production Recommendations	Dr. Marfo (NAES)
	-Crop Rotation Practices	On-Farm Agronomy (NAES)
	-Yam Minisett Technology	Mr. Amoo-Baffoe
	-Cereal Production Recommendation	Mr. Christopher Bakaweri
May	-Soil Improvement Practices	Mr. Frey/A.M. Adam
	-Field Measurements	Mr. M.A. Addah
	-Ag. Use of Urea	NEAS/Global 2000/GGDP
	-Agroforestry	Reg. Forestry Officer
June	-Half Yearly Evaluation	Mr. Frank Adongo/ Mr. Raubold Wulf
	-Crop Protection	PPRS/Mr. Asare
	-Vegetable Production Recommendations	Miss Rabi/Mr. G.Y. Semordzi
July	-Yield Sampling	PPMED/Mr. A.M. Adam
	-Maintenance/Storage of Farm Implements	Mr. Adam Atchulo
August	-Vegetable Utilization, Processing and Storage	Miss Florence

Table 3 (page 2)

September	-World Food Day Preparations -Anti Bush fire campaign -Fire fighting	Reg. Agric. Director Environment Protection Council
October	-Seed selection and storage -Grading/Standardization/ Marketing of Farm Produce	Post Harvest Unit Dr. Shultz
November	-Extension Teaching Methods -Extension Research Forum -Program Planning -Internal Evaluation -National Farmers Day Preparations	Mr. J.Y. Faalong Mr. A.M. Adam Mr. Ansah/AESD Mr. Adongo Reg. Agric. Director
December	-Annual Report -Cassava Processing Methods -Cassava-based Intercropping Systems	RAEO (Mr. M.K. Ansah) VORADEP/RDA Mr. Amoo-Baffoe

136

Table 4

Improved Technologies and Practices in Farming and Home Improvement

1.	Improved crop varieties:	Maize Cowpea Sorghum Rice
2.	Crop diversification:	Soybean cultivation
3.	Fertilizer use, applications	
4.	Pesticide use, applications	
5.	Improved tillage and cultural practices	Planting in lines Timely weeding Animal traction
6.	Post-harvest technologies:	Optimal harvest time Chemical treatment of stored grain Cribs for corn storage
7.	Seed production technologies: Womens Extension Service	Maize, rice
8.	Organizing Women (WFED):	For credit, loans, acquisition of inputs, vegetable production, group farming
9.	Health and Nutrition (WFED):	Improved nutrition for vulnerable groups, preparation of weaning mix, utilization of soybeans & sorghum, improved recipes for traditional foods

137

Table 4 (page 2)

10.	Home improvements (WFED):	Smokeless stove Mud cupboard Improved mud stove Soak away pits Sanitation-Home beautification Kitchen gadgets using local material Solar dryers
11.	Income Generating Activities (WFED):	Bee keeping Cockrel-rabbit rearing Snail rearing Small scale fish farming Tomato-pepper production
12.	Improve Farm Practices (WFED):	Crop production Harvesting, Processing Alley cropping Handling of chemicals Fruit trees Utilization of foods

138

ANNEX F

Productivity Assessment and Economic Issues

Prepared by
Seth Vordzorgbe
Agricultural Economist/Ghana

1.0 APPP Productivity Target Assessment

Land and labor productivity targets set under APPP and the actual outturns achieved at the national level are indicated below.

Table 1

	1988		1989	
Maize	APPP	Actual	APPP	Actual
Land productivity (mt/ha)	1.1	1.4	1.1	1.3
Labor productivity[1] (kg/capita)	43	56	46	52
Rice				
Land productivity (mt/ha)	1.0	1.6	1.0	1.0
Labor productivity (kg/capita)	6.1	6.3	6.1	5.4

Comparing APPP productivity targets with actual outturns, the targets were realistically set, but reflect the actual situation more for rice than maize. The divergence between APPP targets and actual is greater for maize than rice. In the case of maize, both land and labor productivity targets under APPP were lower than realized in the two years. On the basis of these observations, it is expected that APPP productivity targets would be achieved. These targets are, however, lower than those set by the Government of Ghana (GOG) under the MTADP. The MTADP projects land productivity to reach an upper range of 1.2 Mt/Ha for both maize and rice in 1990, rising to 2.5 Mt/Ha for maize and 2.0 Mt/Ha for paddy rice inn 1995, compared to 1.5 Mt/Ha for maize and 1.2 Mt/Ha for rice projected under the APPP in 1995.

[1] Labor productivity should be measured on the basis of the farming population, but due to the lack of data, it is computed on the basis of total national population.

2.0 Market Development

2.1. Seed

Profitability of Seed Production

In general, as seen from Table 2, seed production is profitable, even under conditions of selling at approved government prices. But maize breeder seed production by the Crops Research Institute is presently unprofitable, since the full cost of developing new cultivars has not been determined and the production of breeder seed is often regarded as a public service. Foundation maize seed produced by the Grains and Legumes Development Board is barely profitable when sold at the GOG recommended price. Certified seed production by private growers is more profitable than production by Ejura Farms (which would lose at the GOG approved price) and the GLDB. Rice commercial seed production by the VRA Farms is only more profitable than private production when the company charges its own price. These observations provide part of the rationalization for limiting commercial seed production to the private sector.

Seed Pricing

Breeder seed pricing has been arbitrary and does not follow any norms. Breeders at CRI indicated that breeder seed pricing would be reviewed to achieve cost-recovery, at a minimum. The prices of foundation and commercial seed were recommended by the GSC, prior to closure, for review by the Agricultural Commodity Pricing Committee. In 1990, the GOG appointed a committee to recommend seed prices, based on the cost plus approach. However, due to several factors, including lack of quality standards, GOG approved prices do not apply since enterprises often charge different prices.

In this period of transition, registered seed growers still expect a guaranteed government pricing mechanism, much like the contract growing system operated by the GSC. They are not aware that they have to develop their own markets and that pricing needs to be left largely to market forces. The market price of seed would be determined by domestic supply and demand forces, since no maize and rice seeds are imported commercially. The market price would reflect three factors: perceived value, cost of producing and marketing seed, and the market price of grain. Since the cultivars of maize and rice cultivated in Ghana are open-pollinated, yield improvements must be marked and the seed possess clear quality advantages for farmers to purchase it. Farmers' confidence in improved seed needs to be rekindled for them to agree to pay premium prices. This is difficult when rising production and marketing costs put pressures on the final price of seed.

Furthermore, the principle of maintaining a differential between the prices of seed and grain implies that there is a positive correlation between the two prices, irrespective of the quality of seed and production costs. Under this circumstance, seed growers expect

Table 2

Profitability of Seed Production - 1990

MAIZE

Variables	Breeder	Foundation			Certified		
	CRI-GGDP	GLDB* 2	GLDB* 1	PG-Tamale**	PG-Volta	Ejura Farms	GLDB
Total Cost/Ha	415,157.00	524,541.60	524,541.60	161,700.00	208,091.00	332,244.00	341,575.00
Seed Yield Ka/Ha	200	1,200	1,200	1,800	1,900	1,400	2,500
Cost/kg	1,887.08	427.88	427.88	89.8	109.52	237.52	136.63
Selling Price/kg	1,320.00	440.00	660.00	220.00	220.00	220.00	220.00
Net Return/Ha	-275,243.00	14,400	267,458.40	234,360.00	209,912.00	-24,244.00	208,425.00
Profit/Loss/keg	567.08	12.12.	232.12	130.20	110.48	-17.32	83.37
Benefit Cost Ratio	0.70	1.04	1.55	2.45	2.1	0.93	1.61

RICE

	ARS-KPONG	ICOUR	KPONG FARMS* 1	KPONG FARMS* 2	PG-TAMALE
Total Cost/Ha	308,550.00	348,550.00	463,579.00	463,579.00	250,575.60
Seed Yield Ka/Ha	2,500	3,000	4,000	4,000	2,500
Cost/Kg	123.42	116.00	116.00	116.00	100.23
Selling Price/Kg	150.00	140.00	213.00	126.00	126.00
Net Return/Ha	66,450.00	72,000.00	388,421	40,421.00	64,425.00
Profit/Loss/keg	26.58	24.00	97.00	10.00	25.77
Benefit Cost Ratio	1.22	1.21	1.84	1.09	1.26

* 1--refers to the price charged by the enterprise; and 2--refers to the GOG's recommended selling price.
** PG refers to private growers

a premium for seed while farmers are unsure of the quality, hence the low demand for improved seed.

2.2. Fertilizers

Pricing and Incentive Environment

Farmers face two prices, depending on the source of supply. Fertilizer bought from MOA or FASCOM depots directly are priced at the approved prices. But fertilizer purchased from private dealers often cost more due to marketing and overhead costs. For example, dealers were selling compound NPK fertilizer at ¢4,500 per bag and ¢3,400 for ammonium sulphate in Kintampo. Excluding overhead costs (rent, utilities and security for the store) and income tax, fertilizer marketing costs--mainly transportation costs--are such that in the regions visited, only dealers in Kumasi could profitably operate by buying less than 500 bags from the MOA depots at a time. (See Table 3). This is due to the low discount of ¢200/bag for purchases from MOA less than 500 bags. In Techiman and Kintampo, dealers need to purchase at least 500 bags to earn higher discounts to meet higher marketing costs. One effect of the varying discounts and different marketing costs is that the price of fertilizer differs in different locations.

Table 3

Fertilizer Marketing Costs
cedis/bag

	Kumasi	Techiman	Kintampo
Transport from Depot to store	50	200	200
On loading at Depot	10	25	50
Off loading at store	10	25	50
Transport from store to selling point	50	--	--
Full bag price:			
NPK	4,320	4,450	4,500
Ammonium Sulphate	3,220	3,350	3,400

Based on the foreign exchange auction rate in June 1990, port handling charges and GOG-approved haulage rates for corrosive cargo, cost FASCOM (UR) ¢5148/bag of 23-15-5 fertilizer in Bolgatanga, 26% higher than the GOG-wholesale price of ¢4,300; while the cost of urea was the same. But these FASCOM costs exclude other marketing charges, overheads and operating profits. The present pricing policy underestimates the real cost

of fertilizer due to undervaluing of the cost of capital (charged at 12.5%) and other marketing costs. Also, there is cross-subsidization with farmers in the south paying more than they should if the cost of transporting fertilizer to Tamale is not used to price fertilizer uniformly in the whole country. This pan-territorial pricing policy also impedes the growth of private sector marketing. This needs to be reviewed, keeping in mind the need to ensure regular and timely supplies to farmers in a cost-effective manner, in addition to other aspects of the incentive environment for private sector participation. These include taxation and other fiscal benefits under the Investment Code, credit (interest rate policy) and the role of the public sector, including pricing policy, stock management, position of FASCOMs, provision of quality control services and the regulatory environment.

3.0 Agricultural Marketing

Unfortunately, Say's Law does not apply to agricultural development in Ghana: increased supply does not create its own demand. Marketing problems have come to the fore, constraining the adoption of improved technology necessary to increase productivity and lower unit production costs. Due to infrastructural constraints and other rigidities in the agricultural system, such as high transportation costs, poor quality control, lack of uniform standards and weights and inadequate market facilities and information, the marketing system is unable to handle sudden increases in maize production.

Farmers talk about the "marketing" problem. It is, however, essential to identify the real underlying causes and costs of market imperfection. The "marketing" problem could reflect a situation of low farmgate/producer prices, inadequate market access due partly to poor transportation infrastructure or low demand due to decreased purchasing power. Since low price are, in turn, indicators of accessibility and demand, the latter factors, especially market access warrant further analysis. Such analysis should include issues of storage, market roads and other infrastructure, price and stock information, value-added in marketing, agro-industrial linkages and export marketing.

Output marketing is strongly linked to input marketing. Private fertilizer and seed dealers complain that the poor market for cereals, especially locally produced rice, inhibits the development of private sector input marketing.

Output marketing is strongly linked to input marketing. Private fertilizer and seed dealers complain that the poor market for cereals, especially locally produced rice, inhibits the development of private sector input marketing.

Input marketing in Ghana is underdeveloped. Although, apart from fertilizer and seed, the private sector has been dominant in agro-input marketing, especially agro-chemicals, community-level agro-chemical retailing has not been developed. In general, agricultural input marketing needs to be developed within the framework of an agricultural input marketing strategy. Hence, it would be beneficial to move beyond issues of privatizing seed and fertilizer marketing and look at broad issues of agro-input market

143

development. These issues include, the public sector role in legislation, regulation and business development, etc. pricing mechanisms and trade policy, protection and incentives framework. These and other issues need to be examined in a study on agro-input marketing development in Ghana.

One issue that stands out clearly is the role of FASCOMs in the Fertilizer market. Private marketing would be enhanced during the transition period if alternative marketing arrangements could be established between FASCOMs and private dealers. Dealers at a major maize growing area, Kintampo, ranked their preferences for marketing support mechanisms as follows:

1. Bank (commercial) credit
2. Commissioned agents for FASCOM
3. Credit purchases from FASCOM, with interest payment
4. Normal FASCOM cash-down purchases

Discussions held with FASCOM (UR) staff indicated that FASCOM cannot afford to sell on credit to dealers due to several factors, but would be willing to explore commissioned dealership. This arrangement, and other, need to be analyzed with a view to using the FASCOMs to promote private sector marketing of fertilizer. Private sector marketing of fertilizer would be improved if farmers' use is not affected by reduced demand due to rising prices. But output market need to be developed for input marketing to improve. Hence, it is necessary to promote an output marketing system that facilitate input use and technology adoption, in addition to supporting private sector input marketing. The outline of one such scheme is described below.

A development agency (or bank, acting through the agency) finances selected inputs for farmers and farmers agree to pay back in kind at an agreed price at harvest. Private grain traders buy the grain, using bankers' guarantees (or similar insurance) which could be redeemed by the agency if a trader defaults. The banks could secure their credit to traders for grain marketing through reinsurance or by means of the Bank of Ghana Credit Guarantee Scheme and these guarantees could eventually be traded as financial paper. This scheme, which needs to be further elaborated and analyzed, would ensure availability of funding for technology extension programs involving the provision of credit. It would relieve development agencies of the need to market produce paid by farmers, promote private sector grain marketing, facilitate group formation among farmers and traders and ensure that banks retrieve their loans to farmers and traders. But the commercial banks have to improve their strategy of and resources allocated for debt collection.

4.0 Credit

Credit is a vital input in the marketing of both inputs, especially fertilizer, and output. When market sales are unable to generate adequate financing, the need substantial for credit financing becomes greater. The financial system's greatest tasks are resource,

144

mainly deposit, mobilization and credit allocation, supervision and retrieval. The financial system does not need substantial injection of fresh loanable funds for agricultural lending since there already exists some funds to be lent under the World Bank-sponsored Rural Finance Project. This system finds it difficult to meet the target of 20% of loans going to agriculture, because credit recovery rates are unsatisfactory, resources outside the banking system need to be mobilized, and lending for food crop production is relatively small. The share of credit to agriculture fell from 32% of total bank credit in Ghana in 1983 to 16% in 1988. It is important that farm-level profitability of credit use is ensured through adequate supervision of farm operations by MOA staff to facilitate farmers' adoption of the improved technology being promoted with the credit. Loans can be retrieved from small farmers, contrary to popular belief in Ghana, if banks improve their debt collection strategies, allocate more resources to the process and improve loan appraisal and supervision. This is not to advocate for a "supervised credit" system, but for improving the system of credit management by both banks and farmers to improve enterprise profitability and ensure repayment.

Field trips have revealed that farmers needed credit mainly for agro-inputs (especially land preparation equipment and fertilizers) and storage. The idea is not to explicitly provide credit to farmers to withhold their produce from depressed markets after the harvest, but for the construction of simple storage cribs. It would be beneficial if the cost of MOA/EEC sponsored maize cribs, presently costing ¢190,000, are reduced to a more affordable price, such as for the Global 2000 sponsored cribs costing about ¢30,000. An issue that needs to be reviewed is the interest rate charged fertilizer dealers by the banks; dealers prefer to be charged agricultural interest rates, not commercial trading rates. In the absence of adequate finance linked to a program to improve grain marketing, the emerging fertilizer marketing program is likely to make very slow progress.

145

ANNEX G

Terms of Reference for Mid-Term Evaluation of the Agricultural Productivity Promotion Program (APPP)

1.0 Background

Economic policies in Ghana prior to 1983 discriminated against agriculture. They favored inefficient import-substitution industries, developed behind strong protective barriers, that depended more on imported inputs than domestically-produced raw materials. Incentives to export were eliminated and linkages between local industries and agriculture failed to develop. The consequence was severe economic decline and deterioration in the quality of life for most Ghanaians.

To arrest this situation, the Government of Ghana (GOG) in April 1983, launched the Economic Recovery Program (ERP) meant to reverse the decline in the economy and to increase employment opportunities and income levels in the medium to long term, particularly in the agricultural sector. The GOG took bold steps to restore fiscal and monetary discipline, initiate the rehabilitation of the country's productive base, and encourage private investment.

While incentives and other policy reforms under the ERP have been sufficient to stimulate increased production of cocoa, timber and other cash export crops, the response of food crop production was disappointing. Per capita cereal production dropped from 80 kg in 1974-1976 to 55 kg in 1983-1987. Yields have remained stagnant at about 1 mt/ha for both maize and rice since 1970. This has been due to constraints that militate against increased agricultural productivity. During all these years Ghana had to rely on imported rice, and sometimes maize, to meet domestic consumption.

A number of donors have extended assistance to GOG in rehabilitating the agricultural sector. The major program is the World Bank's Agricultural Services Rehabilitation Project (ASRP), a $53.3 million multi-donor program initiated in December 1987. The program is comprehensive and provides institutional strengthening of the Ministry of Agriculture; agricultural research and extension support; strengthening of the Irrigation Development Authority; support for veterinary services; and general support for privatization of GOG agricultural enterprises.

To augment the World Bank's effort and make more resources available, the Agency for International Development signed an agreement in August 1988, with the Government of Ghana for the Agricultural Productivity Promotion Program (APPP), as a parallel financing effort of the ASRP. APPP seeks to promote increased food production by increasing farmer efficiency and productivity through the application of effective technologies, and the reduction of relevant institutional deficiencies and infrastructural constraints. The strategy is to support activities and policies which will eliminate major constraints. These activities include the privatization of fertilizer supply, revitalization and

146

privatization of the seed industry, the improvement of feeder roads and the strengthening of the agricultural extension services of the Ministry of Agriculture (MOA).

Through APPP, AID will provide a total of $20 million in grant funds to GOG over a three year period conditioned upon the GOG's successful accomplishment of three sets of conditionalities. The grant funds are to be sold through the Bank of Ghana foreign exchange auction. The local currency generated from the auction sales are used to finance activities which support the program goal and objectives. These activities are expected to result primarily in :

-- An improved feeder road system, in support of agricultural productivity.

-- Strengthening of the Ministry of Agriculture's extension service.

-- Policy analysis in support of the agricultural sector.

Program Conditionalities

First Tranche

A. Seed Industry:

Studies on the Ghana Seed Company (GSC) assets evaluation and on the Ghana market for improved seeds.

B. Fertilizer Privatization:

1. The reduction of subsidy on each type of fertilizer so as not to exceed 30%.

2. GOG submission of an implementation plan, acceptable to AID for the privatization of the fertilizer trade.

Second Tranche

1. The completion of two studies on the GSC assets and Ghana seed market; and

2. GOG submission of an implementation plan, acceptable to AID, which includes detailed actions to explore options for privatizing/restructuring GSC.

Fertilizer Privatization:

1. GOG submission of documentation to AID which demonstrates that the subsidy on each type of fertilizer does not exceed 15%.

147

2. GOG submission of documentation and a public announcement, acceptable to AID which demonstrate that private retailing and wholesaling has been launched in the Volta and Brong Ahafo Regions.

Third Tranche: (target date: August 1990)

Seed Industry:

1. GOG selects an option for privatizing/restructuring the GSC that is acceptable to USAID;

2. GOG submits a plan, acceptable to USAID, to implement the selected option;

3. GOG submits evidence, acceptable to USAID, that it has launched implementation of the selected option.

GOG has accomplished the conditionalities under both the first and second tranche. As a result, the first tranche of grant funds, $5.94 million was disbursed to GOG and auctioned by the Bank of Ghana in FY 89; the second tranche of $8.611 million was disbursed, and auctioned in FY 90.

Through policy dialogue, APPP is expected to accomplish the following outputs:

-- Privatization of fertilizer supply and distribution (gradual elimination of the price subsidy; gradual switch from government to private retailing, wholesaling and importing),

-- Privatization/restructuring of the Ghana Seed Company to help revitalize the seed industry, resulting in increased supply of improved seeds to farmers.

Through the accomplishment of the first two sets of conditionality under tranche one and tranche two, the GOG has initiated a dynamic process in moving toward revitalizing the participation of the private sector in the fertilizer and seed industries. The private sector is beginning to import fertilizer; 523 dealers have registered throughout the country to distribute fertilizer commercially. However, with this start, active private sector participation in fertilizer importation and distribution has been minimal. Out of 523 registered dealers, only 36 are actively trading fertilizer and of these, 34 are in the Brong Ahafo Region. The GOG is still involved in the distribution of fertilizer through FASCOM as GOG is the major shareholder. Only one trader has imported fertilizer. Additionally, fertilizer use by small farmers appears to remain negligible, according to a March 1990 report by the Ghana National Centre for Development Studies.

In the area of seed, the GOG has developed a plan for the development of a national seed industry. However, the implementation of the plan has not yet commenced and therefore progress in this area has been difficult to assess.

148

Field monitoring of APPP activities has proceeded slowly. Collection of baseline data for the program began in late June 1990. The Policy Planning, Monitoring and Evaluation Department of the Ministry of Agriculture, which has GOG responsibility for program monitoring and evaluation, is in the process of establishing a data collection and monitoring system to track changes in the baseline data.

In order to assess the effectiveness of the program in meeting its objectives, USAID and GOG have planned a mid-term evaluation for November 1990. The evaluation will be conducted by a team of advisors from AID, independent consultants and GOG representatives who are not involved in project implementation but are familiar with APPP.

2.0 Statement of Work

The team of experts shall evaluate the Agricultural Productivity Promotion Program:

- To review progress to date in realizing outputs for the program conditionality and local currency activities;
- To identify constraints and solutions to implementation problems; and
- Assess the level and quality of policy dialogue;
- To assess program management and monitoring
- To reassess the validity of program assumptions and appropriateness of the program and its design; and
- To make recommendations for improving program implementation.

The team shall provide a profile of what has happened in each of the target areas of APPP as the result of program conditionality and local currency financing of APPP target activities. Some specific questions the team should answer are:

Fertilizer Privatization

- What are estimates of current stocks of fertilizer (e.g. urea, compound fertilizers)? Based on recent price changes and further privatization effects, what is expected to be the effect on demand for fertilizer?
- What changes in private sector participation has occurred as a result of the policy changes?
- What is the context for the changes, what constraints exist to full participation of the private sector in the importation, distribution (wholesaling and retailing)?

144

Does the environment for participation differ between regions, especially regions where FASCOMs exist and where they do not?

-- What is the effect of the change in fertilizer pricing on small farmers' use of fertilizer and private sector distribution?

-- What is the complementary in conditionality between the World BAnk program, other donors programs and APPP?

-- Do the changes taking place represent revitalization of private sector fertilizer distribution? If FASCOMs are operating on a commercial basis, is this representative of APPP achieving its target?

-- What additional steps need to be taken to achieve a viable private sector fertilizer distribution?

-- Define the role for donor funded fertilizer supply in view of the privatization program.

-- Given existing public sector stocks of fertilizer, what is the effect of these stocks or privatization, how can these stocks be utilized to further privatization?

Seed Industry

-- What changes have occurred in the seed industry as a result of the policy changes under APPP? What is the context for these changes?

-- What progress has the GOG made in initiating its plan for restructuring the seed industry? What are the constraints or resources required?

-- What options exist for accelerating the restructuring of the industry? What resources are required? Are there policy or other constraints?

Program Monitoring

1. Are the dollars promptly auctioned? Is the auction mechanism working effectively, and is the foreign exchange regime evolving as desired, including convergence of the auction and bureau rates?

2. Is implementation of APPP-supported activities of acceptable quality?

3. Are APPP funds (dollars and cedis) properly accounted for?

4. Are APPP cedi generations being disbursed by GOG implementing agencies at acceptable rates? Is there a pipeline problem?

5. Are APPP management and oversight systems working effectively?

Local Currency Activities

Program Impact Monitoring

-- Is current plan for impact monitoring of APPP appropriate? What are the problems related to the establishment of the monitoring system within Program Policy Monitoring and Evaluation Division (PPMED) of the Ministry of AGriculture? What resources or technical assistance may be required to get the system operational?

-- How useful is the baseline data for impact monitoring? What additional information is required?

-- What options are available for improving monitoring?

Agricultural Extension

-- What activities have been financed and what has been the effect on improving extension services?

-- What are the constraints to an improved agricultural extension program? What kinds of activities should be financed to improve the effectiveness of extension? What options are available for removing the constraints?

-- What is the extent of other donor involvement? Are APPP-financed activities complementary or duplicative of other donor financing? What can be done to ensure the most effective use of APPP funds?

Feeder Roads

-- Has the Department of Feeder Roads (DFR) met its target in rehabilitating and constructing feeder roads?

-- What are the constraints to meeting targets?

-- What are the quality of the roads? What needs to be improved?

-- How effective is its contractor program? What is the mix between the use of capital versus labor intensive road construction methods? How successful is each method and what mix of methods is recommended to achieve DFR targets within the program timeframe?

Policy Studies

- How relevant are the chosen policy studies to the overall program?
- Were the studies effectively used as a basis for policy dialogue and policy reform?
- What additional studies should be undertaken to support continued policy dialogue and the additional policy reform required to support APPP objectives for fertilizer and seed?
- What studies could be conducted to support other APPP activities under the local currency program?

3.0 Methodology

The team shall utilize program reports, studies, interviews and field investigation (Volta, Brong Ahafo, and Northern regions) to assess the progress to date under APPP. The team shall consult the following sources of information at a minimum:

- APPP Program Assistance Approval Document (PAAD)
- APPP Grant Agreement
- APPP monitoring reports
- APPP studies
- APPP baseline data
- APPP special account and trust fund reports
- Program counterparts at the Ministry of Finance and Economic Planning, Ministry of Agriculture, Department of Feeder Roads
- Senior personnel at FASCOMs in the Volta and Upper East and Upper West Regions
- Private fertilizer dealers (in Accra and other regions)
- Donor agencies, e.g. World Bank, EEC, FRG, Canada.

157

4.0 Team Composition

The team will be comprised of the following personnel:

- -- Agricultural Development Officer (AID/REDSO/WCA) (Team Leader)
- -- Agricultural Economist (AID/REDSO/WCA)
- -- Civil Engineer (AID/REDSO/WCA)
- -- Seed Industry Specialist (contractor)
- -- Fertilizer Industry Specialist (contractor)
- -- Monitoring and Evaluation Specialist (contractor)

Contractor Team Qualifications

Seed Industry Specialist

-- Ten years experience working in the seed industry, with a minimum of five years experience in developing countries: Experience with developing strategies and policies in a developing country context.

Fertilizer Industry Specialist

-- Ten years experience working in the fertilizer industry, with a minimum of five years in developing countries: Experience developing strategies and policies in a developing country context.

-- Direct experience in privatizing fertilizer industries in developing countries, with emphasis on identifying constraints and creating viable options to encourage private sector participation.

Monitoring and Evaluation Specialist

-- At least five years experience working with and developing systems in a developing country context. Specialist should have experience working in Africa.

5.0 Level of Effort

The evaluation will be conducted in Ghana over a four week period, according to the following schedule, beginning November , 1990:

--	Agricultural Development Officer	4 weeks
--	Agricultural Economist	3 weeks
--	Civil Engineer	3 weeks
--	Seed Industry Specialist	4 weeks
--	Fertilizer Industry Specialist	4 weeks
--	Monitoring and Evaluation Specialist	3 weeks

6.0 Reporting Requirements

Format

The Team Leader shall prepare a written report of the evaluation which contains the following sections:

- Executive Summary
- Table of Contents
- Major Findings (achievements and constraints)
- Lessons Learned
- Recommendations

Copies of the report shall be submitted to USAID in draft form for USAID review and comment during week three. The final report will be due at the end of week four. The team leader will submit hard copies of the report and a copy of the diskette.

Schedule

The final report is due the end of week four.

7.0 Management and Supervision

The team shall work under the direct supervision of the Mission's Project Development Officer who will assist the team in making initial appointments with key GOG personnel.

8.0 Scope of Work for the Local Economist

An agricultural economist will be hired locally to act as a resource person to facilitate the work of the team and to undertake such economic analyses as are necessary related to the objectives of the evaluation. Among the tasks to be performed by the agricultural economist are the following:

- assist the team to identify critical program issues and sources of data needed to address these issues.

- undertake analyses of the effect of policy changes in the efficiency, profitability and structure of the fertilizer and seed industries.

- undertake analyses to determine the initial effect of program investment in road rehabilitation/maintenance.

- identify issues related to the agricultural extension strategies and development. Assess their implications for the efficiency of the extension system and effect on production.

154

- assist in formulating recommendations related to necessary next steps to further the program objectives.

These analyses will provide the economic input into the work of the consultants in each of the four areas of focus, i.e. privatization of the seed industry, privatization of the fertilizer supply, the improvement of feeder roads, and the strengthening of the agricultural extension service.

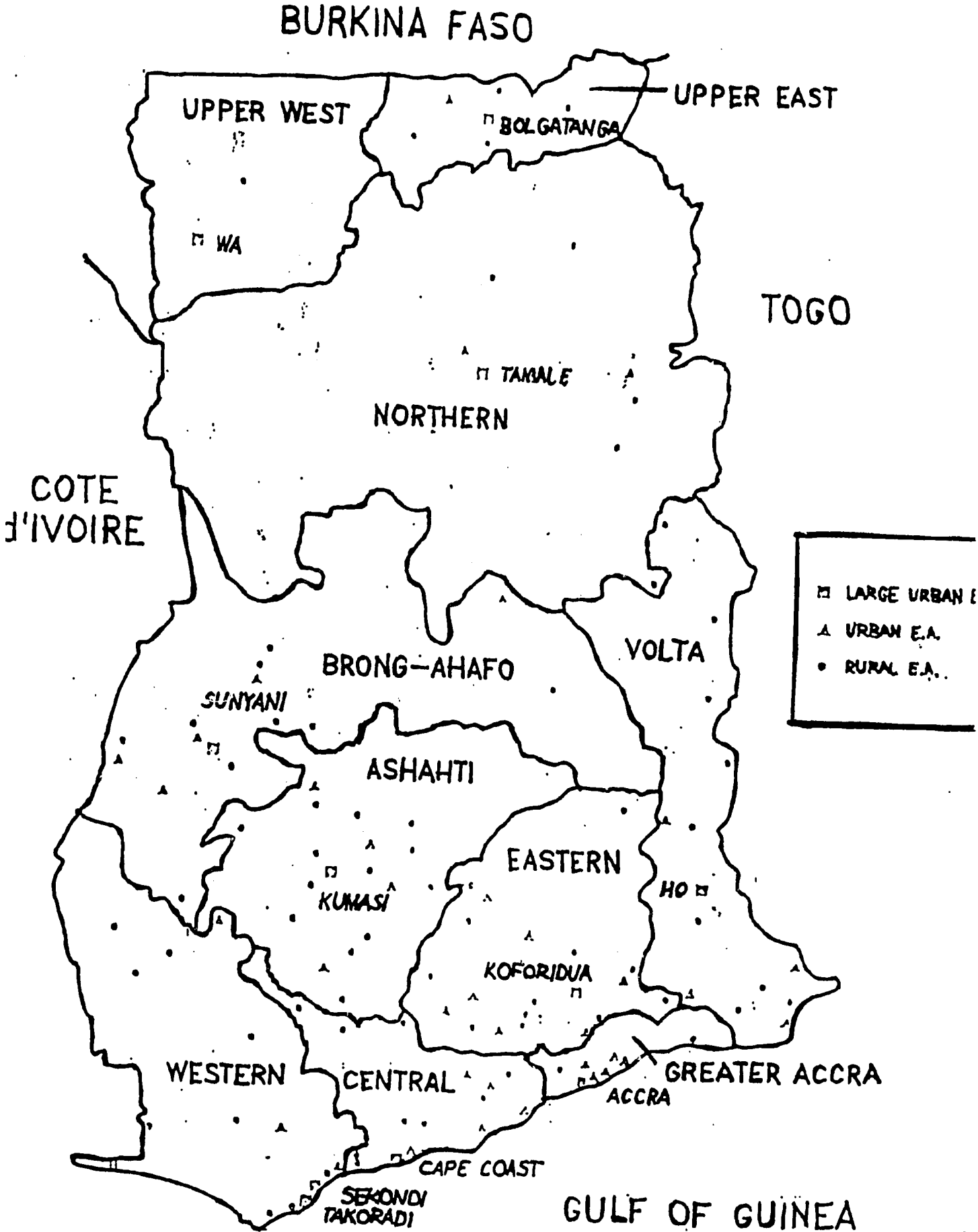
The agricultural economist will be hired for 18 days. The work is to be undertaken between November 13- December 7, 1990. The agricultural economist will provide write-ups of each of the analyses listed above for incorporation into the draft report to be submitted to USAID during week three of the evaluation and assist in the preparation of the final report.

ANNEX H

Logical Framework
Agricultural Productivity Promotion Program

	Indicators	Means of Verification	Assumptions
Goal to accelerate creation of productive employment in the private sector, especially in agriculture	increased per capita income, increased employment in the private sector	GOG & donor reports, statistics, GLSS, Cornell University study	political and economic stability, no external shocks, favorable weather
Purpose to increase productivity in food crop production	1988 / 1991 / 1995 maize: kg/capita 43 / 46 / 53 mt/ha 1.1 / 1.2 / 1.5 rice: kg/capita 6.1 / 6.3 / 7.0 mt/ha 1.0 / 1.1 / 1.2	GOG and donor reports and statistics, GLSS, evaluation	increased demand for goods and services, Structural Adjust. Program continued, political and economic stability
Outputs 1. liberalization of fertilizer supply	1. implementation plan by 10/88, subsidy reduced to 15% by 5/89 and eliminated by 8/90, private internal sales by 8/90, launch private import. by 8/90	1. GOG and donor reports GOG announcements, spot checks in field, evaluation	Structural Adjustment Program continued, no new regulations or policy changes restricting agriculture
2. liberalization of seed supply	2. studies by 5/89, implement plan for GSC privatization by 5/89, GSC privatiz. launched by 8/90	2. GOG and donor reports, GOG announcements, spot checks in field, evaluation	
3. imported inputs	3. $20 million in imports	3. Bank of Ghana reports, evaluation	
4. policy analysis relevant to agriculture	4. 15 policy studies	4. GOG and donor reports, evaluation	
5. improved rural infrastructure	5. 700 km/yr additional feeder roads maintained or rehabilitated	5. GOG and donor reports, field checks, evaluation	
6. strengthened MOA extension service	6. farmers having contact per agent increases from 350 (1988) to 1150 (1991)	6. GOG and donor reports, field checks, evaluation	
Inputs 1. U.S. dollars 2. cedis 3. evaluations	1. $20 million 2. ¢ equivalent of $20 million 3. A.I.D., GOG personnel, private consultant	GOG and USAID reports, audit	stable U.S.-Ghana relations, timely A.I.D. reviews

ANNEX I


BURKINA FASO
UPPER WEST
UPPER EAST
BOLGATANGA
WA
TOGO
TAMALE
NORTHERN
COTE
d'IVOIRE
LARGE URBAN E
URBAN E.A.
RURAL E.A.
VOLTA
BRONG-AHAFO
SUNYANI
ASHAHTI
EASTERN
KUMASI
HO
KOFORIDUA
WESTERN
CENTRAL
GREATER ACCRA
ACCRA
CAPE COAST
SEKONDI
TAKORADI
GULF OF GUINEA

ANNEX J

Individuals Contacted

USAID	Joseph Goodwin, Director Edward Birgells, Program Officer Peter Weisel, Agricultural Economist Robert Wuertz, Economist Lynn A. Keeys, Project Development Officer Larry Grizzard, Controller
GOG	Dr. Samuel K. Dapaah, Director PPMED Dr. J.A. Kwarteng, Professor, Extension, University of Cape Coast Mrs. Rosetta Tetebo, Head, Women's Extension Division Mr. Victor O. Newman, GHANEXIM, Economic Consultants Dr. Ofori, Director, Crop Services Department Mr. Lambert Delmini, Seeds, Crop Services Department Mr. Osei Owusu, Fertilizer, Crop Services Department Mr. Niku, Post Harvest, Crop Services Department Mr. B.L.T. Sakibu, Deputy Director, Feeder Roads Department Mr. C.D. Antwi, Feeder Roads Department Mr. Alex T. Masi, Feeder Roads Department Mr. Thomas G. Kolley, District Agricultural Extension Officer, Brong Ahafo Mr. Alex Kwasi Ntwo, Regional Agricultural Extension Officer Mr. Krobe Asante, District Agricultural Officer, Kintampo Mr. Daniel K. Adomaku, Regional Crops Officer Mr. Adam Kaleem, Deputy Secretary, Agric. Tamale Mr. Anane, Regional Director of Agriculture Mr. M.K. Ansan, Regional Agricultural Extension Officer Mr. Samuel Akbabe, Zonal Coordinator, Extension Dr. Korang, Director of Extension Mr. Franklin Donkoh, Deputy Director, Extension
WIENCO	Mr. H.J.M. Wientjes, Fertilizer Importer
World Bank	Dr. Hong, Agricultural Advisor
Global 2000	Dr. Galiba Wayne Hague Mathews Akpose

158

ANNEX K

Dcouments Reviewed during APPP Mid-term Evaluation: November 1990

A. Research and Extension

1. Comparative Assessment of Alternative Extension Programmes Implemented in Ghana, May 28, 1990

2. Proposed Agricultural Extension Strategy, June 5, 1990

3. Review of the Ghana Agricultural Research System, Vol. I: Report, December 1989

4. Review of the Ghana Agricultural Research System, Vol. II: Annexes, December 1989

5. Comparative Assessment of Alternative Extension Programmes Implemented in Ghana, May 1990

B. Food Aid Related Documents

1. Food Aid and Economic Development in Ghana, December 1980

C. Feeder Roads

1. Final Report Socio-Economic Impact Study, of Feeder Roads Improvements Using Labour Based Techniques, August 1990

2. Rural Road Sub-Sector Strategy, Republic of Ghana, November 1, 1990

D. Fertilizer Privatization

1. Ghana Fertilizer Privatization Study–Draft Final Report, International Fertilizer Development Center, July 1990

2. Recommendations for Improved Agricultural Input Distribution Via Increased Private Sector Involvement, Michael Borish

3. Fertilizer Requirements and Use in Ghana, Tropical Agricultural Development Consultancy, Accra, March 1990

4. Fertilizer Consultant Terminal Report

5. FASCOM (VR) Limited Proposals for Restructuring Privatization and Rehabilitation

6. Economic Analysis of Fertilizer Use and Recommendations in Ghana: Draft Final Report (Tropical Agricultural Development Consultancy), 17 November 1989

159

E. World Bank Documents

1. Agricultural Diversification Project, Staff Appraisal Report, September 5, 1990

2. Agricultural Services Rehabilitation Project, Staff Appraisal Report, Ghana, April 22, 1987

3. Services Rehabilitation Project–Mid-Term Evaluation of the Project's Impact

F. USAID Documents

1. PAAD: Agricultural Productivity Promotion Program, August 1988

2. Program Grant Agreement, APPP, August 29, 1988

3. Trust Fund Agreement between GOG and USAID, April 17, 1989

4. Micro Analysis of Agriculture Sector in Ghana, February 21, 1990

5. Agricultural Productivity Promotion Program, *Baseline Data*, October 1990

6. Agricultural Sector Reform under Structural Adjustment in Ghana: The Role of USAID. by Andrew Sisson and Seth Vordzorgbe

7. APPP Monitoring Plan–drafted October 1988–revised March 1989, Seth Vordzorgbe

8. Improving the Collection and Use of Program Performance Data Management Systems International Report to the USAID, March 1990

9. USAID Ghana's Assessment of Program Impact Report, dated October 31, 1990

10. Action Plan FY 1990-1991–Ghana–submitted by USAID 2-10-89

11. Quarterly Monitoring Reports, Volumes 1, 2, and 4 covering 1989

G. GOG Documents

1. First Annual Report on APPP Activities, February 6, 1990

2. Ghana Medium Term Agricultural Development Program, Vol. I and II, February 1990

3. Changing Maize Production Practices of Small Farmers in the Brong-Ahafo Region, Ghana Grains Development Project, February 1987

4. Medium Term Agricultural Development Project (MTADP), working paper 16 – implementing the MTADP

5. Medium Term Agricultural Development Plan (MTADP), working paper 17 – Information Management System for the MTADP

6. 1990 Monitoring Survey for Agriculture Productivity Promotion Program In-put Dealer Questionnaire – M.O.A. PPMED

7. 1990 Monitoring Survey for APPP
Farmer Questionnaire – M.O.A. PPMED

8. Draft of Consultancy Contract with Agro Plan to carry out monitoring studies – M.O.A. PPMED

9. Terms of Reference for the Mid-Term Evaluation of the Project's Impact of the Agricultural Services Rehabilitation Project. Undated draft – report due 12-31-90

H. Seed Industry Related Documents

1. Revitalisation of the Seed Industry: Supply and Demand; Marketing Plan, Media Majique and Research Systems

2. Ghana Seed Company Limited, Final Report on Valuation of Fixed Assets, May 1980

3. National Seed Inspection and Certification Programme

4. Restructuring the Ghana Seed Industry, USAID Discussion Paper, December 1986

5. Restructuring the Ghana Seed Industry – A Proposed Program for Action, November 1986

6. Ghana Seed Industry Project, Crop Services Department, MOA, Ghana, November 1990

I. APPP Studies Steering Committee Documents

1. Minutes and other correspondence

J. UNDP Documents

1. GHA/86/008 Technical Report
A Monitoring System for Agricultural Development Projects, Nathan Associates, Inc., for the FAO of the UN

2. GHA/86/008 Technical Report
Short Term Training Plan
Policy, Planning, Monitoring and Evaluation Department
MOA
Nathan Associates, Inc., for the FAO of the UN

161