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FINAL REPORT

EVALUATION OF THE AGRICULTURAL PRODUCTIVITY PROMOTION PROGRAM (APPP) AND THE GHANA FOOD FOR DEVELOPMENT PROGRAM (ONE-YEAR PL-480 TITLE III)

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Abbreviations and Acronyms

APPP	-	Agricultural Productivity Promotion Program
GOG	-	Government of Ghana
CRI	-	Crop Research Institute
DAES	-	Department of Agricultural Extension Services
DCS	-	Department of Crop Services
MOFA	-	Ministry of Food and Agriculture
MFEP	-	Ministry of Finance and Economic Planning
DFR	-	Department of Feeder Roads
GSC	-	Ghana Seed Company
SGAs	-	Seed Growers Associations
SG 2000	-	Sasakawa Global 2000
ASRP	-	Agricultural Services Rehabilitation Program
RARP	-	Rural Access Road Project
GSIU	-	Ghana Seed Inspection Unit
NSC	-	National Seed Committee
NSS	-	National Seed Service
PAAD	-	Program Assistance Approval Document
GLDB	-	Grains and Legumes Development Board
BOG	-	Bank of Ghana
WIAD	-	Women in Agricultural Development
USAID	-	United States Agency for International Develop
GHA	-	Ghana Highway Authority
MRH	-	Ministry of Roads and Highways
PPME	-	Policy Planning, Monitoring and Evaluation
TOR	-	Terms of Reference

EXECUTIVE SUMMARY

Program Strategy

The Agricultural Productivity Promotion Program (APPP) constitutes an integrated assistance package to Ghana's agricultural sector in support of the Economic Recovery Program (ERP). APPP sought to accomplish this by providing a $20 million cash grant, from the A.I.D. Development Fund for Africa, to the GOG for auction by the central bank (Bank of Ghana) and providing selective budgetary support to the agricultural sector. These actions were to help the GOG undertake outstanding policy reforms that were outlined under its World bank and IMF - supported Policy Framework Paper.

At the sectoral level, APPP sought to (a) accelerate the creation of productive employment in the private sector, especially in agriculture through improved productivity and increased levels of employment, and (b) increase productivity in food crop production per capita and increase yields. Two main productivity targets as indicators of program success were set out by APPP. They were per capita increases in maize and rice yields. Process oriented output targets related to policy dialogue, improved extension services, privatization of the seed industry and rehabilitated feeder roads were prescribed under APPP. APPP sought to increase productivity by:

1. increasing the flow of knowledge to farmers about improved technologies, including fertilizer and improved seeds use through improvement in MOFA'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; and

4. alleviating infrastructure constraints to reduce farmer input and marketing costs through the improvement of rural infrastructure, especially feeder roads.

This program was expected to end in 1991. In 1991 the USAID donated 46,500mt of wheat, under the single year PL-480 title III, to be sold. The cedis generated were used to build upon the results of APPP.

The single year PL-480 title III was designed to build upon the results of the APPP by supporting additional policy reforms essential to privatizing agricultural input supply markets, particularly the market for fertilizer.

Findings

1. Both GOG and especially institutions which directly benefitted from APPP budgetary support services declared the project performance as satisfactory. APPP's funding arrangement whereby it provided untied dollar exchange to the foreign exchange auction system which generated local currency for agreed upon programs was highly commended by GOG. Not only did it ensure a flexible financing arrangement, quick response/disbursement of funds was achieved impacting positively on overall project performance.

   However funding via food aid as it was done under FY 1991 PL-480 Title III, one year program was a difficult process. Generating funds through such a source was characterized by varied problems, making such a funding arrangement relatively inefficient.

2. All conditionalities for the release of 1st, 2nd and 3rd tranches relating to privatization of fertilizer and seed industries have been met by GOG at the time of the study.

3. Satisfactory progress in the key areas of (a) policy changes leading to the privatization of input supply (seed and fertilizers) including the removal of subsidies on fertilizers; (b) A.I.D. Trust fund support and (c) budgetary support for extension service and feeder road rehabilitation have been achieved.

   The above notwithstanding, indications are that the use of fertilizers is on the decrease due to increased prices resulting from subsidy removal and external factors. An estimated stock of about 34,500mt of fertilizer (excluding government's security stock) was recorded during the 1992 Cropping Season. Emerging problems relating to quality control, financing and management within the privatized fertilizer and seed sector need to be addressed to ensure sustainability.

4. APPP support to the rehabilitation of feeder roads has made remarkable impact on project beneficiaries. The institutional capability of DFR has improved considerably. It has contributed to the improvement of farmer's access to markets, goods and services, and farmers' incomes increased.

5. The performance of the Department of Agricultural Extension Services has been greatly enhanced. Mobility, outreach capacity and training of front line staff has increased. The extension officer/farmer coverage ratio has risen from 1:624 to an impressive figure of 1:1625.

6. The design of the APPP as outlined in the program assistance approval document (PAAD) did not indicate any gender specific considerations for program activities and impact.

Nevertheless, women could have been affected by various components of the program either as direct agents of implementation, or beneficiaries.

7. It appears monitoring arrangements for tracking progress and reporting was relatively weak. This has accounted for a lot of discrepancies in the limited qualitative and quantitative data available. Getting relatively easy retrievable data sources for analysis remained a daunting task which faced the evaluation team.

Recommendations

1. The strategy of direct auctioning of donor funding in dollars by Bank of Ghana proved very effective. However funding through food aid proved relatively cumbersome. It is recommended that in-house review of PL 480 funding system is undertaken to make the intervention more responsive.

2. It is recommended that regular meetings between DFR and USAID/Ghana be held to clarify program objectives and targets. Furthermore, DFR at such meetings should indicate changes in scope of work with its attendant cost implications so that realistic targets and budgets could be set.

3. Monitoring and evaluation (M & E) plan should be developed at the onset of future programs. Role specifications should be spelt out in such a plan and implementing agencies should be trained and equipped to undertake monitoring and in-house evaluation.

4. In order to address gender issues in programs, it is recommended that gender bias socio-economic surveys are conducted to determine how women could be affected by proposed programs or projects. This may require identification of present roles and needs, and the extent to which roles can be enhanced or accommodated in the proposed programs.

1.0 INTRODUCTION

1.1 BACKGROUND

Given the dominance of agriculture in the economy of Ghana, the basic resource endowment and comparative advantage in several crops, any long term development strategy must focus on agriculture, both food and cash crops, as the engine of economic growth. This was the recognition that made the agricultural sector a key element of the Economic Recovery Program (ERP) initiated in 1983.

Incentives and other policy reforms under the ERP had been sufficient to stimulate increased production of cocoa, timber and other cash crops. However, the response of food crop production had been disappointing. For instance per capita cereal production dropped from 80kg in 1974-76 to 55kg in 1983-87 and yields for maize and rice had stagnated at 1mt/ha since 1970. Low yields were attributed to low productivity resulting from low application rates of modern inputs such as inorganic fertilizers and improved seeds, inadequate credit, deteriorated/non-existent rural infrastructure and a woefully inadequate extension service.

Further policy reforms in the Agricultural Sector were, therefore, outlined under the World Bank and IMF-supported Policy Framework Paper. The GOG and the World Bank initiated these reforms in 1987 under the Agricultural Services Rehabilitation Project (ASRP).

The Agricultural Productivity Promotion Program (APPP), financed by USAID, was initiated in 1988, in furtherance of these initiatives, to increase the productivity of farmers through increased access to production inputs, markets and extension. This program was expected to end in 1991. In 1991 the USAID donated 46,500mt of wheat, under the single year PL-480 title III, to be sold and the money used to build upon the results of APPP.

1.2 THE APPP

The APPP constitutes an assistance package to Ghana's agricultural sector in support of the Economic Recovery Program (ERP). It was financed by a $20m assistance from USAID Development Fund for Africa. The grant was obligated in three tranches and the cedi equivalent resulting from the auction was programmed for budgetary support of the implementing agencies. Initially, there were four implementing agencies and the Ministry of Finance and Economic Planning/Ministry of Food and Agriculture (MFEP/MOFA) monitoring team. The implementing agencies were:

- Department of Feeder Roads
- Agricultural Extension Services Department
- Crop Services Department
- National Centre for Development Studies

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The National Centre for Development was, however, dissolved and its functions transferred to the Policy Planning, Monitoring and Evaluation Division of the Ministry of Food and Agriculture.

Under the program each implementing agency was assigned specific roles in consonance with the overall project objectives of achieving increased productivity in food crop production. The program was drawn up to enhance Ghana Government policy reforms in Agriculture. The thrust of these policy reforms related to APPP was in the area of privatization of fertilizer supply and distribution and revitalization of the improved seed industry.

There was in addition, selected budgetary support to the Department of Feeder Roads, the defunct National Centre for Development Studies, a USAID Trust Fund and GOG monitoring and evaluation of the program.

1.2.1 Conditionalities

The release of the $20 million grant was linked to GOG's implementation of certain policy reforms with reference to:

- subsidy removal on fertilizer and the privatization of fertilizer sales, and
- restructuring of the seed industry in the country

The specific conditionalities for each tranche were:

First Tranche (target date: October 1988)

GOG submission of documentation, acceptable to USAID, which demonstrates that the subsidy on each type of fertilizer does not exceed 30%.

GOG submission of an implementation plan for fertilizer privatization acceptable to USAID.

Second Tranche (target date: May 1989)

GOG submission of documentation acceptable to USAID, which demonstrates that the subsidy on each type of fertilizer does not exceed 15%.

GOG submission of documentation and a public announcement, acceptable to USAID, which demonstrate that private retailing and wholesaling have been launched in the Volta and Brong Ahafo regions.

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Third Tranche (target date: August 1990)

GOG submission of documentation acceptable to USAID, which demonstrate that private sector retailing and wholesaling of fertilizer throughout Ghana has been launched and that private sector importing is allowed.

These reforms were, however, already agreed upon by GOG and the World Bank in varying degrees under the Agricultural Services Rehabilitation Project (ASRP) which became effective in June 1987. Under the ASRP Credit Agreement the GOG was to reduce its subsidy on fertilizer to 30% of the retail price for the 1988 crop year and 15% of the retail price for the 1989 crop year and finally eliminate all fertilizer subsidies for the 1990 and subsequent crop years. The APPP thus represented a parallel financing of the World Bank agricultural sector program.

The breakdown of the allocations made for the assistance was as follows:

Tranche	$Equivalent (million)	¢programmed (billion)	¢ generated (billion)
1	5.94	1.05	1.38
2	8.61	2.42	2.62
3	5.45	2.14	1.88
Total	20.00	5.61	5.88

Source: MFEP

The allocation was made to support the different program elements as follows:

	Tranche 1	Tranche 2	Tranche 3
	(amount in million US$)		
Rural Feeder Roads	2.000	5.700	2.000
National Extension Service	3.368	0.332	2.000
Policy Studies*	0.074	-	-
Monitoring, Evaluation and Training	0.200	0.325	0.275
National Seed Program	-	0.467	0.637
USAID Trust Fund	0.297	0.861	0.540
Others	-	0.924	-
Total	5.939	8.609	5.452

* Policy studies, monitoring, evaluation and training were combined in the second and third tranches.

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1.2.2 Program Strategy

The main objectives of APPP are two-fold:

Accelerate the creation of productive employment in the private sector, especially in agriculture through improved productivity and increased levels of employment. APPP was expected to help farmers to increase their production of food crops through improvement in productivity and also reduction in the cost of input purchased and increased output marketing through the improvement of rural infrastructure.

Another role APPP was expected to play was to contribute to greater incomes to individuals by providing services to the Agricultural sector, through either encouraging private participation in input marketing (backward linkages) or by increased marketing and processing or increased agricultural production by improving infrastructure that help reduce marketing costs for traders or input costs for processors.

Increase productivity in food crop production per capita and increase yields. This was to be achieved by enhancing the flow of knowledge to farmers and access to improved technologies, by strengthening the agricultural extension service. Further to this, the program would increase supply of agricultural inputs to farmers through greater participation of the private sector in input production and distribution.

Finally the program aimed at reducing infrastructural constraints and minimizing farmer input and marketing costs. Its key area of concern with respect to infrastructure was feeder roads.

Maize and rice are considered the main indicators of program success since fertilizer and improved seed are used essentially for their cultivation. Targets set for the measurement of attainment of the program objectives were as follows:

	Yield (mt)	1988	1989	1991	1993
Maize	per capita	43	46	46	51
	per hectare	1.1	1.1	1.2	1.4
Rice	per capita	6.1	6.1	6.3	6.7
	per hectare	1.0	1.0	1.1	1.1

a. Privatization of Fertilizer Supply and Distribution

For many years the GOG did not only heavily subsidize fertilizer but was also solely responsible for its importation and distribution in Ghana. The characteristics of the fertilizer supply industry were frequent late arrival of the fertilizer and inefficiency in its distribution which made the heavy investment in fertilizer in terms of subsides not worthwhile.

The core of the fertilizer component of the APPP is that GOG should divest itself of its monopoly in procurement and distribution of fertilizer and create the enabling environment for private participation in fertilizer marketing and distribution. At the same time GOG was expected to withdraw all subsidies on the fertilizers.

Private sector importation and distribution of fertilizer was expected to increase the numbers and types of marketing outlets and ensure timely delivery. This would increase access to fertilizer by all farmers, especially small farmers. Increased access to fertilizers was expected to reflect in increased productivity in food crops, especially grain production. The following targets were thus set as a measure of the success of the program.

	Targets				
	'88	'89	'90	'91	'95
% area cropped with maize fertilized	30	32	34	36	42
Total fertilizer imports (m.t.)	47,409	73,500	65,404	76,500	-

b. Seed Industry

The improved seed industry in Ghana has progressively deteriorated over the years. The Ghana Seed Company (GSC) which was solely responsible for distribution of improved seeds, could only meet 10% of the demand for improved seeds. Moreover, the company, absorbing huge government outlay, was continually operating at a loss. Between 1983 and 1987, the net GSC operating losses, outstanding bank loan and interest on the loans, amounted to ¢533.31 million. A major revitalization was thus required to increase improved seed supply on the market and also to curtail the government's unprofitable spending on GSC.

Under the APPP the role of GSC in the industry was to be re-examined and private participation encouraged in the production and marketing of improved seed. It was expected that with improved extension and fertilizer supplies, both the proportion of area planted with improved varieties and seeding rate would increase. The following targets were expected to be achieved by the end of the program.

	Targets				
	'88	'89	'90	'91	'95
% of cropped area with improved maize seed	30	32	34	36	42
Total sale of improved maize seed (m.t.)	1320	1384	1472	1552	1840

c. Rural Infrastructure

A major disincentive to agriculture in Ghana was identified as weak rural infrastructure, with particular reference to the feeder road network. Though Ghana has an extensive feeder road network of over 21,000km in existence, years of neglect and lack of effective maintenance had left more than half of these deteriorated to the extent that they were impassable especially in the rainy season. The resultant terrain caused the hike-up of the cost of marketing farm produce as well as cost of farm inputs.

APPP support was given to the DFR to augment assistance from other donors (eg. World Bank) that was being used to improve the road situation. Specifically the APPP support was given for the rehabilitation and maintenance of some 'non-cocoa' feeder roads, with the view of improving accessibility, and reducing both the cost of marketing farm produce and purchasing of farm inputs. Indicators and targets of achievement for the feeder road component for each of the 3 years of program implementation were as follows:

a. Graded & shaped-km 700km

b. Full regraveling-km 475km

c. Spot improvement km 115km

d. Number of drainage structures and culverts installed amounts 100

d. Extension Services

Agricultural extension in Ghana had not had any nationwide support in terms of logistics and training for a very long period. Most of the activities under which support was provided were mainly area-specific project-based donor-supported programs (eg. VORADEP, Global 2000) that did not affect the extension service as a whole. Technology transfer and farmer/extension contact in many parts of the country were thus virtually grounded.

It was recognized that even though fertilizer and improved seeds were important in increasing productivity, the flow of information on the correct application of these technologies was vital in achieving any success. An extension support component was thus provided for under APPP. Under the program, budgetary support was given to MOFA for crop extension services. The conditions were that these funds may not be used for salaries or salary supplements of extension or other MOFA personnel. The funds were to be used for strengthening extension delivery through:

- provision of logistics, including mobility
- support for in-country training of all categories of staff
- developing closer relations between research and extension
- support for special field program in extension

Targets set for the extension components were as follows:

	Targets			
	1988	1989	1990	1991
Training sessions attended per agent	8	15	15	15
Farmers having extension contact per agent	350	770	960	1150

e. Policy Studies

Under the program, 15 policy studies were to be undertaken to provide information an base for policy measures to be taken. These studies were expected to be coordinated by the National Centre for Development Studies (NCDS) and were mostly expected to be done by Ghanaian specialists. Some of the expected studies were:

1. technological change in Ghanaian agriculture

2. a comparative assessment of alternative extension programs implemented in Ghana

3. economic analysis of fertilizer recommendations/use

4. the relative impact of seed, fertilizer and other agronomic and farm management factors on productivity

5. the contribution of rural infrastructure to agricultural productivity and employment

6. the demand for food in Ghana

7. supply response in Ghanaian agriculture

8. consumption and employment linkages between agriculture, industry and services

9. determinants of private sector employment generation in agriculture

10. costs and returns for food production, share of returns to various factors of production, including an annual rural wage survey and

11. the need for food aid and its impact on domestic consumption practice.

Seminars and workshops were expected to be organized on these studies to share the information among government agencies, donors and others interested in agriculture and employment issues, and to inform high-level GOG decision makers. Targets for the studies were as follows: 1988 - 4; 1989 - 4; 1990 - 5; and 1991 - 6.

f. Monitoring and Evaluation

The Ministry of Finance and Economic Planning and Ministry of Food and Agriculture were expected to establish an APPP monitoring unit to undertake monitoring during implementation. Active dialogue between GOG and USAID on all aspects of the program was also expected to take place during program implementation.

Two evaluations were expected during the three-year life of the program. The first, at mid-term, was expected about 18 months after program start-up around March 1990. The second evaluation was expected one or two months before the end of the program - August 1991. Since most of the program impact was not expected to be realized until at least a few years after APPP ends, a third evaluation was slated for 4 years after program completion, in 1995.

The logical framework for the program is shown in Annex E.

1.3 THE GHANA FY 1991 FOOD FOR DEVELOPMENT PROGRAM (FDP) (ONE-YEAR PL-480 TITLE III)

The one-year Title III program was a bridge program between the APPP efforts and the multiyear FY 1992-1994 Title III program. Under the program USAID donated 46,500mt of wheat, worth US$6.0 million, to the Government of Ghana in 1991/92.

This initial FDP was designed to build upon the results of the APPP by supporting additional policy reforms essential to privatizing agricultural input supply markets, particularly the market for fertilizer. Achievement of the FDP objective was expected to contribute to the development of an efficient and broad-based agricultural input marketing system in Ghana.

The specific objectives of the program were:

* to formalize the GOG commitment to privatize the fertilizer and seed industries;

* to develop a plan to dispose of all GOG stocks of fertilizer; and

* to initiate actions in the implementation of that plan.

It was expected that, by the end of the project, the fertilizer marketing system would be commercially viable, operating at market-based prices, and reaching an expanded number of farmers. This would lead to greater productivity in agricultural production and expanded agricultural exports.

Under the program, the GOG was required to use local currency proceeds from the sale of the wheat to provide general support to the budgets of the Ministry of Food and Agriculture (MOFA) as it continued its program to privatize the seed and fertilizer industries, and the Department of Feeder Roads (DFR) - in the Ministry of Roads and Highways - as it carried out the World Bank assisted National Feeder Road Rehabilitation and Maintenance Project.

Even though the initial value of the wheat was estimated at US$ 6 million, actual sales in cedis when reconverted into dollars gave a value of US$ 8.4 m. This amount was programmed for various activities as shown in table 1. The table also shows the amount of the fund that had been disbursed as at the end of December, 1992.

Table 1; Activities Programmed under the single year PL 480 Title III.

Nature of Activity	Amount Programmed ($)	Amount Disbursed ($)
Road Construction	4,500,000	1,790,000
Crop Service	1,000,000	770,000
Non-governmental Organizations	840,000	-
Economic Policy Institute	2,000,000	-
Monitoring, Evaluation and Audits	50,000	-
Total	8,390,000	2,560,000

Source: USAID, PL-480 Title III Audit Report

Thus the single year PL 480 and the APPP had a unity of purpose and are hence evaluated together in this study. Where appropriate, however, distinction is made between the two.

1.4 THE SCOPE AND PURPOSE OF THE EVALUATION

By the end of the 1991 fiscal year, USAID had disbursed the full amount of US$20 million for APPP after GOG conformed to the program conditionalities. Furthermore, as required under the terms of the program, a mid-term evaluation of the APPP was carried out in 1991. The mid-term evaluation addressed many issues and made relevant observations and recommendations to help address implementation problems and to provide the basis for program adjustments.

Further to APPP funding was the one year title III program which was designed to formalize and reinforce the activities initiated under APPP.

This evaluation is in line with the program requirements and is expected to:

- examine the accomplishments and impacts of both the APPP and the single year PL-480 title III program

- identify constraints and lessons learned and make recommendations for USAID future interventions

- assess the extent to which the recommendations of the mid-term evaluation were implemented and the degree to which they modified project accomplishment

- measure the extent to which gender issues were incorporated into the projects (ie. the extent to which women were involved in each phase of the project cycle; how projects affected the lives and conditions of developing country women; the extent to which integrating women in aid activities increased the sustainability of results; and the availability of gender disaggregated data.

The terms of reference for this evaluation is attached (Annex F).

1.5 METHODOLOGY

The study was carried out through consultation of many relevant documents, governmental agencies, donor agencies and private organizations related to the program. Field interviews were also conducted with farmers and other groups affected by the program.

Among the documents used for the study are the APPP Program Assistance Approval Document (PAAD), APPP mid-term evaluation report, APPP impact study reports, APPP financial audit report, PL 480 title III agreement (1st year), USAID files on APPP and PL 480 title III as well as files and reports on the two programs in the Ministry of Finance and Economic Planning were consulted. In addition, reports in the Ministry of Agriculture and the Department

of Feeder Roads provided important data sources for the evaluation. (Annex H)

Consultation of officials at USAID and the ministries as well as senior personnel of FASCOMs in the Volta and Upper Regions and Ghana National Procurement Agency (GNPA), provided the needed perspective and vital information for the study. A list of personnel contacted during the study is attached. (Annex G)

Discussions were also held with fertilizer importers (WIENCO) and dealers in Volta, Greater Accra, Ashanti and Northern Regions. Field interviews were conducted with farmers and other individuals along some of the improved road corridors in the Brong Ahafo, Ashanti and Volta regions.

The composition of PAB Consult evaluation team is as follows:

CORE TEAM

1.	Dr. Ramatu Mahama Al-Hassan	-	Team Leader WID/Agricultural Economist
2.	Dr. Victor Kofi Ocran	-	Seed Industry Specialist
3.	Dr. Kwame Prakah-Asante	-	Agricultural Economist
4.	Mr. E.S. Otinkorang	-	Fertilizer Industry Specialist
5.	Mr. Lousi-Kwachie	-	Civil Engineer

BACKSTOPPING

1.	Dr. John Nene Osom Azu	-	Agronomist
2.	Ms. Pamela Okyere	-	WID
3.	Mr. Elijah Yaw Danso	-	Development & Management Specialist
4.	Mr. Andrews Kwasi Aforo	-	Socio-Economist

1.6 FACTORS AFFECTING THE EVALUATION

Many parallel programs were on-going within the departments that implemented APPP and PL 480 title III and in many instances reports from the field did not distinguish between such programs. Program specific data were therefore, in many instances, not available. Furthermore, reporting especially on the single year PL 480 title III was quite inadequate and many expected reports were still not available. Much more time than expected was, therefore, required for information retrieval. In general the time allotted for the study was considered to be short.

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2.0 FINDINGS AND RECOMMENDATIONS

2.1 PROGRAM IMPLEMENTATION

2.1.1 APPP

a. Program conditionalities and release of funds.

The conditionalities attached to the APPP was for the GOG to undertake to:

1. remove subsidies on fertilizer and to privatize fertilizer supply and distribution

2. privatize/restructure the seed industry in Ghana.

These conditionalities were in line with policy reforms already initiated under the Economic Recovery Program (ERP) and agreed upon by GOG and World Bank under the Agricultural Services Rehabilitation Project (ASRP) in June 1987.

b. Findings

1. All the conditionalities were fulfilled and USAID released the three tranches of US$5.94m, $8.61m and $5.45m for the first second and third tranches respectively, on schedule.

2. The dollar funds released by USAID was auctioned through the Bank of Ghana to generate the local currency (cedis). The auction system and accounts management by the Ministry of Finance and Economic Planning (MFEP) were noted to be transparent and effective.

2.1.2 The Ghana FY 1991 Food for development Program (FDP) (one year PL-480 title III

The one-year PL-480 title III program was a bridge program between APPP efforts and the multiyear FY 1992 -1994 title III program. Under the program USAID donated 46,500 mt of wheat to the GOG in 1991/92 to be sold to help build upon the results of APPP by supporting additional policy reforms essential to privatizing agricultural input supply markets, particularly the market for fertilizer.

a. Findings

1. Though the wheat donated was valued at US$6.0 million, actual sale of the product yielded the cedi value which when converted into dollars amounted US$ 8.4 m. Thus, additional funds of US$ 2.4 m were generated.

2. The processes involved in procuring and selling of wheat, (ie. contracting, shipping handling, storage and marketing, and payment of proceeds into Government treasury for disbursement) were observed to be very cumbersome.

3. Review of correspondence involving wheat imported under the single year PL-480 title III program underscored the myriad difficulties involved in using food aid to generate local currency for program funding. There were delays at all stages which resulted in misunderstanding and ill-feelings in many agencies. The delays also resulted in increased costs and disruption of commercial imports planning by GNPA. The observations demonstrate how costly and difficult it is to use food as a tool for generating local currency.

4. In contrast to wheat aid funding, direct exchange of dollars at the Bank of Ghana foreign exchange auction is fast, efficient, less cumbersome and more cost effective and makes it an attractive option for funding programs. However, there is a still a need for rice and wheat supply to fulfil the national food requirements.

5. As at the time of this evaluation, two years after the title III program was initiated, two of the four development activities had not commenced and progress in the remaining two could not be readily determined because of lack of quantifiable progress indicators, workplans and time frames.

6. Financial reports showed that $2.6 million of the earmarked amount of $8.4 million had been disbursed. Delays in implementing the above development activities were attributed to a slow-moving GOG bureaucracy and lack of agreement between A.I.D. and the GOG officials on various implementation matters.

7. Moreover, conditions necessary for release of the local currency funds were not fulfilled by the GOG implementing organizations. For example, the Department of Feeder Roads and the Ministry of Agriculture did not submit the required financial and progress reports to permit release of the funds earmarked for the road construction and crop service activities.

8. In another case, the GOG and USAID/Ghana were initially unable to agree on the methods of implementing the non-governmental organization (NGOs) activities. Subsequently, they agreed that the GOG would request the NGOs to submit proposals. However, none had been received as of August 1993.

9. Preliminary studies for establishing an Economic Policy Institute in Ghana had been completed but further progress has been hampered because of lack of agreement among the donor community on how the Institute is to be financed.

10. The planned program activities have made marginal progress and they have failed to generate the benefits that could accrue from an infusion of approximately $8.4 million in PL 480 Title III local currency funds into the country's treasury.

b. Recommendation

It is recommended that a critical review of the cost effectiveness of the use of food aid to generate project funds be undertaken. Efforts must be intenfied to reduce the administrative bottlenecks in procuring, shipping and selling of wheat and rice since GOG still needs these commodities to ensure food security.

2.2 PRIVATIZATION OF FERTILIZER SUPPLY AND DISTRIBUTION

Among the major reforms to be undertaken by the GOG under the Agricultural Services Rehabilitation Project (ASRP) was privatization of fertilizer supply and distribution. The process involved (a) gradual reduction of subsidies starting with 30% reduction in the 1988 cropping season, to 100% elimination of fertilizer subsidies in 1990 and subsequent years, and (b) a program of privatization of fertilizer supply and distribution. This privatization process was supported by USAID under the APPP in 1988-1991 and the single year PL 480 title III.

The conditionalities built into the program design indicating specific actions and target dates for the release of funds in three tranches were met and hence all the funds were released. The last tranche was released in November 1990.

As a result of the program:

1. fertilizer subsidies have been eliminated completely and there is no sale by GOG of subsidized fertilizers since the 1990 cropping year;

2. private sector companies are importing fertilizers that have been approved by the MOFA

3. the private sector is now wholesaling and retailing fertilizers and the GOG is not involved in this process.

Since 1990, when the MOFA last imported fertilizers into the country, four private companies have imported a total of 36 metric tons. There are presently 89 registered fertilizer dealers/wholesalers who are active in all regions of the country

although initially about 866 were registered. Those who are non-performing name the lack of capital as the main reason for their dormancy.

The policy reforms culminating in the removal of subsidies and privatization of importation, wholesaling and retailing resulted in these major accomplishments, there still remain however problems which militate against the consolidation of these gains. These problems and suggested solutions are described below as findings and recommendations. (details in Annex A.)

a. Findings

1. Declining Fertilizer use:

Evidence from the field indicates that fertilizer use is still on the decline. Due to the increased prices of the product resulting from the removal of subsidies and the depreciation of the cedi, fertilizer prices have increased over 100% since 1988 and this has resulted in decrease in fertilizer use. Constrained by cash to purchase the product, many farmers have either reduced their application rates or ceased using fertilizer completely. This is not encouraging for privatizing the fertilizer industry.

2. Disproportionate product/fertilizer price trends:

The increase in fertilizer prices has not been matched with commensurate increases in producer prices of crops. For instance while the price of 15-15-15 and Ammonium Sulphate increased by 102.5% from 1988 to 1992, price of maize only increased by 37.5%. This serves as a disincentive to farmers in using fertilizer.

3. Fertilizer supply:

There is presently enough fertilizer in the country to meet farmers' needs. An estimated stock of about 34,500mt of fertilizer (excluding government's security stock) was available during the 1992 cropping season. However, it is considered premature to predict the effects of the privatization program on the supply of fertilizer, as present stocks also include carry-overs from government stock in the past.

4. Private fertilizer importation:

Private participation in fertilizer imports is limited due to the present decline in fertilizer use. There are presently 4 private enterprises importing fertilizer, but 70% of all the imports so far has been done by only one company. Private importation is faced with the problem inadequate capital, increasing prices and fluctuation in fertilizer demand, among others.

5. Wholesaling and retailing of fertilizer:

An initial enthusiasm that met the initiation of the privatization program saw 866 dealers/wholesalers registering. However, by the time of the mid-term evaluation (September, 1990), there were only 50 active dealers. The number has increased to 89 since then.

6. Action on mid-term evaluation recommendations:

Various measures were taken following the mid-term evaluation to address the problems of implementation of APPP.

a. GOG has completely decontrolled fertilizer prices allowing the private sector to determine their own prices. Importers have zoned the country into 3 and fixed the prices according to areas - such that the further away an area is from the point of entry the higher the price of the product. Discount rates have now been increased to ¢800/bag for purchases of less than 500 bags and ¢1000/bag for purchases of 500 bags and above. However, the discount rates are considered by dealers as not being enough to cover loading and other handling charges.

b. The Department of Agricultural Extension Services has since 1991 stopped sales of fertilizer to farmers.

c. A fertilizer dealers' training was organized at the beginning of 1993 for 200 dealers/wholesalers by the Department of Crop Services (DCS). Another training is scheduled for the end of 1993 following recommendations from participants at first training session.

d. Fertilizer donations to GOG has been disposed of through direct sale to the private sector. The auctioning of these was however quite slow due to liquidity problems of dealers. Moreover, a balance of 1.0 million ECUs from the EEC, to be utilized for fertilizer importation still remains. Extension of this facility to the private importers is being negotiated with some banks by DCS.

e. The role of the FASCOMs in the fertilizer industry is still shrouded in uncertainty. A restructuring exercise is currently in progress in the FASCOMs but it is still not very clear what role they are playing now or would play in the future.

7. Women participation in the fertilizer industry:
The program did not make any specific provision for women's participation in the privatization program. Only 2 women are presently actively involved as fertilizer dealers. However, at the local level, women are engaged in retailing of fertilizer in small quantities to farmers who cannot afford to buy the product often bagged in 50kg.

b. Recommendations

1. A vigorous mass media promotion program, informing farmers of the value of fertilizer usage is required.

2. The producer prices of farm produce, particularly the cereals could be improved if good marketing infrastructure is established in the rural areas. Construction of low cost on-farm storage facilities should be promoted among farmers. This would help reduce glut during the harvesting season.

3. As demonstrated in many developed and developing countries, the private sector is capable of making an important contribution to agricultural extension. As the take-off stage of privatization progresses, it is expected that the dealers would be more involved in promoting fertilizer use among farmers.

   It is, therefore, recommended that close contact be maintained between extension personnel and fertilizer dealers. This will ensure that activities at the field level are adequately coordinated to avoid overlapping or conflicting advice. As with other commodities, fertilizer and other related input dealers would be consulted by their customers on the properties and proper use of the products. This makes the training of dealers, particularly retailers, very important.

   Regular seminars, joint training and collaboration in the preparation of extension materials should be initiated. The fertilizer dealer training held this year should be regularized.

4. Information dissemination: The vigor of the private sector involvement requires proper information flow. It is recommended that the information unit within the DCS expands in terms of distribution to the regions and districts, and equipment in order to provide information on prices, imports, fertilizer stocks, seed production, etc. to both the government and the private sectors. A bulletin containing information on these variables should be regularly published.

2.3 SEED INDUSTRY RESTRUCTURING/REVITALIZATION AND PRIVATIZATION

The seed industry in Ghana has since its inception operated as a public sector institution. Since 1979, the principal player in the production and marketing of improved seed was the Ghana Seed Company (GSC), which controlled a major share of the production and marketing in the country.

Before the inception of the APPP and the single year PL 480 title III program, the Ghana Seed Company was not very effective and the seed industry was in disarray and collapsing. There was a felt need at that time to embark on a restructuring exercise to restore the production capacity and to put the production and marketing of improved certified seeds into the domain of the private sector.

One of the means of achieving the APPP and PL 480 title II program goal of increased productivity in food crop production, was to increase the supply and use of improved seeds through the revitalization of the seed industry, (PAAD). The strategy adopted was to support the policy reform effort under the Economic Recovery Program (ERP) and to reinforce GOG commitment under the World Bank's ASRP which called for the rehabilitation and strengthening of the Ghana Seed Company.

Funds were released under the APPP and single year PL 480 title III program to implement the restructuring and privatization of the seed industry. The parastatal GSC was closed down in December 1989 as a result of the GOG's plan of restructuring the seed industry. Although this action resulted in breakdown of the established seed industry, it also demonstrated beyond doubt the GOG's commitment to restructure the seed industry and to open the way for private sector participation in the seed production and marketing activities.

Various actions were set into motion following the closure of the GSC. The changes that have taken place since that time to date and what needs to be done to run an efficient privatized seed industry are presented below as findings and recommendations. Details of the restructuring and privatization are found in Annex B.

a. Findings

1. The GSC has been disbanded, however the GLDB has been assigned the role of producing foundation seed from breeder seeds produced by the CRI. Funding under APPP and single year PL 480 title was used to initiate the privatization effort from 1989 to 1991 to several profound effects.

2. A National Seed Service and National Seed Committee have been formed but these are operating without legal backing as the National Seed Law is still awaiting parliamentary approval.

3. Anyone whose operation and product is certified by the GSIU is free to produce seed and MOFA and SG 2000 are actively encouraging individual growers to take advantage of this opening.

4. All growers buy their foundation seed from GLDB. The vast majority of growers are operating on a very small scale (10-20 ton output) and their numbers have been increasing.

5. Many new entrants of the seed growing industry know what they are about because they have been collaborators of SG the 2000 extension program. These farmers have been offered advice and training in seed production and many provided with small scale equipment or loans for such including shellers, tarpaulins, sieves and drying cribs.

6. A total of about 80 growers produced about 403 tons of maize seed in 1992. This is only 26% of the program target, but it is hoped that the increasing numbers of growers entering the industry annually would help meet the demand for improved seed in the country.

7. The MOFA and SG 2000 have worked together to provide packaging and labeling material and maize seed is now available in bags ranging from 50kg down to 1kg. The smaller sizes are made of clear plastic which helps the small scale purchasers, to make a choice.

8. The current seed marketing situation is evolving slowly and several marketing arrangements are being established. They range from farmers giving their seeds to market women to market locally, to commercial companies contracting with growers and agrochemical dealers who are now selling seeds produced by their clients. These markets are not certain enough and need to be developed and strengthened.

9. Although three regional seed growers associations have been formed they are still struggling to be functionally effective to address the problems facing the industry.

10. MOFA still takes the responsibility for organizing training for seed growers. It is also engaged in marketing by undertaking to advertise on behalf of growers.

11. The future of the seed processing aspect of the industry is not clear. The former GSC plants are operated currently by GLDB, although the future of this arrangement is uncertain. Everything from hand-shellers and sieves to commercial equipment is currently being used, but these are given or at least subsidized to growers. It is not apparent whether growers themselves or the marketers are more likely to assume responsibility for processing. These are issues which the NSC and the SGAs should address.

b. Recommendations

1. Support for SGAs - To ensure that privatization of the seed industry takes hold, the seed growers association should be assisted to take over some of the functions presently being performed by MOFA. For instance, the association should be assisted to conduct its own training programs; the SGAs should

also be able to establish its own internal quality assurance systems and do its marketing promotion. Donor assistance to the growers in this regard will be in the right direction in promoting privatization of the seed industry.

2. Breeder seed - Crop Research Institute should be supported financially to intensify its efforts to provide breeder seed of other crops such as sorghum, millet, vegetables and yams which are already being sold commercially.

3. Foundation seed - For GLDB to survive as a support for the seed enterprise, it must rapidly diversify its operations to include the production of foundation seed materials of roots and tubers like cassava sticks, yams, sweet potato and plantain suckers.

4. Training - Training in seed production and seed technology for both seeds men and seed producers must be a continuous activity. These training sessions should aim at improving the growers' yield per unit area.

5. Public awareness - A brochure on the Ghana Seed Industry starting from 1990 should be published to highlight the achievements made so far, the constraints faced and the future outlook. Public awareness about what goes on in the seed industry should be sustained.

6. Involvement of NGOs - Involvement of NGOs in the seed industry should be intensified. The SG 2000 program already has vast experience and knowledge in both community and formal seed activities in Ghana, and is prepared to share such knowledge with other NGOs.
NGO support should be geared towards encouraging private grower participation and the development of effective distribution and marketing systems.

7. Women seed growers - The number of women registered as seed growers is very small. The GSIU and Women in Agricultural Development (WIAD) should encourage the participation of more women seed growers in the seed program.

8. Further Study - It was good to have encouraged the growth of a range of seed growing and marketing arrangement but at present no major entrepreneur has emerged as a winner. There needs to be a study and a decision regarding the most viable options in seed processing, storage and marketing to ensure the establishment of a strong seed industry. Such a study could be given donor support.

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2.4 RURAL INFRASTRUCTURE

Ghana's deteriorated rural road network has been pinpointed as a primary cause of lagging agricultural production. This poor state of the roads contributes to the increased costs of agricultural inputs and lack of access to output markets. Alleviation of infrastructural constraints to reduce input and marketing costs through the improvement of feeder roads was considered a necessity if the purpose of APPP and single year 480 title III program was to be achieved. APPP funding to the tune of ¢2920 million and PL 480 title III funding of ¢1700 million were allocated to provide budgetary support to the Department of Feeder Roads (DFR) to undertake the following road rehabilitation activities which were proposed in the PAAD.

a. grading and reshaping of 700km roads
b. full regravelling of 155km roads
c. spot improvement of 35km roads and
d. installation of drainage structures and culverts.

Funding from the PL 480 title III program was to be used also for construction of school and procurement of equipment for labour based contractors.

The Department of Feeder Roads, created in 1981 under the Ministry of Roads and Highways, is responsible for the management of about 22,000km of feeder road network in Ghana is the implementing GOG agency.

The DFR strategy of implementing the program is to have rehabilitation and improvement work performed through contracting while reshaping was to be done through contracting and force account. Routine maintenance is expected to be performed almost entirely by the participating communities. For this reason, village, and district level committees have been established to perform these tasks under the guidance of DFR foremen.

A volunteer from the village is trained in road maintenance and a set of hand tools is provided for the village. District level committee of GOG officials and prominent citizens help to organize maintenance work by village communities.

The DFR is currently employing two methods of road construction, ie. capital intensive and labour intensive methods. The labour intensive approach which was found to be 15% cheaper than the capital intensive method also had the added advantage of providing rural employment.
The labour intensive method was implemented by providing a six-month training course to selected contractors and their employees under a DFR program. Upon completion the contractors were given a bank loan of $160,000, repayable in four years to purchase equipment.

The evaluation team visited a sample of feeder roads. Discussions were held with DFR staff, contractors and groups of beneficiaries in the villages. A summary of various observations and actions which need to be taken to sustain the program is presented below as findings and recommendations. A detailed assessment is presented in Annex C.

a. Findings/Lessons Learned

1. Along road corridors on which spot improvements had been undertaken by construction of either culverts, fords, or scour checks, the consensus of the ultimate beneficiaries i.e. villagers was that even though there has been some improvement in the level of accessibility, the expectation was that further improvement works involving earth or gravel works, reshaping and compaction would be undertaken to maximize the benefits from the investments in the other major remedial works.

2. The Logba Alakpati-Logba Tota road has been rehabilitated under APPP but had not attracted the expected vehicular traffic since November 1991 because of the steepness of a portion of the road which gradient is estimated to be 14% beyond Klikpo. Such gradients were also observed on some portions of the Kyekyewere-Anyinasu-Kofiase road in Ashanti region. The situation is worse during the rainy seasons and farmers are compelled to headload their farm produce.

   To make such portions of roads all weather roads, the DFR has provided funds from the Road funds to resurface these portions with bitumen and granite chippings this year.

3. There was fierce competition among contractors for APPP projects because of availability of funds at all times to pay for work done. Consequently over 80% of all awarded contracts were completed on schedule and the workmanship in general was very high.

4. Contractors engaged on APPP were extremely satisfied with the prompt payment at DFR headquarters (maximum 2 days) after their certificates had been approved at the regional and district levels.

5. The DFR does not have a soil laboratory of their own in any part of the country for quality control. DFR uses the facilities of GHA in the regions. This type of arrangement impedes progress of contractors' work and might result in delay of projects execution.

6. Funds provided in GOG budget as a line item to DFR for feeder roads maintenance are inadequate. Besides, they are not released on time. For example, only ¢ 200 million was

allocated for maintenance in 1992; and only ¢ 300 million out of the ¢ 1.2 billion budgeted for 1993 had been released and this was done at the end of July 1993.

7. Capital intensive contractors were engaged for the rehabilitation of APPP roads. As a result women participation as laborers was very limited.

8. Increase in farm size was not immediately evident in the two impact studies sponsored by DFR in 1992. Multi-year impact studies for the medium and long-term could verify this.

9. Top soil replacement in abandoned gravel pits was not done by contractors, thereby posing environmental degradation problems.

b. Recommendations

A. DFR Organization and Management

1. The Institutional capacity of DFR including the proposed GOG decentralization policy is of a vital importance to the success of any future USAID sponsored APPP. Arrangement for adequate salary, housing etc. should be made for DFR staff to enable recruitment and retention of skilled staff.

2. It is recommended that DFR becomes a semi-autonomous authority on a par as GHA and the current World Bank's Organization and Management Study should address the issue seriously.

3. Systematic training of all middle-level engineers engineering technicians, quantity surveyors, and other supporting technical staff should be provided within and outside the country.

4. Well equipped central soil laboratories (at least two) should be provided in the country for effective quality control of all works under DFR. In addition to the central laboratories, all the regions should be provided with mobile laboratory for quality control purposes.

B. Accomplishments

Due to poor performance of some contractors on some projects in Volta Region APPP could not be completed on schedule. It is recommended that DFR should formulate an efficient selection criteria to ensure that efficient and effective contractors are selected for future programs.

C. Construction Strategy

No labor-intensive contractor participated in APPP. However with the training and equipping of 12 Labor Intensive contractors under FY PL 480 title III, it is recommended that DFR should award contracts to such contractors to enable them pay back their loans on time. Terms of reference for consultancy design services should, if necessary be changed to reflect this. Labor Intensive contractors are more likely to engage more laborers including women (about 30% of the labor force) from the villages along the corridor of the road to be rehabilitated and maintained. Thus the villagers would earn extra income to either increase their farm sizes or buy improved seed or fertilizer to increase production.

It is worthwhile to note that applying labor-base technology for rehabilitation and maintenance of feeder roads using the private sector in Ghana has resulted not only in a 50 % reduction in foreign exchange cost to the country but has also provided gainful employment to the under-employed rural labor force. (DFR December, 1991).

D. Sustainability of Maintenance

Improved APPP roads without adequate maintenance is counter productive. GOG is commended for providing a line item in its budget since 1992 for the purpose. It is recommended that the amount voted should be increased substantially and the releases should be made on time to have the desired effect.

DFR in the regions have drawn up comprehensive programs for routine maintenance of all improved roads in their respective regions, however, they lack logistic support. It is recommended that the GOG and the communities should lend the necessary support to sustain the laudable objectives of APPP. It is also recommended that the periodic maintenance of the improved roads should be on contract for both Capital Intensive and Labor Intensive contractors on competitive basis.

E. Co-ordination with GOG Agencies

The DFR should still improve the co-ordination among sister agencies connected with the road rehabilitation and maintenance program to reap the full benefits of assistance from donors.

F. Donor Co-ordination

The Program Steering Committee of DFR and donor representative in Ghana which has been set up should be strengthened. The committee should meet biannually to monitor and solve

implementation problems. It is recommended that the steering committee should arrange an annual joint donor review meeting co-ordinated with yearly supervision mission. The steering committee should also stage mid-year review meetings. The import of this recommendation is that all donors to DFR should have closer coordination and develop a common strategy for more effectiveness.

G. Environmental Protection

In order to limit the environmental damage due to gravel mining for road construction projects, it is recommended that top soil replacement in abandoned gravel pits along the roads should be made an explicit item in the Bill of Quantities for all works.

2.5 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 infrastructural constraints" (PAAD). On the basis of this strategy, funding was provided under APPP to give selective support to policy changes and activities to deal with the constraints facing the country's agriculture. Policies and activities dealt with were a) the privatization of fertilizer imports and distribution, revitalization of the seed industry with increased private sector involvement, strengthening of the extension services, rehabilitation of feeder roads and support to policy studies.

Although fertilizers and improved seeds were considered as primary ingredients of high productivity, the inability of the extension service to reach farmers effectively with the knowledge and skills involving the effective use of these inputs was a more serious problem. The poorly trained extension staff and lack of mobility to reach a large number of farmers constituted a major constraint that faced the extension service.

Budgetary constraints faced by the GOG virtually precluded a reasonable operating cost support to the Extension Service for training and transportation since all the money went into payment of salaries. There was, therefore, the need to fund the extension services to play a meaningful role in the development of Ghana's agriculture.

The APPP program provided funds to the extension services for the following activities:

1. increased mobility
2. increased training to improve the technical skills of extension agents and
3. improved research - extension linkages

Summary of observations relating to the implementation component are presented below as findings and recommendations. A detailed assessment of the extension component is presented in Annex D.

a. Findings

1. Studies have shown that before the onset of the deterioration that occurred in the DAES, the extension officer - farmer ratio was about 1:2500. However, due to inadequate funding, no funds were allocated for purchase of vehicles, bicycles and motorcycles and other logistic support for frontline staff and their supervisors.

   This greatly reduced the mobility and logistics supplies they needed to do their work efficiently. During this period, prior to the support from the APPP, it was estimated that only 25% of farmers were being visited by extension staff, thus the actual extension officer-farmer ratio in practice was 1:624.

   It is important to note that during the period of implementation of the APPP, there was no significant increase in staff number. However, the funding from APPP resulted in greater mobility, hence frequent visits and wider coverage of the farming communities. It is estimated by the DAES that the coverage of the farming community has increased to about 65%. The extension officer/farmer ratio, therefore, now stands at about 1:1625. This present figure is higher than the target of 1:1150 set in the PAAD.

2. The training programs conducted under this APPP covered a wide range of crops grown in all parts of the country (maize, rice, cowpea and roots and tubers) and the subject matter encompassed production to processing handling and grading. The frequent training sessions organized for all grades of extension staff have resulted in increased know-how. This has enhanced their role as disseminators of improved extension information to farmers. Interviews with extension officers indicate that they have now acquired a good measure of confidence and the perception farmers now have of them is better than it used to be.

3. Apart from supporting research/extension linkages financially, the workshops and seminars organized under the training programs served to establish a close relationship between the extension department officers and the research institutions which were involved in work on the different crops and agricultural systems. Such interaction that occurred during training programs served to sensitize each group to the needs of the other and to enhance cooperative effort among them. It is believed that the frequent contacts would be the starting point to enhance the linkages.

4. There was a delay in release of funds and that was a major constraint in completing some activities on schedule especially the training component of the DAES activities.

5. During the period of reduced GOG support in the PIP and recurrent expenditure, the APPP together with other supportive programs of extension such as Sasakawa Global 2000 and the ASRP have ensured a non-interruption in the field activities of the DAES.

6. The APPP support created the necessary impact strong enough to attract the World Bank proposed funding of a National Agricultural Extension Project for Ghana.

b. Recommendations

1. The large number of demonstration plots and on-farm fertilizer use plots on several vantage farms nation-wide, although costly, was necessary for ensuring the impact needed for widespread increase in agricultural production. However, marketing and related problems like credit unavailability that farmers still encounter have not been adequately resolved. Government needs to intensify its efforts in addressing these related issues which are important for symmetrical growth.

2. Farmers and food marketers must be helped with financial support to improve their storage facilities and to move into processing since gluts have a tendency to depress expansion of production. Donor assistance in this regard would speed up the rate of development of workable systems.

3. There still exist a weak link between the DAES and other research institutions. The DAES should link up in a jointly funded project with the Crop Research Institute and Soil Research Institute to conduct on-farm trials and demonstrations in several locations countrywide with the following objectives:

   - to extend useful crop/soil data directly to indigenous small-scale farmers through periodic field days and provision of information material.

   - to conduct field trials using new crops with export potential and import substitution possibilities with a view to introducing such crops to the country's farmers. Many of these crops are already in the country but they remain largely unknown to farmers as economic crops.

4. The DAES monitoring and evaluation capabilities need to be strengthened to ensure good and timely reporting so that problems in implementation of programs can be detected early, and solutions found to them to improve program delivery.

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2.6 PROGRAM IMPLEMENTATION AND MONITORING

The monitoring plan of APPP included:

- active dialogue between the USAID and the GOG on all aspects of the program
- frequent meetings at the technical level between personnel of USAID, MFEP, and implementing agencies
- quarterly and annual reports to MFEP and USAID by implementing agencies.
- periodic field trips by USAID and MFEP

An APPP monitoring unit was set up within MFEP and PPME of Ministry of Food and Agriculture.

a. Findings

1. Program monitoring and reporting was recognized as important aspects of the program implementation by both USAID and the implementing agencies. Nevertheless, reporting was unsatisfactory and monitoring reports focused more on reporting processes than on impacts.

2. Field staff of implementing agencies were involved in the implementation of other parallel programs and did not usually differentiate between programs in their reporting.

b. Recommendations

1. Experience from APPP indicate that program designs need to incorporate a detailed Monitoring and Evaluation (M & E) framework in project document. M & E should not be an after-thought but an integral part.

2. M & E function should be assigned to one identifiable unit instead of spliting functions.

3. Any M & E unit set up should be strengthened through training and supply of equipment to effectively carry out its functions.

2.7 GENDER ISSUES

One of the objectives of the APPP and single year PL 480 title III program final evaluation was for the team to measure the extent to which gender issues were incorporated into the program design, appraisal and implementation. Gender concerns were not addressed by APPP mid-term evaluation, however an attempt has been made in this evaluation to examine:

1. the involvement of women in project cycle
2. how programs affected women
3. how women affected the program, and
4. the availability of gender disaggregated data.

The APPP and single year PL 480 are specified as separate program interventions yet the two are inseparable as they had a common goal of promoting agricultural productivity. In fact the purpose of the single year PL 480 facility was to provide funding to build upon the results of the APPP by supporting additional policy reforms essential to privatization of the agricultural input markets particularly the market for fertilizer, and feeder road rehabilitation. Observations on gender sensitivity in these programs are presented below.

a. Findings

Gender sensitivity and program design and appraisal

The design of the APPP as presented in the program assistance approval document (PAAD), does not indicate any gender specific considerations for program activities and impact. As such, there has not been any gender disagregated data either as baseline information, or for routine monitoring of program activities. The dearth of gender specific information on program activities at both baseline and implementation stages makes evaluation of the differential impacts of the APPP and PL 480 on men and women difficult.

The sexual division of labour in traditional agricultural production systems is such that much of women's work is of subsistence nature (reproductive, household maintenance, food crop production) and for this reason women have generally been ignored by planners (Urasa Irene, 1990). The active participation of women in the development process, therefore, requires a conscious targeting of women from program design through implementation and monitoring to evaluation.

Since program design did not have any gender considerations, factors concerning women would have been overlooked at the appraisal stage. For example the differences in roles between men and women, in a male dominated society, requires targeting opportunities and limitations. For example, the privatization of fertilizer should have included vigorous promotion for the participation of women, to exploit their industry in trading.

Nevertheless, women would have been affected by various components of the program either as direct agents of implementation, or beneficiaries.

Women in program implementation

The involvement of women in the implementation of the APPP could have been determined by the traditional roles of women within the agricultural sector as farmers, processors and distributors. As agents, women would have gained employment (and benefitted from related training) as labour in the feeder road construction projects, as distributors of fertilizer and seed, or as seed growers.

For example studies on the effects of a Rural Access Road Project (RARP) in Kenya indicated that the percentage of women working on the road construction increased from under 8% to 16%, and that women's participation was greatest in areas where labour was generally scarce. The more active role of women was the result of a more general acceptance of the program by women and of women by the program. (Roberts, John E.; Kenya Rural Roads 1982: P.14)

The involvement of women in fertilizer distribution should in fact be a logical expectation that women traders may incorporate fertilizer sales in their output marketing activities. The industry of Ghanaian women in trade of all types of products is well known.

The APPP may have failed to exploit these traditional roles of women to involve them in the program activities. There are very few active women fertilizer dealers. For example, out of 200 dealers trained in 1993, only 2 were women.

However, observations in Kasoa (Central region) and Tamale (Northern region) markets indicate increasing participation of women in fertilizer retail trade. Women are retailing fertilizer in 2-5 kg lots. The reasons for this could be the need for a high turn-over and lack of capital to engage in bulk trade. More important, these women have identified a need for smaller purchases by farmers.

Unfortunately, their activities may not be recognized by the institutions responsible for implementing the fertilizer privatization program, who look at fertilizer sales in terms of 50kg bags. Specifically, these women who re-parcel fertilizer for sale need education on the proper handling of the input for safety, and appropriate storage to maintain product quality.

The participation of women in the APPP as seed growers was low. The feeder road maintenance component of the APPP initially was based on capital intensive technology. A realization that labour intensive technology could result in a 15% reduction in costs has led to proposals to adopt the labour intensive technology.

The omission of consideration of women's interest in the feeder road component of the APPP was because, a) employment generation was not a perceived goal for this component (as reflected in the initial choice of technology); b) stereotyped perception that construction work is too heavy and strenuous for women (Kudat Ayse; Participation of women in Rural roads in Sub-saharan Africa; EDI 1990) may have prevailed.

The shift from capital intensive technology to labour intensive one should be an opportunity to increase employment for both men and women. Already women are employed in the performance of light duty tasks such as spreading of gravel.

The direct inputs of the extension component was to provide support to the Department of Extension Services to improve delivery of the extension service through training and better logistics. Again there is no gender disagregated data on the benefits, especially of training. The existence of a Women in Agricultural Development Division (WIAD) within the Extension Services Department has made possible, specific allocation of APPP funds for women's activities in this unit. An amount of 1,922,000 cedis was allocated to WIAD for the purchase of food processing, preservation and test laboratory equipment. Forty-five and fifty-two women extension staff were trained in 1990 and 1991 respectively in activities of the division. The division has model homes in Bonwire (Ashanti region), Nsutam (Eastern region) and Nantong (Northern region).

Since the general extension service also employed women extension staff, it is expected that some more women would have benefitted from training within the department. Data on numbers of trainees is not disagregated to give the extent of participation of women in the training programs.

Impacts of APPP

The benefits expected from the APPP is improvement in crop productivity through better access to fertilizer, improved seed, information and availability of goods and services in general. The APPP is thus expected to increase farm income through increased marketed production. Improvements in roads would reduce costs of input and output marketing. Employment is also expected to increase through marketing or processing of increased agricultural output. These benefits are the long-term impacts, the full effects of which may not be realized until 3-5 years after conclusion of the program.

The following lists the expected impacts of better rural roads and productivity improvements on women.

Road improvements and women

1. Better access to market and reduced headloading (generally a women's activity) if access to means of transportation improves with the state of the road. Therefore, possible increase in volume of trade and time savings for other activities.

2. Easier access to services especially health centres. It should be noted that women are responsible for reproductive and maintenance tasks and these involve keeping the household healthy.

3. Better access to or availability of consumer goods.

Productivity improvement and women

Higher productivity increases marketed surplus and therefore opportunity for expanded crop marketing in which women participation is high. There is also employment generation from forward linkage through higher level of crop processing.

Higher level of production may create a greater burden on women's labour on the farm. Since income generated on family farms is often not under the control of women, they often engage in non-farm economic activities to meet their cash needs. Any additional labour required on the farm could deprive them of this independent source of income.

b. Recommendations

Recent estimates of female participation in the agricultural sector gives a country estimate of over 50%. (GOG, UNICEF 1991) and quoted in E.T. Jackson and Associates Ltd. Ottawa, G.A.S Development Associates Limited Accra, Gender and Village Development in Northern region, Ghana. Therefore, women stand to benefit from productivity enhancement in the agricultural sector. Yet, because of differences in roles of men and women in agriculture, the benefits of the APPP and single year PL 480 interventions may not have been equitably distributed.

The following recommendations are to ensure a balanced flow of benefits between men and women, of future USAID programs. A framework is provided for the incorporation of gender/women specific issues in program design and implementation.

Framework for incorporation of women's issues

1. Collection and/or analysis of background data to determine how women can be affected by proposed program or project. This requires identification of present roles and needs, and the extent to which roles can be enhanced or accommodated in the

proposed program, for example women in agriculture and their needs for technology and information, or women in agricultural production and marketing and their transport needs.

2. Given the information on roles and needs of women as well as opportunities open to them, realistic objectives and targets can be set specifically for women. For example if headloading of produce by women is from farm to rural market or access road, the program cannot expect a reduction in headloading or time saved in transporting produce if there is an improvement in access road only. An integrated approach, for instance involving provision of farm vehicles, is necessary in this regard.

3. The possibility of changes in roles because of interventions requires close monitoring to ensure that intended benefits are realized. The essence of monitoring will be to enhance positive impacts (both intended and unintended) and to identify and overcome bottlenecks to participation of women in the program.

Table 2 presents a proposal for a framework of monitoring and evaluation of gender specific impacts. Examples are given for the APPP but the framework could be adopted for any program or project.

Table 2: A Framework for monitoring and evaluation of gender specific issues

Indicators	Gender specific monitoring and evaluation indicators/ques.	Sources of information
1. Increased production through use of fertilizer and improved seed	Have women gained access to fertilizer and certified seed through: - better roads - better distribution of inputs - better contacts with extension service?	Focus group interviews/meeting with women
2. Increased volume of agricultural trade	Have women saved time from transporting agric. produce through increased availability of vehicles, or influx of traders?	Focus group interviews/meeting with women
3. Increased access to consumer goods and services esp. health	What goods can now be bought locally, which hitherto, could only be obtained elsewhere. Has access to non-traditional health services improved? Are women able to describe impact? In what ways? and from what time?	Focus group interviews/meeting with women

This framework could be used to establish gender considerations during program design, monitoring and evaluation.

Meanwhile, the retailing of fertilizer in smaller quantities by women needs closer study to enhance this activity since such retailing helps to ensure greater availability of the input. Support may be given by way of information for handling the inputs. Retailing of seed may be promoted along similar lines.

2.8 OVERALL PROGRAM ACHIEVEMENT AND IMPACT

1. The most obvious achievement of the APPP is the privatization of fertilizer supply and distribution and privatization/restructuring of the seed industry.

2. In general extension services have been improved under APPP support. Improved mobility and equipment supply and increased training of extension staff has resulted in the increased contact with farmers. Farmer/extension contact is now 1,625 per worker above the program target of 1150 for 1991. Awareness of improved packages has increased. Many rural women have also increased their knowledge on nutrition by attending nutrition classes and food demonstration programs by WIAD.

3. The feeder road improvement project is showing positive results. Increased economic activity (trading) and mobility in areas of improved roads have generated increased employment. There is a decline in post-harvest losses along improved road corridors. Furthermore, there is evidence that 50% of farmers living along improved road corridors used improved maize seeds whilst the general average is 30% (Agroplan, 1991)

4. Although there was an observed decline in fertilizer use and improved seed production levels, productivity targets set for APPP have generally been achieved. It is probable that parallel programs supporting the agricultural sector (eg. SG 2000, IFAD programs in the Upper East and middle belts of Ghana), have contributed to the achievement of these targets.

A summary of the assessment of program performance on the basis of the logical framework targets and indicators are summarized in the following charts. (Table 3)

a. Recommendations

1. If the increased productivity of small scale food producer is to be sustained and the increase in crop yields continued there will be the need for another program designed to strengthen, stabilize and maintain these gains. The issues of storage and processing to reduce the dampening impact of glut on the motivation of farmers needs to be addressed.

2. A strategy to improve rural credit as well as marketing should be developed by GOG to support both farmers and agro input/output traders. Such a program could be given donor support through the strengthening of the Banking sector for increased participation in rural credit and also through the provision of seed capital to initiate the program.

2.9 LESSONS LEARNED

There were various factors both external and internal which influenced project implementation. These factors which either slackened implementation or hastened it are as follows:

1. The systematic devaluation of the cedi and the resultant increase in prices at a time when subsidies were being withdrawn from agricultural inputs.

2. Increases in international prices for agricultural inputs like fertilizers during the period of project implementation. This and the devaluation of the cedi combined to slow down private participation in the program.

3. The difficulties involved in the use of food aid to generate local currency for project funding which caused delays in the disbursements and implementation of projects.

4. the generally stable political conditions in the country during the implementation period which enhanced the confidence of donors in supporting programs in the country.

5. The lag time between policy pronouncements and implementation by implementing agencies caused considerable degree of uncertainty for the general public.

Table 3: Program Achievement Matrix

GOAL

Narrative Summary	Program Indicators	Assumptions	Remarks on Assumptions	Program Achievement
accelerated productive employmnet in private setor esp. agriculture	1. increased per capita income 2. increased employment in the private sector	political and economic stability favourable weather	stability prevailing Low rainfall in 1990 reduced crop yields. Floods delayed implementation of feeder roads project in Northern Ghana in the same year.	* decline in post-harvest losses along improved road corridors indicates possible increase in incomes[1] * decline in fertilizer use not generated expected increased yields * increased economy activity (trading) and mobility in areas of improved roads, generated increased employment.

Impact of Programme on Goal would require a few more years to show. The result of initial impact studies on the road improvement component of the programme is what appears here.

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PURPOSE

Narrative Summary	Program Indicators				Assumptions	Remarks on Assumptions	Program Achievement
Increased productivity in food crop production	Yield:	1988	1991	1993	SAP continued	SAP still pursued	Yield:
	Maize:				political and economic stability		Maize: '90 '91 '92
	Kg/capita	43	46	51			kg/capita 38.2 62.7 47.9
	mt/ha	1.1	1.2	1.4			mt/ha 1.2 1.5 1.2
	Rice:						Rice:
	kg/capita	6.1	6.3	6.7			kg/capita 5.6 10.2 8.6
	mt/ha	1.0	1.1	1.1			mt/ha 0.9 1.6 1.7
		1988	1990	1991			
	% cropped area fertilized	32	34	36			Targets were not verifiable in this study. Decline in fertilizer use may indicate target not yet reached
	% cropped area with improved maize seed	32	34	36			

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OUTPUTS

Narrative Summary	Program Indicators	Assumptions	Remarks on Assumptions	Program Achievement
Fertilizer supply liberalized	Implementation Plan: 10/88 5/89 8/90 1.Implementation plan approved x 2.Price subsidy reduced to 30% x 3.Private retailing and wholesaling launched - pilot region x 4.Price subsidy reduced to 15% x 5.Private retailing and wholesaling launched - all Ghana x 6.Price subsidy eliminated x 7.Private sector importing of MOA approved fertilizers launched x Fertilizer '88 '89' 90 '91 import (mt) 47409 73500 76500			Implementation plan completed on schedule. completely abolished. Fertilizer imports (mt) 1988: 39575 1989: 65400 1990: 17850 1991: - 1992: 29900
Seed Supply liberalized	Implementation plan: 10/88 5/89 8/90 1.Studies launched x 2.Studies completed x 3.Implementation plan approved x (Selected privatization/ restructuring option launched x Sales of improved maize seeds (mt) '88 '89 '90 '91 1320 1384 1472 1552			Implementation plan completed on schedule. In addition GSC completely abolished. Sales of improved maize seeds (m.t) '90 '91 '92 281 293 382

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OUTPUTS CONTD.

Narrative Summary	Program Indicators	Assumptions	Remarks on Assumptions	Program Achievement
Rural infrastructure improved	Rehabilitation of Feeder Roads '88 '89 '90 '91 a. Graded & shaped-km 1600 2300 2300 2300 b. full regravelling-km 320 475 475 475 c. Spot improvement-km 80 115 115 115 d. Drainage structures and culverts installed number: 240 340 340 340			41.5% of expected output awarded on contract 80% of contracted work completed as at April 1993.
MOFA extension service strengthened	'88 '89 '90 '91 Training sessions 8 15 15 15 farmers/extension contact/agent 350 770 960 1150			36 training sessions held for 3208 extension personnel and 1566 farmers from 1989 -1991. Farmers/extension contact 1625 at the end of 1992
Policy analysis relevant to agriculture carried out	'88 '89 '90 '91 No. of studies 0 4 5 0			'89 '90 '91 No. of studies 3 0 0

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INPUT

Narrative Summary	Program Indicators	Assumptions	Remarks on Assumptions	Program Achievement
US dollars	20m in 3 tranches Tranche: 1 2 3 Target date: 10/88 5/89 8/90 Amount: 5.94 8.61 5.45	Subject to GOG meeting set conditionalities Stable US-Ghana relations Timely AID reviews	All conditionalities of the program met. US-Ghana relations stable.	Dollar equivalent released on time.
Cedi generated	Billions of cedis Tranche: 1 2 3 ¢ billion: 1.05 2.42 1.88			Billion of cedis Tranche: 1 2 3 ¢ billion: 1.38 2.62 1.88 unprogrammed balance ¢ 326m 195m Total ¢ generated ¢5.88b.

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ANNEX A

PRIVATIZATION OF FERTILIZER SUPPLY AND DISTRIBUTION

INTRODUCTION

In the past it was the sole responsibility of the Ministry of Food and Agriculture (MOFA) to import fertilizer, heavily subsidized, for distribution to the farming areas. Fertilizers reached the ultimate users through a network of regional, district and sub-district outlets; under the auspices of the Department of Crop Services (DCS) of MOFA.

The system was inefficient because it suffered several deficiencies including unrealistic and often improper demand forecast/assessment, delays in government funding of fertilizer imports resulting in late arrival which more often than not limit timely availability of fertilizers to the end users, the farmers. The World Bank and GOG identified "monopoly government control and management of fertilizer supply as an urgent problem needing urgent attention". (PAAD)

To salvage the situation it was decided to privatize the importation, distribution and marketing of fertilizer. This effort was assisted by various governments, notably CEC, Netherlands and Canada. The World Bank sponsored ASRP, signed in 1987, also supported the programme. USAID believing that through conditionality and close monitoring, this effort could provide positive reinforcement, supported the programme under APPP.

Conditionalities

The APPP funds was to be released in three tranches on the basis of some conditionalities being met. These conditionalities were as follows:

First Tranche (target date: October 1988)

GOG submission of documentation, acceptable to USAID, which demonstrates that the subsidy on each type of fertilizer does not exceed 30%.

GOG submission of an implementation plan for fertilizer privatization acceptable to USAID.

Second Tranche (target date: May 1989)

GOG submission of documentation acceptable to USAID, which demonstrates that the subsidy on each type of fertilizer does not exceed 15%.

GOG submission of documentation and a public announcement, acceptable to USAID, which demonstrate that private retailing and wholesaling has been launched in the Volta and Brong Ahafo regions.

Third Tranche (target date: August 1990)

GOG submission of documentation acceptable to USAID, which demonstrate that private sector retailing and wholesaling throughout Ghana has been launched and that private sector importing is allowed.

Targets: The privatization process was expected to result in increased fertilizer supply to farmers and this was expected to result in increase in yields. The following tagets were thus set as indicators for the accomplishment of the program.

	Targets				
	'88	'89	'90	'91	'95
% area cropped with maize fertilized	30	32	34	36	42
Total fertilizer imports (m.t.)	47,409	73,500	65,404	76,500	-

Mid-term Evaluation (August 1990)

A mid-term evaluation of the APPP was carried out in August 1990. By the time of the mid-term evaluation all the 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 MOFA approved fertilizers had been launched.

Notwithstanding the accomplishment of fertilizer privatization several problems were identified during the midterm evaluation, for which recommendations for corrective action were made.

The problems identified included the following:

a. that due to the rapid price increase due to subsidy removal and exchange rate adjustments fertilizer use had fallen to an estimated sale of 8400 tons of plant nutrient (NPK) in 1990 as compared to 29,000 tons in 1981

b. that with declining fertilizer use large stocks of fertilizers had accumulated in the MOFA warehouses (by MOFA estimates 68,000 tons of product was in stock compared to product sale of just over 25,000 tons. It was reckoned that this over supply had discouraged, and essentially stopped importation of fertilizers by the private sector

c. that the decision of GOG to maintain fixed prices with volume rebates on sales to dealers was not working satisfactorily. The rebates were just not enough for dealers to make adequate profit to encourage vigorous selling

d. that there was a lack of understanding of the role of the public sector in relation to the newly established dealers. The MOFA was doing direct sales through the Extension Service, Global 2000 programme (which used half of the total fertilizers sold in Ghana in 1989) was purchasing directly from MOFA and differences in opinion existed within GOG and among donors over the role of the FASCOMs

e. that there was an incomplete understanding in the trading community of policies including incentives, taxation, fees, credit etc. they affected dealers, wholesalers and importers.

The following recommendations were made on the basis of the problems identified:

1. that MOFA and other agencies act quickly through publications, newspapers television and radio, to dispel an incorrect impression among the general public that blames privatization and excess profit by dealers for the rapid increase in fertilizer prices

2. that the FASCOMs be confined to those areas for which they were created as efforts are made to privatize them

3. that the Extension Service should not be involved in fertilizer sales but should restrict itself to advice and training

4. that control be lifted on pricing to farmers. Alternatively, volume discounts to small retailers be increased and off-season discounts given

5. that a credit scheme be developed to support the fertilizer industry. Senior staff of commercial banks should be sponsored to observe successful credit systems in other developing countries

6. that policy on retailing of fertilizer donated to GOG should be developed

7. that GOG should develop and publish a policy on the sale or lease of fertilizer storage facilities of MOFA

8. that Crop and Extension Services Departments should initiate fertilizer dealer training programmes at regional levels before the beginning of the 1991 main cropping season

Southern Ghana. These delays were usually due to procedures for imports, lack of foreign exchange and delays in public sector procurement.

Fertilizer Consumption

As indicated in the Mid-term Evaluation, there has been a lowering in total fertilizer consumption in the last few years especially during the period of programme implementation (1988-1990). The trend in fertilizer use (indicated by fertilizer sales) as shown in table A2 points to decline in fertilizer consumption.

Table A2: Fertilizer Product use Trends (in tons)

PRODUCT	YEAR			
	1988	1989	1990	1991
Urea	-	2,094	3,600	6,809
Am Sulphate	12,349	13,047	8,868	9,303
CAN	-	380	-	13
SSP	-	43	-	40
MOP	1,067	195	972	483
Pot. Nitrate	-	-	32	31
15-15-15	6,819	7,227	6,091	3,907
17-17-17	2,486	1,537	295	100
20-20-0 & 22-22-0	7,700	8,001	5,359	8,416
Other	4,023	4,500	-	-
TOTAL	34,444	37,128	30,611	29,625

Source: Crop Services Department, MOFA

High prices of fertilizers and the lack of credit to purchase fertilizer were cited by farmers interviewed in Kumasi, Accra and Ho, by the team as the basic reason for the reduction in fertilizer consumption. Farmers pointed out that the increase in fertilizer prices is not accompanied by commensurate price increases in products hence there is no financial incentive for them to use fertilizers.

A look at the maize fertilizer price relationship in Ghana since 1979 (see table A3) indicates that, it has always tended to go against the farmers especially in the last few years.

9. that GOG stock of fertilizer should be sold to the FASCOMs

10. that a full-time technical assistance for 4-5 year period be provided for: procurement, marketing, transport, storage and handling, retailing and pricing, quality control and specification, and credit.

The Present situation in the Fertilizer Industry

Under the programme a total of 122,829mt of fertilizer were imported within a period of 3 years - 1988-1990 during which the programme was implemented. Since then an additional 30,000mt has been imported, exclusively by the private sector. (see table A1 and annex A1)

Table A1: Ghana: Fertilizer Imports (1984 - 1992) in tons

YEAR	S/ Amm.	S/ super	M/ pot.	Urea	15-15-15	20-20-0	5-20-15	other	TOTAL
1984	13600			200	24500				38350
1985	5437				21362	3200			29999
1986	8500	400	1000			9600	600		20100
1987	10750		600		3300	12750	400		32200
1988	20550		1050		14475	2900	600		39575
1989	25711		3500	6000	8000	15500	300	6313	65404
1990	4250			5100		8500			17850
1991	-	-	-	-	-	-	-	-	-
1992	11500		400		14500	3500			29900

Source: Dept. of Crop Services, MOFA.

One significant development during the implementation of the fertilizer privatization program was the early arrival of fertilizer in the country thereby facilitating their distribution to the regions and districts before the onset of the rains. Private importers generally initiated importation in October and by March the following year fertilizers had arrived in the country for distribution. This is in contrast to the frequent late arrival of fertilizer when Government of Ghana was importing fertilizer. For example in 1973 and 1982, fertilizer were imported into the country well after the rainy season, and in 1988 fertilizer arrived at the port in April when the planting season for maize was almost over in

Table A3: Maize/Fertilizer Price Relationship in Ghana

YEAR	MAIZE (1) ¢/KG	FERTILIZER PRICE (¢/KG) (2)	KG OF MAIZE TO BUY ONE KG OF NUTRIENT
1979	0.80*	0.18	0.225
1980	1.00*	0.27	0.270
1981	1.65*	0.55	0.333
1982	5.00*	0.55	0.110
1983	38.58	1.03	0.027
1984	23.38	7.35	0.314
1985	20.38	7.35	0.361
1986	33.11	11.90	0.359
1987	53.87	22.00	0.408
1988	68.59	39.00	0.569
1989	53.00	59.50	1.123
1990	86.33	77.00	0.892
1991	94.34	79.00	0.837
1992	100.6		

Source: PPMED, MOFA

1. average wholesale price for maize
2. average price per kg of 15-15-15 and ammonium sulphate
* Minimum guaranteed price of maize was used.

For instance while a farmer required 0.3kg of maize to purchase 1kg of nutrient in 1984, about 0.9 (3 times as much) was required for the same amount of fertilizer. The peak of the relationship was in 1989 when subsidy of fertilizer was only 15%. However, there seem to be an improvement in the ratio from 1990 (probably with less government control of the pricing of the product - the removal of guaranteed minimum prices). While maize prices increased by an average of 38.5% from 1988 to 1991, fertilizer prices shot up by 102.5% during the same period.

Furthermore as Obeng et al (1990) pointed out with increasing cash constraint to purchase fertilizer, farmers tended to use less than

the recommended rates of fertilizer - spreading what they are able to afford on as large an areas as possible. It is apparent therefore that the full benefit of the fertilizer in use is probably not being reaped. It is essential that measures be introduced to reduce the impact of the removal of subsidies on fertilizer use by farmers.

Supply of Fertilizer

At the beginning of the year 1992, it was estimated that there was about 22,000mt of various types of fertilizer in the country. There has also been importation of about 12,500mt. Using the current consumption as a yardstick, it is apparent that there is enough fertilizer in the system to meet farmers' demand. There is also the fact that most of the big consumers of fertilizer particularly the plantations import their own needs of fertilizer thus leaving private importation for the food crops sector. In addition to this the government has a national security stock in case of disasters like floods, drought etc. to meet emergency.

Despite the observed fertilizer stocks situation, it is believed that it is too premature to predict the effect of the privatization programme on the supply of fertilizer. The true picture will emerge in about a couple of years when the small quantity of government stock mainly nitrogenous (except the national security stock) would have been sold. Another factor worthy of consideration to predict the supply of fertilizer is the value/cost ratio. So long as this is high enough farmers will continue to buy fertilizer and importers will react accordingly by importing more. This phenomenon has been observed in the farmer assisted programme of Global 2000.

Retailing and wholesaling

At the beginning of the privatization programme advertisements in the local dailies announcing the initiation of the programme. (see Annex A2). There was an impressive and positive response by the private sector. In all 866 dealers/wholesalers were registered.

However, as time went on most of them fizzled out. According to non-performing dealers and wholesalers, the main reason for this was lack of capital. Secondly it did not dawn on them that it was a seasonal commodity hence one could not make it his or her sole business unlike other commodities like rice and sugar which can be sold throughout the year.

In order to ensure the interest of individuals/organization in the programme certain discount rates are accorded to them depending on quantities of fertilizer purchased. Currently purchases of less than 500 bags (50kg) attract a discount rate ¢800/bag and for purchases of 500 bags and above a discount rate of ¢1000/bag. Majority of retailers fall within the first category and they complained that the discount is not enough to cover loading and other handling costs and to allow for profit.

There will therefore be the need for the private importers to institute an attractive discount or commission to enable the dealers perform.

At the time of the mid-year review, there were only 50 active retailers/wholesalers. In this evaluation, it has been observed that the number has increased from 50 to 89. The breakdown is as follows:

	Region	Dealers/Wholesalers
1.	Upper East	5
2.	Upper West	2
3.	Northern	23
4.	Brong Ahafo	12
5.	Ashanti	12
6.	Central	6
7.	Western	4
8.	Eastern	3
9.	Greater Accra	2
10.	Volta	20
	Total	89

The increase is indicative of how the private sector continues to show interest in the programme. It is obvious however that the private sector is still not experienced in running a fertilizer business. Time would be required for private enterprises to understand the business and gain competence in carrying out marketing functions. During this period it is important that the public sector provides the enabling atmosphere to nurture the private investors' interest in the industry.

Private Importation

The hub of the fertilizer privatization programme is the active participation of the private sector. Since the Ministry of Food and Agriculture (MOFA)'s last importation of fertilizer in 1990, four organizations have imported fertilizer into the country. These organizations are:

i.	Wienco (Gh) Limited	32,500 mt.
ii.	Chemico Limited	12,000 mt.
iii.	Watraco Gerber Limited)	
iv.	Jasmedi Group Limited)	1,500 mt.

The reduction in fertilizer consumption/demand during the period of privatization has not helped initiate a vigorous private importation of fertilizer. Indeed in 1991 there was no fertilizer imports into the country because there was enough stock in the country to meet current demand. According to importers contacted during the study, the major problems limiting their participation are:

- the lack of capital to prefinance the purchase of fertilizer
- increased prices of fertilizer due to the withdrawal of subsidies and the depreciation of the cedi, resulting in low demand, and
- the seasonality of the rainfed farming activity which results in fluctuations in demand and distribution of fertilizers.

These factors have limited the entry into the fertilizer imports to only a few enterprises. The lack of competition has the potential of leading to monopoly. It would require that GOG provides incentives in the form of tax holidays and tax rebates, and also advance credit to the private sector in order to attract more private investment in this direction. Donor support in such a credit scheme would be required, in order to strengthen, the privatization programme.

Action on Recommendations in the Mid-term Evaluation

Following the recommendations from the Mid-term evaluation, various measures were undertaken to improve programme performance. Some of the specific activities undertaken in this respect include the following:

i. Price control. With the removal of 100% explicit subsidy in 1990, coupled with the private importation of the commodity, the Government of Ghana has accordingly decontrolled fertilizer prices. Fertilizer prices are no more pan territorial with the result that the further away you are from the point of entry of the commodity the more expensive is the fertilizer. For example a bag of (50kg) sulphate of ammonia ex Tema cost ₵7,800 whilst it is ₵8,500 in Tamale (These are prices for private importers). Most of the importers have zoned the country into 3 hence there are 3 prices for any particular fertilizer.

The Government of Ghana, for that matter, the Ministry of Food and Agriculture has since 1991 stopped sales of fertilizer to the farmers. These activities are now being performed entirely by private dealers/wholesalers.

ii. Information - Provision of market information has been addressed by the installation of a computer at the Department of Crop Services, Ministry of Food and Agriculture. Fertilizer imports, stocks levels, consumption will be stored in the computer. These data, it is believed, will go a long way in assisting dealers/wholesalers in their marketing strategies. It will also assist MOFA to know the quantum of fertilizer in the system at any particular point in time to assist private importers as to the quantity and types to import.
However, there is the need to establish the information network throughout the country and also evolve an effective monitoring system to ensure timely and adequate flow of information to the private sector.

iii. Dealers Training

Recognizing the fact that fertilizer dealers/wholesalers need not only sell the commodity but should also be knowledgeable about the product they are handling at the regional capitals, a countrywide training programme has been mounted for them. In all 200 dealers/wholesalers including two women have been trained. The topics covered included:

1. Types of fertilizer
2. Properties of fertilizer
3. Handling
4. Storage
5. Application rates
6. Marketing
7. Book keeping

The response to the training has been very positive and at the request of the dealers/wholesalers, another training programme has been planned to take place before the end of the year 1993. During the training, copies of the FAO, FIAC Fertilizer Retailing Guide were distributed to the participants to supplement the training and to serve as guides.

iv. Fertilizer Quality Control

Fertilizers imported into the country were not subject to routine quality control analysis. The SGS has been checking the quality aspects of fertilizer imported into the country on behalf of the Government of Ghana. However, there have been occasions when some fertilizers have been analyzed locally to ascertain their quality. Two officers at the Department of Crop Services, have now been trained to start routine quality control analysis.

v. FASCOMS

The two FASCOMS namely, Upper and Volta Regions are operating as limited liability companies without subvention from the Government of Ghana. The two are under-going restructuring exercise to enable them operate efficiently. However, the role the FASCOMs are presently playing was not very clear to the consultants. It is apparent that efforts are being made to sort their roles but not much has been achieved yet. A report on the present situation of the Volta Region FASCOM is attached as Annex A3.

iv. Fertilizer donated to Government of Ghana by other Governments

- Apart from donations by other governments prior to the privatization of the importation by the private sector, there has been no other donations. There is however, a balance of 1.00m ECU to be utilized under the Sectoral Import Programme being funded by the EEC. This is being extended to the private importers.

In this regard, the Department of Crop Services has held meetings with the importers and some banks as to how best to use this facility without the involvement of the government. Should this procedure be successfully implemented it will be used for subsequent donations from other governments. The auction system has not been successful due to liquidity problems of importers. This was manifested when DCS attempted to hand over the MOFA depots in the country to the private sector. Only few individuals were able to mobilize funds to purchase the fertilizer.

Gender Issues

As already stated there are only two women who are actively operating as fertilizer dealers. So far as the privatization programme was concerned it was open to both males and females. It is an incontrovertible fact that women play a very active and important role in marketing in Ghana. In fact their dominance in marketing cannot be over emphasized.

However, in the past distribution of fertilizer (under government control) had been mainly male-controlled. The fertilizer industry is thus a new area for women involvement and since the program did not make any special provision for attracting women into the industry, it is not surprising that only two women are actively operating as fertilizer dealers.

However, women are actively involved in fertilizer retailing in the local markets, especially in Northern Ghana where fertilizer is sold in very small quantities in local measures called "bowls". The involvement of women at this level probably indicates their inability to meet the huge capital investment involved in bulk handling. At the same time it also reflects the role women play in

meeting the needs of the small farmers who cannot afford to purchase fertilizer in large quantities.

FINDINGS

1. Declining Fertilizer use:

Evidence from the field indicate that fertilizer use is still on the decline. Due to the increased prices of the product resulting from the removal of subsidies and the depreciation of the cedi, fertilizer prices have increased over 100% since 1988 and this has resulted in decrease in fertilizer use. Constrained by cash to purchase the product, many farmers have either reduced their application rates or ceased using fertilizer completely. This is not encouraging for privatizing the fertilizer industry.

2. Deteriorating product/fertilizer price relationships:

The increase in fertilizer prices has not been matched with commensurate increases in producer prices of crops. For instance while the price of 15-15-15 and ammonium Sulphate increased by 102.5% from 1988 to 1992, price of maize only increased by 37.5%. This serves as a disincentive to farmers in using fertilizer. Measures that would ensure better pricing for farmers produce, like provision of storage and marketing facilities,would be required to improve producer prices.

3. Fertilizer supply:

There is presently enough fertilizer in the country to meet farmers' needs. An estimated stock of about 34,500mt of fertilizer (excluding government's security stock) was available during the 1992 cropping season. However, it is considered premature to predict the effects of the privatization programme on the supply of fertilizer, as present stocks also include carry-overs from government stock in the past.

4. Private fertilizer importation:

Private participation in fertilizer imports is limited due to the present decline in fertilizer use. There are presently 4 private enterprises importing fertilizer, but 70% of all the imports so far has been done by only one company. Private importation is faced with the problem of lack of capital, increasing prices and fluctuation in fertilizer demand, among others.

5. Wholesaling and retailing of fertilizer:

An initial enthusiasm that met the initiation of the privatization programme saw 866 dealers/wholesalers registering. However, by the time of the mid-term evaluation (September, 1990), there were only 50 active dealers. The number has increased to 89 since then.

6. Action on mid-term evaluation recommendations:

Various measures were taken following the mid-term evaluation to address the problems of implementation of APPP.

a. GOG has completely decontrolled fertilizer prices allowing the private sector to determine their own prices. Importers have zoned the country into 3 and fixed the prices to areas - such that the further away an area is from the point of entry the higher the price of the product. Discount rates have now been increased to ¢800/bag for purchases of less than 500 bags and ¢1000/bag for purchases of 500 bags and above. However, the discount rates are considered by dealers as not being enough to cover loading and other handling charges.

b. The Department of Agricultural Extension Services has since 1991 stopped sales of fertilizer to farmers.

c. A fertilizer dealers' training was organised at the beginning of 1993 for 200 dealers/wholesalers by the Department of Crop Services (DCS). Another training is scheduled for the end of 1993 following recommendations from participants at first training session.

d. Fertilizer donations to GOG has been disposed of through direct sale to the private sector. The auctioning of these was however quite slow due to liquidity problems of dealers. Moreover, a balance of 1.0 million ECUs from the EEC, to be utilized for fertilizer importation still remains. Extension of this facility to the private importers is being negotiated with some banks by DCS.

e. The role of the FASCOMs in the fertilizer industry is still shrouded in uncertainty. A restructuring exercise is currently in progress in the FASCOMs but it is still not very clear what role they are playing now or would play in the future.

7. Women participation in the fertilizer industry:

The programme did not make any specific provision for women's participation in the privatization programme. Only 2 women are presently actively involved as fertilizer dealers. However, at the local level, women are engaged in retailing of fertilizer in small quantities to farmers who cannot afford to buy the product in the 50kg bags.

RECOMMENDATIONS

1. A vigorous mass media promotion programme, informing farmers of the value of fertilizer usage is required.

2. It is recommended that measures be instituted to reduce the impact of increasing prices of fertilizer on farmers (particularly small farmers). The experience of the Global

2000 programme indicates that given credit, farmers would use fertilizer and other farm inputs.

A scheme of supervised credit that would make fertilizer available to farmers on credit would be necessary. Such a scheme should however be regulated to benefit small farmers who are already using modern methods of farming and/or are in agro-ecological zones which give positive net return on fertilizer use.

3. The producer prices of farm produce, particularly the cereals could be improved if good marketing infrastructure is established in the rural areas. Construction of low cost on-farm storage facilities should be promoted among farmers. This would help reduce glut during the harvesting season.

4. The private sector participation requires investment both in fixed and working capital. To encourage such investments, GOG should provide incentives in the form of tax holidays and tax rebates to importers. Such a policy should be made very transparent so that importers would be aware of them.

The present system where there are no tariffs on imports and sale of fertilizer should be continued. A scheme of low-cost credit for fertilizer purchases should be initiated for dealers. The Agricultural Development Bank could be organised to play this role.

5. As demonstrated in many developed and developing countries, the private sector is capable of making an important contribution to agricultural extension. As the take-off stage of privatization progresses, it is expected that the dealers would be more involved in promoting fertilizer use among farmers.

It is therefore recommended that close contact be maintained between extension personnel and fertilizer dealers. This will ensure that activities at the field level are adequately coordinated to avoid overlapping or conflicting advice. As with other commodities, fertilizer and other related input dealers would be consulted by their customers on the properties and proper use of the products. This makes the training of dealers particularly retailers very important.

Regular seminars, joint training and collaboration in the preparation of extension materials should be initiated. The fertilizer dealer training held this year should be regularised.

6. Information dissemination: The vigor of the private sector involvement requires proper information flow. It is recommended that the information unit within the DCS expands in terms of distribution to the regions and districts, and equipment in order to provide information on prices, imports.

fertilizer stocks, seed production, etc. to both the government and the private sectors. A bulletin containing information on these variables should be regularly published.

Annex A1

Fertilizer Imports During 1954-1992

Year	SA	SS	TSP	MP	SP	MS	Urea	15-15-15	20-20-0	5-20-15 10-20-15	DAP/CAN	3-25-18 2-24-11	Other Mixtures	Total
	(tonnes)													
1954	452	20	29	65	66								42	674
1955	578	89	139	8	41								48	903
1956	1,560	25	56	111	196								95	2,043
1957	208	9	376	4	116								162	875
1958	620	87	66	5	80								115	973
1959	596	124	31	2	247								29	1,029
1960	290	45	210	107	405								257	1,314
1961	633	66	459	275	400								94	1,927
1962	513	47	1,595	25	-		94	165					455	2,894
1963	3,000	2,500	1,060	600	700		-	-					430	8,295
1964	1,000	1,100	192	1,200	300		1,540	1,540					250	7,122
1965	1,300	950	2,477	800	-		550	950					170	7,697
1966	5,018	275	-	-	-			123					13	5,429
1967	182		6	287	-			161	13					649
1968	150	150	-	-	-			2,000	900					3,200
1969	1,210	2,300	510	225	-			500	510					5,255
1970	3,140	97	72	38	11	7	3	3,671	1,087	124				8,250
1971	1,943	460	21	179	92	302	3	4,923	544	159				8,626
1972	3,352	287	88	33	137	5	33	5,787	2,085					12,207
1973	8,100	1,500	300	200	48		8	14,278	3,418	930		1,000		16,931
1974	4,150	800	200	10	-		10	6,000	1,000			300		12,470
1975	2,258	1,025	900	5	-		3	16,075	1,475	500				22,241
1976	2,557	582	-	-	-			36,626	4,218					43,983
1977	2,900	6,700	780	70	10	350		4,200	4,000	3,000	4,300	240	—	26,550
1978	13,739	-	-	-	-			15,896	6,180		1,545		2,000	39,360
1979	19,000	-	-	-	-			39,650						58,650
1980	17,980	-	400	500	-			39,600		500	1,480			60,460
1981	-	-	-	-	-			-						-
1982	14,000	-	-	-	-			20,000	8,000	500	4,000			46,500
1983	-	-	-	-	-			-						-
1984	13,600	-	-	-	-		200	24,550						38,350
1985	5,437	-	-	-	-			21,362	3,200					29,999
1986	8,500	400	-	1,000	-				9,600	600				20,100
1987	10,750			600				3,300	12,750	400				32,200
1988	20,550			1,050				14,475	2,900	600				39,575
1989	25,711	-	-	3,500	-		6,000	8,000	15,500	380	-	-	6,313	65,404
1990	4,250	-	-		-		5,100	-	8,500		-	-		17,850
1991	-	-	-	-	-			-		-	-	-	-	
1992	11,500	-	-	-400	-			14,500	3,500	-	-	-	-	29,900

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Annex A2

MINISTRY OF AGRICULTURE

PRIVATISATION OF FERTILIZER — RETAILING

1. The Ministry of Agriculture intends to appoint private retailers in the Volta and Brong Ahafo Regions to sell fertilizers.

2. Applicants must be established retailers or organised farmers' groups with a place or places of business in rural areas, conveniently located to take delivery of fertilizers from selected fertilizer depots in the Regions and sell direct to farmers. Interested retailers will be provided technical guidance by the staff of the Crop Services Department of the Ministry of Agriculture.

3. Applicants must have adequate leakage free, well-ventilated storage facilitates and sufficient capital to purchase minimum quantities of fertilizers with bank drafts or cash and pay for transport to their retail shops, and where necessary, to the farm gates.

4. Retailers will purchase at Ministry's predetermined prices from the fertilizers depots and will be allowed to sell up to a maximum retail prices depending on the distances from the fertilizer deports to their retail shops.

5. Those interested should apply in writing to
The Regional Deputy Secretary for Agriculture
Ministry of Agriculture
Sunyani, Brong Ahafo Region

or

The Ma[illegible]ging Director,
Farme[illegible] Services Company Ltd.,
P.O. B[illegible] 178,
Ho, V[illegible] Region.

who are [illegible] ward them to:
The Director of Crops Services
Ministry of Agriculture,
P.O. Box M 37,
Accra.

indicating
i) Name and title or Name of Firm or Organisation
ii) Address of place or places of business
iii) Locations of retail shop(s) with dimensions and descriptions
iv) Distances of retail shop(s) to nearest fertilizer depots
v) Name of Bankers
vi) Present Business

6. Letters of application must be forwarded to the above addresses by 15th August, 1988 at the latest

7. Applicants who intend in due course to undertake wholesaling of fertilizers in addition to retailing should indicate as such in their applications.

MINISTRY OF AGRICULTURE

PRIVATISATION OF FERTILIZER — RETAILING

(1) The Ministry of Agriculture intends to appoint private retailers in the Ashanti, Eastern and Central Regions to sell fertilisers.

(2) Applicants must be established retailers or organised farmer's groups with a place or places of business in rural areas, conveniently located to take delivery of fertilisers from selected fertiliser depots in the regions and sell direct to farmers. Interested retailers will be provided technical guidance by the staff of the Crop Services Department of the Ministry of Agriculture.

(3) Applicants must have adequate leakage free, well ventilated storage facilities and sufficient capital to purchase minimum quantities of fertilisers with bank draft or cash and pay for transport to their retail shops and where necessary, to the farm gates.

(4) Retailers will purchase at the Ministry's pre-determined prices and will be allowed to sell up to maximum retail prices depending on the distances from the fertiliser depot to their shops.

(5) Those interested should apply in writing to their local District Crop Services Officer who will forward through his Regional Crop Services Officer and PNDC Deputy Secretary for Agriculture to:
The Director of Crop Services Department,
Ministry of Agriculture,
P.O. Box M.37,
Accra.

indicating
(i) Name and title or name of firm or organisation
(ii) Address and place or places of business
(iii) Locations of retail shop(s) with dimensions and descriptions
(iv) Distances of retail shop(s) to nearest fertiliser depots
(v) Name of bankers
(vi) Present business

(6) Letters of application should be submitted by 15th April, 1989 at the latest.

(7) Applicants who intend in due course to undertake wholesaling of fertilisers, in addition to retailing should indicate as such in their applications

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Annex A2 contd.

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MINISTRY OF AGRICULTURE

PRIVATISATION OF IMPORTATION, DISTRIBUTION AND MARKETING OF FERTILIZER

In line with the Government's policy of privatising the importation, distribution and marketing of fertilizer in the country, the Ministry of Agriculture intends to transfer management of its depots in the country to private individuals or organisations.

Any individuals or organisations interested in this exercise may apply to the:

Director,
Department of Crop Services,
P. O.Box M. 37,
Accra.
for further details.

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Annex A3

RESTRUCTURING OF FASCOM (VR) LIMITED
I.D.A. SUPERVISION MISSION CREDIT NO. 2345 GH

As a follow up to our meeting of 7th July, 1993 the Management of Fascom (VR) Limited is anxious to co-operate with the supervision Mission in an attempt to restructure the company to become viable.

In September, 1991 the Board of Directors initiated an action to restructure the company. In February, 1992 the first report was submitted to the Ministry of Food and Agriculture. In October 1992, another memorandum on the proposed future role and options to deal with the debt burden of the company was addressed to the PNDC Acting Secretary, Ministry of Agriculture. I attach copies of the two documents for your information.

The concern of the Board is that it should protect the huge investment made in agricultural development by VORADEP through the transfer of technology of the peasant farmers. Much money was spent in terms of infrastructure. These should be maintained.

Even though it is necessary to privatize Fascom, it is equally important to ensure that the interest of the farmer is not relegated, bearing in mind the fact that the government is still committed to agriculture as its macro development priority.

To create a vacuum by non-availability of inputs will create a hardship to the farmers. consequently, the Board decided to take the necessary step to restructure Fascom in order to play its role towards agricultural development in the country certain measures were therefore taken as enumerated below:

1. Reduction of staff from 278 from 1st January 1992 to 124 (55.4%) as at 30th June, 1993. Exercise is continuing.

2. Reduction of fleet of Cargo trucks from 18 to 9 as at 30th June, 1993. the target is 6 high axle trucks for long distance haulage.

3. Privatization of 14 Farm Service Centres; closing down of 12 non-viable F.S.Cs; 2 F.S.Cs converted into sub-depots. Remaining six (6) to operate pending privatization. Total - 34 Voradep built F.S.Cs.

4. The company is now mainly engaged on wholesaling of agricultural inputs on national basis. Review of company's marketing strategies in order to compete profitably and efficiently is well in hand.

Management is reviewing the company's structure in consequence of the above.

PROPOSALS TO TURN THE COMPANY AROUND

Debt Burden

It was realized that the company cannot be put on sound commercial footing without finding favourable solution to the debt burden. The following are details of the financial status:

A. COMPANY'S LONG AND SHORT TERM CREDITORS

1.	Government of Ghana Long Term Loan (IDA/IFAD)	¢1,204,517,728
2.	Ministry of Food and Agriculture	597,936,604
3.	Voradep Current Account (Services Rendered)	9,100,137
4.	Inputs supplies from FASCOM (UR) Limited Less Adjustments	76,153,614
5.	Ministry of Food and Agriculture, Accra (Short term Loan)	77,100,000
6.	Claims from staff - E.S.B.	11,936,060
7.	Accrued leave Benefits for staff at post	2,950,000
8.	Trade Creditors and other Creditors	12,845,544
	Total Debt	¢1,995,489,687

B. COMPANY'S DEBTORS

1.	Government of Ghana Account (Government and Parastatals)	264,251,107
2.	Ministry of Food and Agriculture (Fertilizer Subsidy recoverable)	289,132,000
3.	Trade Debtors (less Bad/doubtful debts)	94,009,682
	Total	647,392,789
	Therefore Net Value of Debt (A-B)	¢1,345,156,898

STOCK BALANCES AS AT 30TH JUNE, 1993

¢545,269,898.00 at cost.

COMPANY FIXED ASSETS

As at September, 1992 - ¢353,960,215.00 valued by Felix Dzubey and Co.

PROPOSALS FOR DEALING WITH COMPANY'S DEBT BURDEN

The Board Committee on restructuring indicated that the company's debts far exceed its assets thus rendering its networth negative. Until a definite decision is taken, it can hardly attract venture capital. To address this anomaly, certain alternative proposals were made for the consideration of Ministry of Food and Agriculture.

ALTERNATIVE PROPOSALS FOR SOLUTION TO THE LOAN PROBLEM

Based on the above statement about the indebtedness, the following four options have been put up for the consideration of the Ministry of Food and Agriculture to assist in arriving at a favourable solution in order to revive the company:

Alternative A

In this Alternative, it has been proposed that, in view of the importance of the company in the agricultural sector of the economy, and also in view of the financial problems (owing to the way it was set up like a service wing of VORADEP) the entire indebtedness of the company should be written off to enable the company to start on a fresh footing in order to be competitive with other enterprises in this field.

Alternative B

In this Alternative, it has been proposed that the net value of the debt - ¢1,345,156,898) should be turned into a soft loan to the company on the following terms:

i. 20 years repayment period;
ii. 2 years grace period;
iii. 2% interest rate per annum.

Alternative C

It is considered that the company should maintain a bottom line debt/equity ratio of 1.5:1 as the norm. Therefore in Alternative C, it has been proposed that the debt should be partially converted into equity to reflect this ratio. This means that about 67% should be in the form of a long-term loan with the same terms as in Alternative B above, while the remainder of 33% should be converted into equity, as an additional equity of Government in the company.

This proposal has been made on the conditionality that the Board of Directors will take measures to increase the level of authorized shares of the company to absorb the increase in Government equity.

Alternative D

In this Alternative, it has been proposed that the entire net debt should be converted into equity for Government in the company; which could be floated later as public shares in the company.

Considering the present economic policies of the government particularly towards privatization, it is unlikely that the company will succeed under proposals (b), (c) and (d). Option A is thus the only course of success available.

It is therefore recommended that the net debt of ¢1,345,156,898 be written off to enable the company to start afresh. The Management of the residual worth arising from the exercise should be negotiated with the majority shareholder i.e. Government.

PLANS ON RESTRUCTURING

If proposal "A" is accepted, then it will be necessary to appoint an Interim Management Committee (I.M.C.) to replace the Board of Directors for prompt action to be taken on a Corporate Plan. It is envisaged that such a Plan will incorporate the following:

1. Management of the residual worth (Current and Fixed Assets) should be negotiated with Government.

2. Amendment of the Company's regulations to clearly redefine its objectives on national basis as against its present regional nature. Specific powers to become a wholesaler instead of a retail organization. Additional enabling clauses to carry out other businesses in accordance with the Companies Code 1963 (Act 197).

3. To reconsider the suitability of the current name FARMERS "SERVICES" COMPANY, a connotation which suggests "Service" rather than commercial operation.

4. Negotiation with the Banks for venture capital while exploring other avenues for extra capitalization.

5. Draw up a new organogram suitable for its revised objectives.

6. to redefine the company's relationship with those operating the Farm Service Centres privately. This is to avoid a vacuum being created during the transitional period of privatization.

ANNEX B

SEED INDUSTRY RESTRUCTURING AND PRIVATIZATION

INTRODUCTION

The seed industry in Ghana had since its inception operated within the public sector. The GOG has long recognized the importance of high quality seeds for a sustainable level of agricultural production in Ghana. It had therefore being providing financial assistance to the Seed Multiplication Unit of MOFA, the Ghana Seed Company (GSC) and the Grains Development Board (all public sector institutions), to ensure the availability of adequate quantities of improved, high quality seeds for farmers at the right time. These efforts, however resulted in little success in establishing a strong and efficient seed industry.

The principal player in the production and marketing of improved seed since 1979 was the GSC, as they controlled a major share of the production and marketing of improved seeds. However, it could supply only 10% of the total national needs, its seed quality deteriorated, the coverage country-wide was restricted to regional centers and a few districts and the credibility of the company among farmers, as a supplier of good quality improved seed was very low.(FAO/World Bank 1989).

Notwithstanding this GSC, continued to be a significant drain on scarce government resources and the major investment that had been made in its large capacity was lying idle. For instance, between 1983 and 1987, the net operating losses of GSC, outstanding bank loan and interest on loans amounted to ¢533.31 million.

The seed industry was thus in total disarray and virtually collapsing. The need to privatize or restructure company to enable farmers rebuild their trust in the company's abilities, was thus recognized and agreed upon unanimously by the GOG, USAID and the World Bank after considerable dialogue.

It was against this background that the USAID-sponsored APPP support was given to revitalize the seed industry.

The APPP

The strategy for the APPP in the seed industry was for the GOG to restructure and/or privatize the GSC to help revitalize the seed industry as part of the overall intervention to increase agricultural productivity. The APPP was designed to assist the GOG in policy analysis as a productive means to support the seed industry. It also aimed at creating a plan to make the GSC attractive to the private sector.

Conditions

USAID and the GOG agreed on the following conditionality concerning the seed industry for the release of APPP funds in three tranches:

First tranche (target date: October 1988).

Studies launched (indicated by signed contracts)on GSC assets valuation and on the Ghana market for improved seeds.

Second tranche (target date: May 1989).

The two studies completed and submitted by GOG to USAID for review;

GOG submits an implementation plan acceptable to USAID which includes detailed actions to explore options for privatization and restructuring of the GSC.

Third tranche (target date: August 1990)

GOG selects an option for privatization/restructuring the GSC that is acceptable to USAID;

GOG submits a plan, acceptable to USAID, to implement the selected option;

GOG to submit evidence, acceptable to USAID, that it has launched implementation of the selected option.

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

FDP PL 480 Title III

The Ghana FY 1991 Food for Development Program (FDP) PL 480 title III was a bridge program between APPP efforts and the multiyear FY 1992-1994 title III program. Under the program USAID donated 46,500mt of wheat worth US$ 6 million to the Government of Ghana. The initial FDP was designed to build upon the results of APPP by supporting additional policy reforms essential to privatization of agricultural inputs supply markets.

Achievement of the FDP objective was expected to contribute to the development of an efficient and broad based agricultural input marketing system in Ghana. It was expected that by the end of the project, the improved seed, fertilizer and marketing system would be commercially viable, operating at market based prices and reaching an expanded number of farmers.

The relationship between the APPP and the single year (FDP) PL 48 title III facility in terms of purpose were similar and inseparable. Reference to APPP in this study therefore includes the FDP.

Seed Privatization Targets

The privatization of the seed industry was expected to result in an increased supply of improved seed, especially of maize and rice, to farmers. Targets set for the achievement of the program objectives therefore used the performance of maize as indicator. The targets were as follows:

	1988	1989	1990	1991	1995
Sales of improved maize seed for all sources (mt)	1320	1384	1472	1552	1840
% of cropped area with improved maize seed	30	32	34	36	42

Implementation plan

Action	Target dates 10/88	5/89	8/90
1. Studies launched	x		
2. Studies completed		x	
3. Implementation plan approved		x	
4. Selected privatization/ restructuring options launched			x

The ultimate goal of the seed sector restructuring effort was to privatize commercial seed production and to disengage the public sector from the production and marketing of certified and commercial seed in the country.

MID-TERM EVALUATION

A midterm evaluation of APPP was carried out in August 1990. By the time of the mid-term evaluation, the GOG had met the conditionalities for the release of funds for the seed industry. Studies on the direction of the seed industry had been completed and the GSC had been closed down entirely. The complete shut down of GSC went beyond the expected restructuring but it did give positive signals to the donors and private entrepreneurs that GOG was committed to the privatization of the seed industry.

However, there was confusion as to the state of the seed industry at the time of the mid-term evaluation. Farmers who depended on the GSC did not know where to get their seed supply and growers of certified seeds had lost their traditional market. Recommendations were therefore made in the mid-term evaluation report with the view of streamlining the industry. Table B1 gives a summary of the recommendations made and the subsequent actions taken on them.

Table B1 Summary of recommendations of the Mid-term Evaluation and actions taken on them

Recommendation	Target Date	Action
National Seed Service created	Jan. 1, 1991	Established with DCS in September, 1990
Five seed production zones created	Feb. 1, 1991	Five zones with centers at Ho, Winneba, Accra, Kumasi and Tamale established
National Seed Seminar held	Feb. 15, 1991	Seminar held in April 1991
National Seed Committee (with representative from the private sector) convened	March 1, 1991	Committee formed and operational. But not inaugurated. Awaiting parliamentary approval.
Ghana Seed Inspection Unit established	1991 crop season	Had been in place since March, 1990

THE PRESENT STATUS OF THE SEED INDUSTRY

Institutional Arrangements

Various institutions have been established within the Department of Crop Services, to enhance the performance of the industry since the inception of APPP. These include the Ghana seed inspection unit, the National Seed Service and the National Seed Committee. Seed Growers Associations have also been formed in various parts of the country to address the concerns of private seed growers.

Ghana Seed Inspection Unit

The GSIU was established under the Plant Protection and Regulatory Services Department of the Ministry of Food and Agriculture, in March 1990. The functions of GSIU include:

- registration of seed growers and seed dealers.
- field inspections of breeder, foundation and certified seed production farms.
- seed testing and purity analyses in the laboratory.
- seed certification.

- training of seed inspectors and seed producers in internal seed quality assurance, seed processing and packaging.

Seed inspectors were recruited and 163 seed growers registered in 1990. A two-week training course on seed production, field inspection, seed testing and seed storage was held in Kumasi in April 1990 for 52 seed inspectors and Extension Service Agents of the Ministry of Food and Agriculture.

The seed inspectors are posted to the various seed production areas which have been grouped into five zones with the regional cities as centers as follows:

Zone 1. Ho for Volta Region

Zone 2. Winneba for the Central and Western Regions

Zone 3. Accra for Greater Accra and Eastern Regions

Zone 4. Kumasi for Ashanti and Brong Ahafo Regions

Zone 5. Tamale for Northern, Upper East and West Regions

The inspectors inspect seed fields and educate growers on seed production practices. In addition, a technical advisory and field monitoring team of seed inspectors are sent around to explain Government Policy on privatization of the seed industry to seed growers.

In 1992, the GSIU inspected and certified the following quantities of crop varieties:

Foundation Seed

Maize	-	14 tons
Soybean	-	6 tons
Groundnut	-	0.5 tons

Certified Seed

Maize	-	490 tons
Rice	-	142 tons
Cowpea	-	8 tons
Soybean	-	35 tons

The National Seed Service

The National seed Service (NSS) was established within the Department of Crop Services in September 1990. The functions of the NSS are as follows:

- To provide leadership and technical support for the development of the seed industry, and fosters the development of the private seed enterprises, seed producers and sellers.

- To serve as the secretariat of the National Seed Committee (NSC) and implement policies and programs developed by NSC.

- To plan training courses on all aspects of the seed industry for execution.

- To co-ordinate the activities of all agencies involved in the development of the seed industry.

The NSS has a Director appointed to oversee its activities. However, the operations of the service, like the NSC it has set up, are unofficial. Their operation can only be legalized after the promulgation of the seed law which still awaiting parliamentary approval. As a result no firm decision can be taken by the service now.

Among the activities undertaken by the NSS, are meetings held for the beneficiary institutions of the APPP supported privatization of the seed and fertilizer industries, in September and November, 1992. The NSS also launched a national seed sales promotion program in March 1993 to create awareness of the availability of improved seeds of many crop varieties currently being handled by the private sector for sale to farmers, backyard gardeners and the general public.

Seed Growers Association (SGAs)

Three seed growers associations were formed with the help of the NSS to represent a cross-section of the growers in the country:

a. Southern sector Seed Growers Association

b. Ashanti and Brong Ahafo Seed Growers Association

c. Northern sector Seed Growers Association

These associations are meant to strengthen the private sector in the operations of the seed industry, by among other things serving as a strong advisory body. Membership of the SGAs stands at 102 in 1993. These associations face financial difficulties as contributions from members are unable to make them perform as expected.

The National Seed Committee (NSC)

In addition to government officials the NSC presently has 3 representatives from the SGAs attending meetings. The committee is supposed to address policy issues, examine the role of both the public and private sector in the industry, and to review the proposed Ghana Seed Industry projects.

As indicated earlier, even though meetings are held no firm decisions can be made for lack of legal backing. It is important that action the promulgation of the seed law is expedited.

		Salintuya I	150
		Salintuya II	200
4.	Rice	GR 19	400
		GR 21	350
5.	Groundnuts	F-mix	30
		Sinkarzei	60

These new streak resistant maize varieties: Okomasa, Abeleehi and Obatanpa have been released by the Fumesua station. The Nyankpala station also released the variety Dorke. Breeder seed of these varieties are already available for multiplication to foundation seed.

CRI maintains close working relationship with farmers, seed growers and all institutions dealing with restructuring of the seed industry.

Farmers would like to have improved maize varieties with less chaffy flour ideal for preparing local dishes, better storability of untreated cobs, and smaller size of kernels.

Farmers have indicated that the frequent release of new varieties of maize lead to confusion. Farmers require time between variety releases in order to study them well and disseminate seed to a greater majority of their neighbors.

At present, the seed production chain from breeder seed to certified seed is complete only for maize, rice cowpea and soybean. This means only these crops can be certified.

There is the need to certify seed of other crops and this can only be accomplished if CRI releases breeder seed materials of these crops. Limited funding has slowed down research in the other crops.

Training

A workshop on the Ghana Seed Industry was organized at Kumasi in April 1991. The theme for the workshop was: **"Private sector participation in high quality seed production for increased crop yields"**. The purpose of the workshop was to inform seed growers, farmers, researchers, donors and policy makers the Ministry of Food and Agriculture's (MOFA) policy on privatizing the production and sale of seed. This workshop attracted 355 participants.

Since the inception of APPP, 35 different training programs have been held and as many as 437 registered and potential seed growers have been trained. It is reckoned that as more such training programs would be needed to regularly upgrade the knowledge of those already in the industry and also to train new entrants.

Foundation Seed Production

Grains and Legumes Development Board (GLDB)

The Grains and Legumes Development Board (GLDB) produces foundation seed by obtaining breeder seed from CRI each year. This arrangement is to ensure that GLDB produces foundation seed of high quality. It also prevents GLDB from competing with private seed growers in the production of certified seed. Field inspection and certification of foundation seed is carried out be seed inspectors of the GSIU.

GLDB produced the following quantities of foundation seeds during the 1990/91 cropping season:

	Crop	Variety	Quantity (tons)
1.	Maize	Okomasa	10
		Abeleehi	4.5
2.	Cowpea	Asontem	1.5
		Bengpla	1.5

It is not profitable for GLDB to produce only foundation seed at present since mainly open-pollinated varieties and not hybrids are being produced. Farmers therefore replant seed from their fields for 2 or 3 years before buying new ones. The Board has therefore diversified into multiplication of planting materials such as cassava, yam and plantain suckers.

Presently, foundation seed is always available on time for sale to seed growers.

Certified Seed Production

Seed Growers

So far 163 seed growers have been registered by the GSIU, but only 90 were as at the 1993 cropping season growing certified seeds. Many of the registered growers are faced with financial and marketing difficulties which have put them out of business.

Most seed growers do not have a ready market for their seed. They sell small quantities at a time through dealers and farmers. Sale revenue is generated in bits and growers find it difficult to invest this in the seed business or make concrete plans based on revenue estimates.

Many dealers accept small quantities of seed from growers on credit. Growers, therefore, have to visit the dealers very often to collect cash for seed sold and replenish stocks. Since growers sell seed through many dealers, they incur high costs with this arrangement.

Following the training organized for seed growers and the regular inspection by GSIU seed inspectors, farmers are producing good quality seeds of an average germination rate of 95%. Nonetheless, yield per unit area recorded by growers is low and some growers still use portions of their farm yield as grain.

Even though the potential yield of improved maize varieties is 5mt/ha, yield figures from growers range between 0.6 and 2.5mt/ha. Intensive extension and training would be required to improve growers' application of the right technologies that go with improved seed production to increase their productivity.

Table B2 shows the annual seed production for maize from 1990 to date.

Table B2 Summary of Annual Maize Seed Production and Sales Figures from 1990-93

YEAR	NO. OF GROWERS	ACREAGE	QTY PRODUCED (M.T.)	NO. OF DEALERS	QTY. SOLD (M.T)
1990	52	723	281.3	-	281.3
1991	65	876	293.3	-	293.3
1992	82	1071	403.5	80	382.1
1993	90	1665	-	96	-

Source: Crop Services Department, MOFA.

It is apparent from the table that seed production is very far below the program target of 1320mt for 1989 to 1840 in 1995. The total maize seed production for 1992 was only 26% of the 1991 target of 1552mt. However, the fact that more acreage is put under cultivation and a modest increase is recorded in the number of growers annually is indication that given time the privatization of the seed industry would yield significant results.

Generally the vast majority of seed growers are very small scale. The largest is Ejura Farms, a former parastatal, which produced about 50mt of maize seed in 1992.

Many of the farmers who have entered seed production have been collaborators of the SG2000 extension program. these farmers have been offered advice and training in seed production, and many have been provided with small-scale equipment (or loans for such), including shellers, tarpaulins, sieves, and drying cribs. In many cases, the staff of GSIU circulate among growers at harvest, providing advice, loans of equipment, bagging material, as well as certification itself. A number of seed producers also use the facilities of several ex-GSC processing plants to prepare seed.

SG 2000 has worked with GSIU to provide a range of packaging and labelling material, and maize seed in now available in bags ranging from 45kg down to 1kg. The smaller sizes are made of clear plastic, which helps boost the confidence of the smaller-scale purchasers. All growers buy their foundation seed from GLDB; many have had loans to do this.

Marketing

The current seed marketing situation is complex. There are many channels, ranging from farmers turning the seed over to another family member to market locally, to commercial companies contracting with a number of growers. SG2000 has established opportunities for growers and dealers (mostly those who sell agricultural chemicals) to get together, and a number of marketing contacts have been established in this way. Nevertheless, the channels are uncertain enough that a fair proportion of maize produced as seed is sold as grain, either to provide immediate cash or because of uncertainty about markets.

Private seed enterprises

A few companies are presently engaged as seed enterprises. The enterprises contract growers to cultivate seed which they market. These enterprises usually provide credit to growers for input purchases and for hiring of labor. The credit is paid in kind with seed. Other operational costs are normally taken care of by the growers.

Shortage of capital compels seed enterprises to make part payment at the time of collecting seed and the balance paid immediately after sales. This problem affects the grower who needs the money for financing his activities.

Seed dealers

These are mostly agrochemical retailers who have included seed sales in the trade since the inception of the privatization of the seed industry. The dealers already have contacts with farmers who buy their agrochemicals, therefore it is easy for them to sell seed to the farmers as an input package. The largest of these dealers is Aglow, which contracted farmers to produce about 75mt of maize in 1992. These dealers have widened the scope of marketing of improved seed.

National Seed Reserves

The government has recognized the need to store seed reserves as insurance against disasters.

The breakdown is given below:

Table B3 National Seed Reserves

YEAR	CROP		
	MAIZE	COWPEA	RICE
1991	105.8 mt	3.7 mt	-
1992	122.4 mt	10.5 mt	0.8 mt

These reserves are being managed by the Grain and Legume Development Board in their airconditioned warehouse at Kumasi, Winneba and Ho and in an open Warehouse at Tamale.

It is significant to note that in June 1992, planting materials from the reserves were distributed to victims of the Gonja/Nawuri conflict in the Northern region and to drought victims in the Upper East region.

GENDER CONCERNS

Women play a significant role in the agricultural production system in Ghana. Their role in providing labor and services encompasses all the activities related to land clearing, planting, weeding after crop establishment, harvesting, transporting from farm to village, processing and marketing of produce and seed dealership.

It was significant to note, however, that despite their deep involvement in the agricultural sector, women, as a distinct group, were not specifically taken into account in terms of their role and interests in the program design, appraisal and implementation stages.

In spite of this gender insensitivity in the seed privatization program at all levels of execution, it was observed that women participated in certified seed growing and marketing of improved seeds. In 1993 there were 26 women registered seed growers and 5 dealers as against 137 men farmers and 91 men dealers.

FINDINGS

1. The GSC has been disbanded, however the GLDB has been assigned the role of producing foundation seed from breeder seeds produced by the CRI. Funding under APPP and single year PL 480 title was used to initiate the privatization effort from 1989 to 1991 several profound effects.

2. A National Seed Service and National Seed Committee have been formed but these are operating without legal backing as the National Seed Law is still awaiting parliamentary approval.

3. Anyone whose operation and product is certified by the GSIU is free to produce seed and MOFA and SG 2000 are actively encouraging individual growers to take advantage of this opening.

4. All growers buy their foundation seed from GLDB. The vast majority of growers are operating on a very small scale (10-20 ton output) and their numbers have been increasing.

5. Many new entrants of the seed growing industry know what they are about because they have been collaborators of SG the 2000 extension program. These farmers have been offered advice and training in seed production and many provided with small scale equipment or loans for such including shellers tarpaulins, sieves and drying cribs.

6. A total of about 80 growers produced about 403 tons of maize seed in 1992. This is only 26% of the program target, but it is hoped that the increasing numbers of growers entering the industry annually would help meet the demand for improved seed in the country.

7. The MOFA and SG 2000 have worked together to provide packaging and labeling material and maize seed is now available in bags ranging from 50kg down to 1kg. The smaller sizes are made of clear plastic which helps boost the confidence of the small scale purchasers.

8. The current seed marketing situation is evolving slowly and several marketing arrangements are being established. They range from farmers giving their seeds to market women to market locally, to commercial companies contracting with a number of growers and agrochemical dealers who are now selling seeds produced by their clients. These markets are not certain enough and need to be developed and strengthened.

9. Although three regional seed growers associations have been formed they are still struggling to be functionally effective to address the problems facing the industry.

10. MOFA still takes responsibility for organizing training for seed growers. It is also engaged in marketing by undertaking to advertise on behalf of growers. These are activities which should be organized by the growers themselves with improved privatization. The private sector at present would require both financial and logistic support to undertake such activities.

11. The future of the seed processing aspect of the industry is not clear. The former GSC plants are operated currently by GLDB, although the future of this is uncertain. Everything from hand-shellers and sieves to commercial equipment is currently being used, but these are given or at least subsidized to growers. It is apparent whether growers themselves or the marketers are more likely to assume responsibility for processing. These are issues which the NSC and the SGAs should address.

RECOMMENDATIONS

1. Support for SGAs - To ensure that privatization of the seed industry takes hold, the seed growers association should be assisted to take over some of the functions presently being performed by MOFA. For instance, the association should be assisted to conduct its own training programs; the SGAs should also be able to establish its own internal quality assurance systems and do its marketing promotion. Donor assistance to the growers in this regard will be in the right direction in promoting privatization of the seed industry.

2. Breeder seed - Crop Research Institute should be supported financially to intensify its efforts to provide breeder seed of other crops such as sorghum, millet, vegetables and yams which are already being sold commercially.

3. Foundation seed - For GLDB to survive as a support for the seed enterprise, it must rapidly diversity is operations to include the production of foundation seed materials of roots and tubers like cassava sticks, yams, sweet potato and plantain suckers.

4. Training - Training in seed production and seed technology for both seedsmen and seed producers must be continuous activity. These training sessions should aim at improving growers yield per unit area.

5. Public awareness - A brochure on the Ghana Seed Industry starting from 1990 should be published to highlight the achievements made so far, the constraints faced and the future outlook. Public awareness about what goes on in the seed industry should be sustained.

6. Involvement of NGOs - Involvement of NGOs in the seed industry should be intensified. The SG 2000 program already has vast experience and knowledge in both community and formal seed activities in Ghana, and is prepared to share such knowledge with other NGOs.

   NGO support should be geared towards encouraging private grower participation and the development of effective distribution and marketing systems.

7. Women seed growers - The number of women registered as seed growers is very small. The GSIU and Women in Agricultural Development (WIAD) should encourage the participation of more women seed growers in the seed program.

8. Further Study - It was good to have encouraged the growth of a range of seed growing and marketing arrangement but at present no major entrepreneur has emerged as winner. There needs to be a study and decision regarding the most viable options in seed processing, storage and marketing to ensure the establishment of a strong seed industry. Such a study could be supported with the limited donor support available.

ANNEX C

RURAL INFRASTRUCTURE

1.1 Background

Inadequacy of feeder roads poses a serious constraint on agricultural production and marketing in Ghana. Increased access to input-output marketing is often impeded in the process. The benefits of investment in the improvement of feeder roads are varied, and may include the following:

i. timely evacuation of agricultural produce from areas within the road corridor to market centers;

ii. reduction in vehicle operating cost, making it more attractive for vehicles to operate in the road corridor and facilitating the movement of goods and passengers;

iii. reduction in commodity and passenger transport charges;

iv. improved access to a variety of social, economic and technical infrastructure to improve the quality of life of rural dwellers in the road corridors;

v. in the medium to long-term, increase in agricultural production resulting from larger acreage put under cultivation by farmers and improved seed and fertilizer supply and improved agricultural extension services.

Ghana had a good road network but due to inadequate or no maintenance, by 1984, the condition of about 70% of the rural roads had deteriorated to such an extent that only four-wheel drive vehicles could transit. Not only was accessibility to most remote areas impeded, transport costs also soared. For example, a study by MOFA indicated that poor roads account for up to 70% of the difference between farm gate price and the retail price of some commodities. With rehabilitation and maintenance of feeder roads, farm to market transport cost on poor roads could be reduced significantly.

Since 1983, feeder roads rehabilitation and maintenance have been accorded top priority in Ghana's Economic Recovery Program (ERP). This is in recognition of the importance of improved feeder road network in efforts aimed at poverty alleviation and improvement in standard of living/quality of life.

1.2 APPP Feeder Roads Component

The APPP (1988 - 1991) planned to provide US$ 6.0 million for the rehabilitation of feeder roads in three tranches, of US$ 2.0 million each. The first tranche, US$ 2.0 million was provided for 1989 DFR budget support. Considering the need for feeder roads improvement and the improved absorptive capacity of the DFR

however, the second tranche was raised from US$ 2.0 million to US$ 5.0 million. As a result, the USAID funding level moved from 11% in 1989 to 16% in 1990 of DFR budget. Funding of DFR in the third tranche amounted to US$ 4.5 million. Target outputs set for rehabilitating and maintaining non-cocoa feeder roads for each of the three years beginning 1989 were as follows:

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

In addition to APPP funding DFR received US$ 4.5 million funding in 1991 under FY 1991 PL 480 Title III to continue rehabilitation and maintenance of an extra 310km of non-cocoa feeder roads.

1.3 Performance and Accomplishments of DFR

The DFR received assistance totalling ¢1,7 billion over the project life. The breakdown of financial assistance received under various tranche are as follows;

Tranche 1	¢ 460.00 million
Tranche 2	¢1,180.00 million
Tranche 3	¢1,280.00 million
FY PL480 Title III	¢1,700.00 million

A total length of 2980km (including 310km of PL480 target) of non-cocoa feeder roads was to be rehabilitated. In addition, 300 culverts were to be provided under APPP. Out of the total length of road to be rehabilitated, 41.5% (1237.95Km) was awarded on contract (Table C1).

By the end of April 1993, 30.4% (995.55km) of the length awarded had been executed and 351 culverts provided. The total expenditure on executed projects totalled ¢3,905.95 million (Table C1).

It is indicative from the gaps between set targets and outputs that the overall performance within the sector was below average. This however, could not be blamed on DFR. The non-achievement of project targets was primarily due to extensive deterioration of greater portions of the total length of road to be rehabilitated with its attendant cost over-runs. Thus the scope of work and investment costs changed considerably during the time lag between project formulation and implementation. For example, 2100km length of road

Table C1 Rural Infrastructure Components: Targets, Funding Levels and Accomplishments

Tranche	Activity	Target (km/No)	Length Awarded (km)	Tender sum (¢m)	Length executed (km)	Expenditure (¢m)
1	A	700	192.75	118.96	176.5	78.30
(1989)	B	155	59.60	163	59.6	120.42
	C	35	81.30	319.92	61.4	216.7
	D	100	15	31.15	14	25.22
2	A	700	105.65	94.13	34.2	25.63
	B	155	73.30	277.41	42.01	52.99
(1990)	C	35	211.15	785.50	142.09	445.57
	D	100	19	-	6	1.89
3	A	700	12.0	8.30	8.9	6.40
+ PL-480 Title III	B	285	214.5	1683.57	201.55 + 178	1204.52
(1991)	C	215	286.70	1849.41	268.30 + 28	1556.37
	D	100	125	198.58	125	170.94
Total		2980km + 300	1237.95km + 159	5531.73	995.55km + 351	3905.95

A - Regrading/Reshaping
B - Regravelling
C - Spot Improvement
D - Drainage

was targeted to be reshaped and regraded but only 309.75km could be executed within funding capabilities.

With regard to the actual length of road awarded on contract (1237.95km), an impressive performance index of 80.4% was recorded. This is a reflection of the capability of both DFR and local contractors engaged on the program. Through training and procurement of road maintenance equipment institutional building was greatly enhanced resulting in the increased absorptive capacity of DFR.

1.3.1 1st tranche accomplishment

In 1989, the Department of Feeder Roads was allocated ¢460,000.00 million as its portion of the first tranche. The entire amount was used on road construction. A total distance of 334 km awarded on contract under the first tranche at a tender price ¢711.99 million. A distance of 288.0 and 12No. culverts representing roughly 79.8% the length awarded on contract was completed that year at a cost of ¢567.94 million. The regions covered under this tranche were Upper West, Upper East, Northern, Brong Ahafo and Volta (Table C2).

The total value of contracts awarded exceeded the tranche allocation. This was however done with the intention that the extra would be absorbed in the 1990 programming under the second tranche. The entire 85 kms awarded on contract in the Upper West Region was completed on schedule.

Upper East and Northern Regions had persistent set back due to continuous heavy rains in 1989. In the Upper East Region out of a total of 22.7 km awarded only about 5.2 km could be completed on schedule. In the Northern region, there was virtually no progress on the rehabilitation of the 16 km Tama - Banyim feeder road due to continuous flooding and the subsequent re-designing of the project.

In the Brong Ahafo region, 56 km of road network was awarded on contract for rehabilitation. Again due to adverse weather conditions, only work on the 11.8 km Dormaa-Aboabo No.1 feeder road which involved reshaping and construction of pipe culverts could be completed on schedule.

Projects in the Volta region could not take off as planned because there was a temporary ban on the award of road contracts in the region. This ban was however lifted later in the year, by which time very little progress could be achieved.

1.3.2 2nd Tranche Accomplishments

DFR was allocated ¢1.18 billion under the second tranche. A total length of 396.8km was awarded on contract at the tender price of ¢1.29 billion. as at December,1990, 307.65km representing 78% had been completed at total cost of ¢1,101.88 million. The Ashanti and Eastern Regions were included in the DFR's 2nd tranche program. (Table C3)

Table C2

DEPARTMENT OF FEEDER ROADS
USAID/APPP COMPLETIONN REPORT
GRAND SUMMARY AS OF 4/9/92
TRANCHE 1

REGION	TOTAL LENGTH AWARDED (KM)	TOTAL TENDER SUM MILLION ¢	TOTAL EXPEN-DITURE AS OF 4/9/92 ¢M	TOTAL LENGTH COMPLETED (KM)	TOTAL BAL. AS OF 4/9/92 MILLION ¢	REMARKS
Volta	154.6 8No.	334.80	321.75	125.6 12No.	103.05	Positive balance represent unutilised fund and negative balance represent additional fund due additional works. All projects completed except one in Volta region which was determined and reawared as two contracts in 1992.
Brong Ahafo	55.5	174.95	134.59	55.5	40.36	
Northern	16.6	58.35	58.59	16.6	- 0.24	
Upper East	22.7	81.85	89.70	22.7	- 7.85	
Upper West	85.0	62.04	53.31	85.0	8.73	
GRAND TOTAL	334.4	711.99	567.94	305.4	144.05	

Table C3

DEPARTMENT OF FEEDER ROADS
USAID/APPP COMPLETIONN REPORT
GRAND SUMMARY AS OF 4/9/92
TRANCHES 2

REGION	TOTAL LENGTH AWARDED (KM)	TOTAL TENDER SUM MILLION ¢	TOTAL EXPENDITURE AS OF 4/9/92 ¢M	TOTAL LENGTH COMPLETED (KM)	TOTAL BAL. AS OF 4/9/92 MILLION ¢	REMARKS
Volta	57.0	312.90	240.21	34.4	72.69	One Project still on-going
Eastern	27.9	104.60	111.60	27.9	- 7.00	100% complete
Ashanti	73.4	247.48	311.36	73.4	-63.88	100% complete
Brong Ahafo	90.9 6	303.34	332.30	90.9 6	-28.96	100% complete
Northern	63.6	136.50	58.47	63.6	1.01	One contract was cancelled for lack of performance Bond
Upper East	38.6	60.07	58.73	38.6	1.34	100% complete
Upper West	46.0	131.69	121.98	46.0	9.71	
GRAND TOTAL	396.80	1296.58	1234.65	374.4	-15.09	

An amount of ¢ 6.0 million was also voted for DFR's training program targeted at its professional, technical and administrative staff. The amount could however, not be utilized during the year.

A sum of ¢ 464 million was allocated for the purchase of maintenance equipment under the second tranche. In addition to extending its regional coverage in 1990, DFR procured routine road maintenance equipment, to support its road maintenance program. Included in the list of equipment purchased were:

Supplier	Item	Value
M/S Nishizawa — Importer & Exporters	16 valmet tractors	US$217,728.00 (plus 480,000 local charges)
M/S Salbeck Ltd.	5 Mitsubishi pick-ups 12 Tipper Trucks	¥66,345,628 CIF local charges
M/S Constr. Machinery supp.	8 New Bomag Pedestrian Vibratory Roller 8 new Pedestrian roller trailers	£58,716.00
M/S Agric. Engineer Ltd.—	16 fixed Body Trailers 8 water tank Trailers	¢22,084,700
IDCO Ltd. Accra	16 Suzuki Motor bikes 32 Crash Helmets	¥182,517.60 (551,360.00 local charges)

1.3.3 3rd Tranche Accomplishments

The DFR awarded contracts in June 1991 after the tranche allocation of ¢1.2 billion had been lodged in its account in May 1991. The amount voted could not cover purchases of road maintenance equipment. Work awarded on contract totalled 238km and 118No. P.C. As at September 1992, 220.5km length of feeder road had been rehabilitated and 121No. PC completed at a cost of ¢1.64 billion (Table C4).

Training funds allocated during the second tranche was utilized in the third tranche. Seminars, workshops and field training were organized for DFR professional, technical and administrative staff

Table C4

DEPARTMENT OF FEEDER ROADS
USAID/APPP COMPLETIONN REPORT
GRAND SUMMARY AS OF 4/9/92
TRANCHES 3

REGION	TOTAL LENGTH AWARDED (KM)	TOTAL TENDER SUM MILLION ¢	TOTAL EXPENDITURE AS OF 4/9/92 ¢M	TOTAL LENGTH COMPLETED (KM)	TOTAL BAL. AS OF 4/9/92 MILLION ¢	REMARKS
Volta	35.1 33No.	364.09	223.42	35.1 33No	140.67	
Eastern	12.1 14No.	121.60	113.57	12.1	8.03	
Central	54No.	83.90	64.94	54No.	18.96	
Ashanti	28.9 24No.	179.60	162.75	28.9 24No.	16.85	
Brong Ahafo	69.3	458.48	445.85	69.3	12.63	
Northern	31.9 11No.	106.50	80.56	15.6 11No.	25.54	
Upper East	6.0 3No.	63.93	38.39	6.0 8No.	25.54	
Upper West	16.7	114.70	92.19	16.7	22.51	
GRAND TOTAL	238.9 118No.	2005.51	1638.99	220.5 130No.	366.52	

100

under the training component. the number of personnel who benefitted from the training totalled 264. An amount of ¢ 5.07 million out of the ¢ 6.00 million allocated was disbursed.

1.3.4 FY 1991 PL 480 Title III Accomplishments

Originally, a total budget of ¢2676.46 million (US$ 5 million) was earmarked for the implementation of 4 projects by DFR. Included in the list of projects were re-graveling/improvement, spot improvements and culverts, establishment of labor-based road construction school at Koforidua and supply of equipment to labor-based contractors. (Table C5). The original budgeted amount of $5 million was however reduced to $4.5 million before the physical implementation phase.

Table C5: Allocation of funds to projects, PL 480

Activity	Target	Budget (¢M)
Re-graveling and improvement	130 km	415.8
Spot improvements and culverts	180 km	608.8
Koforidua Training school	-	869.4
Equipment for labor-based contractors	12 sets	782.46
Total		2676.46

Source: MFEP, 1993

Non-cocoa rural roads were selected for funding. Road works covering a total distance of 259.5km was awarded on contract at the cost of ¢1766.35 million (Table C6). The target for the single year PL 480 program was however 310km, comprising mainly spot improvements, re-graveling and drainage structures.

Table C6: Funding status, FY PL 480 roads

ACTIVITY	LENGTH AWARDED KM	CONTRACT SUM ¢M	PAYMENTS AS AT MARCH, 93 ¢M	LENGTH AND CULVERTS COMPLETED (KM & NO.)
Regravelling and tarring	166.9	1493.68	1095.63	168.9 + (147)
Regravelling	47.15	108.89	108.89	33.65 + (31)
Spot improvement and culverts	44	82.38	90.40	44 + (28)
TOTAL	259.5	1766.35	1294.62	246.55km + (206)

Source: MFEP, 1993

Out of the targeted 310km, 260km was executed. This was attributed to increased costs resulting from relatively long time lapse (on the average two years) between inspection/evaluation and award of contracts. Roads earmarked for rehabilitation further deteriorated during the said period with the resultant change in scope of work and costs during the physical implementation stage.

1.4 Monitoring Studies

The evaluation team took trips to Brong Ahafo, Ashanti and Volta regions to inspect some of the feeder roads rehabilitated under the program. These were:

Brong Ahafo

a. Improvement of Subinso-Mansie (11km/1st and 2nd tranche)

b. Regravelling of Subinso-Nchiraa road (10.7km/1st tranche and 1-1.0 PC.

c. Reshaping of Sunyani-Wawusua (10.4km/2nd tranche)

d. Improvement of Wenchi-Nwoase (9.2km/3rd tranche)

Ashanti

a. Regravelling of Ahnkor-Kyekyewere (33.6km/tranche 2)

b. Improvement of Kyekyewere-Anyinasu (18.10km/tranche 2)

c. Improvement of Kofiase-Wiamoase (12.70km/tranche 2)

Volta

a. Logba Alakpati-Logba Tota (6.9km/tranche 2)

The team observed that all the projects had been completed and the quality of work done by the contractors was of high standard. The team observed that certain portions of the road were being eroded and the verges overgrown with weeds. In an informal discussions with local inhabitants along the improved road corridors, they expressed gratitude to GOG and the donors for the timely assistance.

They indicated that the volume of traffic has shown a marked increase since the roads were rehabilitated. Thus the previous problem of having to wait for a number of days before transporting produce by tractor-trolleys to the market centers was virtually non-existent along improved corridors. The team present below some other observations:

a. The team was impressed by the dedication, capability and by and large, good quality of work of DFR staff. Many of the critical questions which we asked had either a rational explanation or were apparently about to be rectified. The DFR has instituted systematic training and development programs for their mid-level engineers who lack experience and seasoning;

b. The quality of work so far done on some of the improved road was of high standard;

c. DFR had constructed some fords or drifts instead of the regular pipe or box culverts in Volta Region where the topography is relatively flat and the flood discharge is large.

d. Scour checks designed by DFR from the labor based technology had been provided on step roads to prevent the menace of erosion of road surfacing;

e. All culverts constructed were sited properly and functioning well.

1.5 Socio-economic Impact

Data from two impact studies undertaken by Comptran and Ghanexim with APPP funding confirm that positive socio-economic impacts are being realized along the corridors of rehabilitated roads. Below are some of the observations made in the studies:

The rural communities were happy about the road improvements and expect an improvement in the quality of life;

ii. Frequency of trips of vehicular traffic has increased making it easier to move farm produce to markets and consumption centers;

iii. There has been an increase in the number of traders who visit the improved road corridors to arrange purchase of farm produce. With the increase in business activity, the income of the rural people has gone up;

iv. There has been decrease in passenger and commodity transport charges and decrease also in journey time;

v. Accessibility to social services like hospitals/clinics, schools and banks has increased because of the improved vehicular traffic.

vi. Post harvest losses have reduced considerably due to improved roads and increased marketing activities.

1.6 In-country Capability Building

Training in labor-based technology for DFR technical staff and some selected contractors is provided in Koforidua. This program is now institutionalized with some assistance from USAID under FL-480 III. Again USAID is equipping each of the 12 labor-based contractors with machines costing $160,000.00 as loan payable in 4 years. The set of equipment is as follows:

i.	Pick-up (4WD)	-	1
ii.	Tipper Truck	-	1
iii.	Tractor Heads	-	3
iv.	Trailers	-	6
v.	Pedestrian rollers (plate compactors)	-	2
vi.	500 gallon water booster		2
vii.	Hand tools (set)	-	1

The construction of the School at Koforidua and procurement of equipment for the labor-based contractors could not be funded under the single year PL - 480 program.

1.7 Findings/Lessons Learned

1. In road corridors on which spot improvements had been undertaken by constructing either culverts, fords scour checks, the consensus of the ultimate beneficiaries i.e. villagers was that even though there has been some improvement in the level of accessibility, the expectation was that further improvement works involving earth or gravel works, reshaping and compaction would be undertaken to maximize the benefits from the investments in the other major remedial works.

2. The Logba Alakpati-Logba Tota road has been rehabilitated under APPP but had not attracted the expected vehicular traffic since November 1991 because of the steepness of a portion of the road which gradient is estimated to be 14% beyond Klikpo. Such gradients were also observed on some

portions of the Kyekyewere-Anyinasu-Kofiase road in Ashanti region. The situation is worse during the rainy seasons and farmers are compelled to headload their farm produce.

To make such portions of roads all weather roads, the DFR has provided funds from the Road funds to resurface these portions with bitumen and granite chippings this year.

3. There was fierce competition among contractors for APPP projects because of availability of funds at all times to pay for work done. Consequently over 80% of all awarded contracts were completed on schedule and the workmanship in general was very high.

4. Contractors engaged on APPP were extremely satisfied with the prompt payment at DFR headquarters (maximum 2 days) after their certificates had been approved at the regional and district levels.

5. The DFR does not have soil laboratory of their own in any part of the country for quality control. DFR uses the facilities of GHA in the regions. This type of arrangement impedes progress of contractors' work and might result in delay of projects execution.

6. Funds provided in GOG budget as a line item to DFR for feeder roads maintenance are inadequate. Besides they are not released on time. For example, only ¢ 200 million was allocated for maintenance in 1992; and only ¢ 300 million out of the ¢ 1.2 billion budgeted for 1993 had been released and was done at the end of July 1993.

7. Capital intensive contractors were engaged for the rehabilitation of APPP roads. As a result women participation as laborers was very limited.

8. Increase in farm size was not immediately evident in the two impact studies sponsored by DFR in 1992. Multi-year impact studies for the medium and long-term could verify this.

9. Top soil replacement in abandoned gravel pits was not done by contractors thereby posing environmental degradation problems. To forestall the unfortunate situation, an explicit item in the Bill of Quantities (BOG) for all road works in future programs is essential.

1.8 Recommendations

A. DFR Organization and Management

1. The Institutional capacity of DFR including the proposed GOG decentralization policy is of a vital importance to the success of any future USAID sponsored APPP. Arrangement for adequate salary, housing etc. should be made for DFR staff to

enable recruitment and retention of skilled staff.

2. It is recommended that DFR becomes a semi-autonomous authority on a par as GHA and the current World Bank's Organization and Management Study should address the issue seriously.

3. Systematic training of all middle-level engineers engineering technicians, quantity surveyors, and other supporting technical staff should be provided within and outside the country.

4. Well equipped central soil laboratories (at least two) should be provided in the country for effective quality control of all works under DFR. In addition to the central laboratories, all the regions should be provided with mobile laboratory for quality control purposes.

B. Accomplishments

Due to poor performance of some contractors on some projects in Volta Region APPP could not be completed on schedule. It is recommended that DFR should formulate an efficient selection criteria to ensure that efficient and effective contractors are selected for future programs.

C. Construction Strategy

No labor-intensive contractor participated in APPP. However with the training and equipping of 12 Labor Intensive contractors under FY PL 480 title III, it is recommended that DFR should awarded contracts to such contractors to enable them pay back their loans on time. Terms of reference for consultancy design services should, if necessary, be change to reflect this. Labor Intensive contractors are more likely to engage more laborers including women (about 30% of the labor force) from the villages along the corridor of the road to be rehabilitated and maintained. Thus the villagers would earn extra income to either increase their farm sizes or buy improved seed or fertilizer to increase production.

It is worthwhile to note that applying labor-base technology for rehabilitation and maintenance of feeder roads using the private sector in Ghana has resulted not only in a 50 % reduction in foreign exchange cost to the country but has also provided gainful employment to the under employed rural labor force. (DFR December, 1991).

D. Sustainability of Maintenance

Improved APPP roads without adequate maintenance is counter productive. GOG is commended for providing a line item in its budget since 1992 for the purpose. It is recommended that the amount voted should be increased substantially and the releases should be made on time to have the desired effect.

DFR in the regions have drawn up comprehensive programs for routine maintenance of all improved roads in their respective regions. However, they lack logistic support. It is recommend that the GOG and the communities should lend the necessary support to sustain the laudable objectives of APPP. It is recommended that the periodic maintenance of the improved roads should be on contract for both Capital Intensive and Labor Intensive contractors on competitive basis.

E. Co-ordination with GOG Agencies

The DFR should still improve the co-ordination among sister agencies connected with the road rehabilitation and maintenance program to reap full benefits from assistance from donors.

F. Donor Co-ordination

The Program Steering Committee of DFR and donor representative in Ghana which has been set up should be strengthened. The committee should meet biannually to monitor and solve implementation problems. It is recommended that the steering committee should arrange an annual joint donor review meetings co-ordinated with yearly supervision mission. The steering committee should also stage mid-year review meeting. The import of this recommendation is that all donors to DFR should have closer coordination and develop a common strategy for more effectiveness.

G. Environmental Protection

For environmental protection, it is recommended that top soil replacement in abandoned gravel -pits should be made an explicit item in the Bill of Quantities for all works.

ANNEX D

APPP SUPPORT FOR EXTENSION ACTIVITIES

ACTIVITIES OF THE DEPARTMENT OF AGRICULTURAL EXTENSION SERVICES (DAES) UNDER THE APPP

Extension services deteriorated during the many years of economic decline in Ghana, such that many farmers fended for themselves. Technology which was available could not be transferred to them. There was little training for frontline extension personnel, who needed to upgrade their knowledge base and communication skills. Furthermore most frontline staff could only reach farmers on foot as they had no other means of transport.

Even though fertilizer and improved seeds were considered to hold the key to higher productivity, the flow of information on improved facilities and technology was recognized as a vital step in achieving success. Consequently, improvement of the Department of Agricultural Extension Services was provided for as a component of APPP. The extension component of the APPP aimed at strengthening extension delivery through:

i. Provision of logistics, including mobility

ii. Support for in-country training for all grades of staff

iii. Developing closer relations between research and extension

iv. Support for field programs in extension

DAES received financial allocations under three tranches from 1989 to 1991.

Tranche 1	¢460 million
Tranche 2	495.7 million
Tranche 3	278 million
Total	1,233.7 million

Presented in table D1 is a summary of the activities that were supported by the various tranches.

a. **Mobility**

The allocation of funds for vehicles, and motorcycles and bicycles constituted a large proportion of the total funding. The large number of motorcycles and bicycles (800) indicates the high priority of mobility enhancement of the frontline extension staff who are responsible for the visitation and training of farmers.

The cross-country vehicles were used in monitoring activities, and the pickup vehicles were allocated to the regional extension heads. This strategy of prioritization enabled the extension service to be mobile at the grassroots level and contact between regional heads and their district officers, and district officers and the frontline staff was improved. This improvement in mobility, as expected, has resulted in the number of visits by frontline officers. It has been observed that increased mobility has greatly enhanced the outreach capacity of the extension service nationwide.

b. **Office equipment and furnishing**

Basic logistic support in the form of office equipment and furnishings was provided under this program to facilitate operations in the District, Regional and National headquarters of the Department (DAES). These items included filing cabinets and office supplies. This support was expected to improve the administration of the DAES.

c. **Field equipment**

In order to enhance support for field programs in extension, various field equipment were purchased. these included Wellington boots, measuring tapes, raincoats, transistorized megaphones, blenders, knapsack sprayers and weighing scales. All these equipment are to enhance the work of the frontline extension officers in their role as disseminators of technology to the farmer.

d. **Test laboratory equipment/Women in Agricultural Development (WIAD) and Women Farmstead Improvement Program (WFIP) demonstration homes**

The extension program was specific in the targeting of women as beneficiaries of funding. To enhance the performance of the "Women in Agricultural Development Secretariat, funding was provided to procure a food processing and preservation equipment and test laboratory equipment to be used in the training programs for women. Construction of farmer demonstration homes was also funded under the "Women Farmstead Improvement Program" (WFIP) to serve as training centres for women in the Ashanti and Eastern regions. These facilities were to enhance the training of rural women in food processing and improved methods of cooking various dishes and healthy farmstead living.

e. **Primary inputs**

Funds for farm inputs including fertilizers, agrochemicals and seeds were allocated under the program to be used for the establishment of extension test plots on farmers' fields. These test plots are used to demonstrate the packages for improved production of crops especially maize and cowpea. Some inputs were also allocated to participating farmers on deferred payments basis to help them work alongside the frontline extension officers. This

is to ensure parallel development and quick adoption of efficient technology.

f. **Houses**

In order to accommodate some staff of the department, three (3) houses were purchased under the program.

g. **Extension Research linkages**

An activity included in the program was the funding of research extension linkages. Funding was provided for this activity in order to equip extension staff with the requisite research information which could then be processed for easy assimilation by the farmers.

Training

Summary of the training package for extension staff and farmers is presented in table D2.

Training was grouped under various categories including conferences, seminars, workshops courses etc. There were thirty six (36) different programs from 1989 to 1991 of which 33% constituted workshops and 50% constituted courses. This shows the importance attached to mass training using these methods. A total of 3208 extension officers and 1566 farmers benefitted from the training programs, during the three years of program implementation.

It is also significant to note that (a) the training was geared towards the provision of technical knowledge to the extension officers and the sharpening of skills of all grades of staff (university training, conferences and review meetings for senior staff) and (b) there was a high priority goal for training farmers during the initial stages of the program (1st tranche) together with the extension officers (table 1). This as expected would enhance interaction and the building of relationship between extension officers and farmers. This interaction would be profitable during subsequent years especially in establishing contacts with farmers who would be willing to have demonstration test plots on their farms.

The training focussed mainly on seed production and processing courses, production handling and grading workshops, food processing technologies for women and diploma training for some senior staff. Maize, rice cowpea and roots and tubers which are the main staples in Ghana, were the main crops dealt with in the training. The training covered the whole range of issues and crops and therefore, gave a broad base character to the program.

FINDINGS

a. **Mobility**

Studies have shown that before the onset of he deterioration that occurred in the DAES, the extension officer - farmer ratio was about 1:2500. However, due to lack of adequate funding, no funds were allocated for purchase of vehicles, bicycles and motorcycles and other logistic support for frontline staff and their supervisors. This greatly reduced their mobility and logistics supplies they needed to do their work efficiently. During this period, prior to the support from the APPP it was estimated that only 25% of farmers were being visited by extension staff, thus the actual extension officer-farmer ratio in practice 1:624.

It is significant to note that during the period of implementation of the APPP, there was no significant increase in staff number,however the funding from APPP resulted in greater mobility, hence frequent visits and wider coverage of the farming communities. It is estimated by the DAES that the coverage of the farming community has increased to about 65%. The extension officer/farmer ratio therefore now stands at about 1:1625. This present figure is higher than the target of 1:1150 set in the PAAD.

b. **Training**

The training programs conducted under this APPP covered a wide range of crops grown in all parts of the country (maize, rice, cowpea and roots and tubers) and the subject matter encompassed production to processing handling and grading. The frequent training sessions organized for all grades of extension staff have resulted in increased knowhow. This has enhanced their role as disseminators of improved extension information to farmers. Interviews with extension officers indicate that they have now acquired a good measure of confidence and the perception farmers now have of them is better than it used to be.

c. **Research/extension linkages**

Apart from supporting research/extension linkages financially, the workshops and seminars organized under the training programs served to establish a close relationship between the extension department officers and the research institutions which were involved in work on the different crops and agricultural systems. Such interaction that occurred during training programs served to sensitize each group to the needs of the other and to enhance cooperative effort among them. It is believed that the frequent contacts would be the starting point to enhance the linkages.

RECOMMENDATIONS

1. the large number of demonstration plots and on-farm fertilizer use plots on several vantage farms nation-wise, although costly, was necessary for ensuring the impact needed for widespread increase in agricultural production. However, marketing and related problems like credit unavailability that farmers still encounter have not been adequately resolved. Government needs to intensify its efforts in addressing these related issues which are important for symmetrical growth.

2. Farmers and food marketers must be helped with financial support to improve their storage facilities and to move into processing since gluts have a tendency to digress expansion of production. Donor assistance in this regard would speed up the rate of development of workable systems.

3. There still exist a weak link between the DAES and other research institutions. The DAES should link up in a jointly funded project with the Crop Research Institute and Soil Research Institute to conduct on-farm trials and demonstrations in several locations countrywide with the following objectives:

   - to extend useful crop/soil data directly to indigenous small-scale farmers through periodic field days and provision of information material.

   - to conduct field trails using new crops with export potential and import substitution possibilities with a view to introduce such crops to the country's farmers. Many of these crops are already in the country but they remain largely unknown to farmers as economic crops.

4. The DAES monitoring and evaluation capabilities need to be strengthened to ensure good and timely reporting so that problems in implementation of programs can be detected early, and solutions found for them to improve program delivery.

Lessons Learnt

1. There was a delay in release of funds and that was a major constraint in completing some activities on schedule especially the training component of the DAES activities.

2. During the period of reduced GOG support in the PIP and recurrent expenditure, the APPP together with others supportive programs of extension such as Sasakawa Global 2000 and the ASRP have ensured a non-interruption in the field activities of the DAES.

3. The APPP support created the necessary impact strong enough to attract the World Bank proposed funding of a National Agricultural Extension Project for Ghana.

Table D2 TRAINING PACKAGE FOR EXTENSION STAFF AND FARMERS 1989-1991

Training Program	1989-1991 Total Number	TRANCHES 1			TRANCHES 2			TRANCHES 3		
		Number of Participants		Cost ¢m	Number of Participants		Cost ¢m	Number of Participants		Cost ¢m
		Ext. Officers	Farmers		Ext. Officers	Farmers		Ext. Officers	Farmers	
Conferences	1	-	-	-	20	-	0.24	-	-	-
Seminars	1	450	-	0.78	-	-	-	-	-	-
Workshops	12	262	66	2.78	247	-	10.32	160	-	4.65
Courses	18	1788	1500	9.79	30	-	5.29	390	-	11.74
Review Meetings	2	40	-	1.75	-	-	-	18	-	0.97
Program Planning sessions	1	-	-	-	-	-	-	18	-	0.28
University Trg.	1	-	-	-	-	-	-	5	-	6.58
Information Support	-	-	-	0.43	-	-	-	-	-	-
Total	36	2540	1566	15.53	77	-	15.80	591	-	24.20
Disbursement Year		1989			1990			1991		

ANNEX E : LOGICAL FRAMEWORK: AGRICULTURAL PRODUCTIVITY PROMOTION PROGRAM

Narrative Summary	Indicators	Means of verification	Assumptions
Goal: to accelerate creation of production employment in the private sector, especially in agriculture	increased per capita income, increased employment in the private sector	GOG and donor reports, statistics, GLSS, Cornel U. study	political and economic stability, no external shocks, favorable weather
Purpose: to increase productivity in food crop production	'88 '91 '95 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 adjustment program continued, political and economic stability
Outputs: liberalization of fertilizer supply	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 importation by 8/90	GOG and donor reports, GOG announcements, spot checks in field, evaluation	Structural Adjustment Program continued, no new regulations or policy changes restricting agriculture
Liberalization of seed supply	studies by 5/89, implementation plan for GSC privatization by 8/90, GSC privatization launched by 8/90	GOG and donor reports, GOG announcements, spot checks in field evaluation Bank of Ghana reports, evaluation	
Imported inputs	$20 million in imports	GOG and donor reports, evaluation	
Policy analysis relevant to agriculture	15 policy studies	GOG and donor reports, field checks, evaluation	
Improved rural infrastructure	700 km/yr additional feeder roads maintained or rehabilitated	GOG and donor reports, field checks, evaluation	
Strengthened MOFA extension service	Farmers having contact per agent increases from 350 (1988) to 1150 (1991)		
Inputs: US dollars	$20 million	GOG and USAID reports, audit	stable US-Ghana relations, timely AID reviews
Cedis	¢ equivalent of $20m		
Evaluations	AID, GOG personnel; private consultants		

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ANNEX F

TERMS OF REFERENCE FOR THE EVALUATION OF THE AGRICULTURAL PRODUCTIVITY PROMOTION PROGRAM (APPP) AND THE GHANA FOOD FOR DEVELOPMENT PROGRAM (ONE-YEARPL 480 TITLE III)

BACKGROUND

A. The Agricultural Productivity Promotion Program

In 1989, the Government of Ghana and USAID initiated the Agricultural Productivity Promotion Program (APPP) as a parallel financing effort to complement activities under the World Bank's $53.3 million Agriculture Services Rehabilitation Project (ASRP). The ASRP was designed to strengthen the country's institutional framework for formulating and implementing agricultural policies and programs as a major component of the Economic Recovery Program of the PNDC government.

The purpose of the $20 million APPP was to increase per capita output and yield per hectare in food crop production by supporting activities and policies which aimed at reducing or eliminating major constraints in the process of increasing food crop production in Ghana.

The Program sought to achieve the following specific objectives by the end of its three year life:

* an improved feeder road system which would increase cost effectiveness in agricultural production and marketing;
* an efficient agricultural extension service;
* an improvement in policy planning and analysis in support of the agricultural sector;
* an increased and efficient use of inorganic fertilizers and improved seeds.

Under the terms of the APPP agreement, USAID was to provide a total of $20 million in grant funds over a three-year period to be released in three tranches on the condition that the GOG agreed to carry out policy reforms that aimed at privatizing fertilizer supply and distribution, eliminating fertilizer subsidies and restructuring and revitalizing the seed industry. By the end of FY 1991, USAID had disbursed the full amount of US $20 million after GOG conformed to program conditionalities. Selected program activities were financed with local currency generated by the auctioning of the grant dollars by the Bank of Ghana.

As required under the terms of the Program, USAID engaged the services of a group of consultants comprising a seed industry specialist, a fertilizer industry specialist, and a monitoring and evaluation specialist, under an institutional contract to carry out a mid-term evaluation of the APPP in 1991. The mid-term evaluation submitted by group provided detailed information relating to major findings on achievements and constraints.

The mid-term evaluation addressed several specific questions, including:

* the effect of privatization and price changes on supply and demand of fertilizer and high quality seed;
* factors enhancing or limiting full private sector participation in the supply and distribution of fertilizer and high quality seed;
* quality of administrative and management practices relating to the foreign exchange auctions, disbursement of funds, and accounting practices under APPP.

Specific questions regarding local currency activities such as agricultural extension, feeder roads and policy studies were also addressed by the mid-term evaluation exercise.

A number of relevant observations and recommendations were made in the report to help in addressing implementation problems and to provide the basis for program adjustments.

B. The Ghana FY Food for Development Program (FDP) (One-year PL-480 Title III)

The one-year title III program was a bridge program between the APPP efforts and the multiyear FY 1992--1994 Title III program. Under the program USAID donated 46,500 mt of wheat worth US$6 million to the Government of Ghana in 1991/92.

The initial FDP was designed to build upon the results of the APPP by supporting additional policy reforms essential to privatizing agricultural input supply markets, particularly the market for fertilizer. Achievement of the FDP objective was expected to contribute to the development of an efficient and broad-based agricultural input marketing system in Ghana.

The specific objectives of the program were:

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- to formalize the GOG commitment to privatize the fertilizer and seed industries

- to develop a plan to dispose of all GOG stocks of fertilizer; and

- to initiate actions in the implementation of that plan.

It was expected that, by the end of the project, the fertilizer marketing system would be commercially viable, operating at market-based prices, and reaching an expanded number of farmers. This would lead to greater productivity in agricultural production and expanded agricultural exports.

Under the program, the GOG was required to use local currency proceeds from the sale of the wheat to provide general support to the budgets of the Ministry of Agriculture (MOA) as it continued its program to privatize the seed and fertilizer industries, and the Department of Feeder Roads (DFR) - in the Ministry of Roads and Highways - as it carried out the World Bank assisted National Feeder Road Rehabilitation and Maintenance Project.

Objectives

The objectives of this evaluation are as follows:

- to examine the accomplishments and impacts of both the APPP and the single-year PL-480 Title III program;

- to identify constraints and lessons learned and make recommendations for future USAID intervention;

- to assess the extent to which the recommendations of the midterm evaluation were implemented and the degree to which they modified project accomplishments;

- to measure the extent to which gender issues were incorporated into the projects (ie., the extent to which women were involved in each phase of the project cycle, how the projects affected the lives and conditions of developing country women; the extent to which integrating women in aid activities increased the sustainability of the results; and the availability of gender disaggregated data).

Statement of work

The team shall evaluate the APPP and the FDP by carrying-out, among other things, the following actions:

- determine whether programs met specific objective as identified in program documents;

- measure the programs' achievements against targets at all levels of program implementation and identify impact of program on beneficiaries;

- assess the importance of internal and external factors for the accomplishment of program objectives;

- identify constraints and lessons learnt during program implementation and make recommendations which would help improve the design and implementation of future USAID program initiatives in Ghana;

- review the extent to which the recommendations made in the mid-term evaluation of APPP were carried out by the relevant implementing agencies, the GOG and USAID;

- measure the extent to which gender concerns were taken into account in the projects. Specific information required includes:

  * how were the interests and role of women (compared to men) taken into account in each of the design, appraisal and implementation stages of the two projects;

  * in what ways did women (compared to men) taken into account in each of the design, appraisal and implementation stages of the two projects;

  * what were the effects, positive or negative, of the projects on women's (compared to men's) access to income, education and training, and with respect to workloads, role in the household and community, and health conditions;

  * how were the interest and role of women (compared to men) taken into account in the evaluation stage;

  * were significant factors concerning women (compared to men) overlooked at the appraisal stage;

  * were gender-specific data available for each of the project stages (design, appraisal/approval; implementation; monitoring; evaluation);

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how did women's integration in AID activities affect the sustainability of project outcomes. Were outcomes more sustained (or less sustained) when women were taken into account in AID activities;

are the results achieved by the projects equally sustainable between men and women beneficiaries.

Level of effort

The evaluation will be conducted in Ghana over a four week period, beginning August 2, 1993. The final report is due end of week four.

Agricultural Economist	-	4 weeks
Civil Engineer	-	4 weeks
Seed Industry Specialist	-	4 weeks
Fertilizer Industry Specialist		4 weeks

Reporting Requirements

The team will orally brief Mission and GOG representatives within 3 days after start of contract, discussing outstanding issues related to this evaluation.

The team leader shall be responsible for the preparation of a written report of the evaluation which contains the following sections.

- Executive summary
- Table of contents
- Major findings (Achievements, constraints and impacts on beneficiaries, including women)
- Lessons learnt
- Recommendations

Two 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 end of week four following incorporation of USAID comments. The team leader will submit five (5) hard copies of the report and a copy of the diskette.

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ANNEX G

INDIVIDUALS CONTACTED

USAID

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Mr. E. Duncan-Williams, Regional Engineer, Brong Ahafo
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SEED PRODUCERS

Mr. Samuel Obeng, Seed Growers Association, Cape Coast
Mr. Amusa Belloe, Seed Grower, Winneba
Mr. J.Y. Madugu, Seed Grower, Tamale
Mr. Kyei Brobbey, Seed Entrepreneur, Accra

WIENCO

Mr. H.J.M. Wientjes, Fertilizer Importer

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APPP STUDIES STEERING COMMITTEE

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