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COMMUNITY-LEVEL FORESTRY DEVELOPMENT:

OPTIONS AND GUIDELINES FOR
COLLABORATION IN PL 480 PROGRAMS

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FOREWORD

This report is the product of Peace Corps' formal examination of opportunities for collaboration with AID missions, PVOs and host country governments in forestry development projects supported by Public Law 480: Agriculture Trade Development and Assistance Act, more commonly referred to as the Food for Peace Program.

Continuation and expansion of food assistance in general to developing countries through Public Law 480 was recently recommended by two bipartisan special commissions of the U.S. Government. The President's Bipartisan Commission on Central America (Kissinger Commission) recommends increasing PL 480 food aid, especially on an emergency basis; and the Secretary of State's Commission on Security and Economic Assistance (Carlucci Commission) urges continuing PL 480 food aid, especially in Africa, and using it with other forms of economic assistance. It is timely, therefore, that the AID and Peace Corps forestry community give careful consideration to the overall relationship between food aid and forestry, and examine the possibilities for strengthening and expanding food-assisted forestry projects.

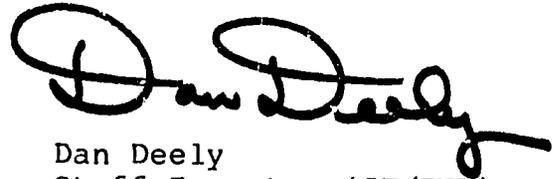
As part of the joint USAID and Peace Corps resources management initiative, Peace Corps' Forestry/Natural Resources Sector has been conducting this examination in support of USAID's assessment of its own reforestation efforts. This assessment, delivered in a comprehensive report to the Congress in FY 1982, as well as additional analysis of USAID forestry project data, lead to the following key conclusion: more than half of all tree planting that is taking place under U.S. Foreign Assistance Programs is actually being accomplished under PL 480 Food Programs, rather than under bilateral development assistance (DA) and Economic Support Fund (ESF) projects.

During FY 1983, the Bureau for Science and Technology (S&T/FNR) redesigned and extended its ongoing Forest Resources Management Project to include amendments that called for further examination of the scale and potential significance of PL 480 involvement in the Agency's forestry program. The USDA Forest Service Forestry Support Program (FSP)--under S&T/FNR's RSSA with USDA--prepared and issued a consultant report entitled FOOD AID AND FORESTRY in March 1984. In the third quarter of 1984, S&T/FNR issued a worldwide cable to all posts, and a joint S&T Bureau/FVA Bureau Memorandum to all Missions to gather PL 480 program information. The Peace Corps study documented here--and carried out in close cooperation with AID's Bureau for Food for Peace and Voluntary Assistance and Bureau for Science and Technology, and with regular communication with the Bureau for Africa--represents a significant contribution to this concerted effort.

We hope that AID, Peace Corps, PVOs and host governments will find this report to be a valuable tool in strengthening existing projects and in considering and designing new community forestry projects. We welcome suggestions and comments on the information and guidelines it presents.



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INTRODUCTION

The primary goal of this study was to identify optimal implementation conditions for community-level forestry activities supported by PL 480, particularly Title II Food-for-Work (FFW). Specific objectives included the following:

- ° to determine the level of field interest--and the feasibility--in strengthening and expanding PL 480 support to forestry activities;
- ° to assess existing PL 480-assisted forestry projects for lessons learned, accomplishments, problems encountered, and the adequacy and timeliness of technical and material assistance;
- ° to identify possible avenues for collaboration among appropriate entities--including USAID missions, PVOs, Peace Corps, WFP and recipient government ministries--which could increase the effectiveness of existing and future programs; and lastly,
- ° to recommend programmatic interventions--such as options for placement of Peace Corps Volunteers--and policy and procedural changes that could enhance the level of technical accomplishment and sustainability of existing and future programs.

Though the primary focus throughout this document is on Title II Food-for-Work and forestry, country-specific information on PL 480 Titles I and III programs is included in the attached annexes. Further examination should be given to these programs--and how to strengthen their effectiveness--particularly the impact that U.S. government policies and regulations and recipient government funding mechanisms have on forestry development projects.

A. The Assessment Process

From the start of this study, the two key issues have been:

- ° the appropriateness of food aid in community-level forestry activities; and
- ° the appropriate role of Peace Corps Volunteers in food aid programs.

Through the analysis of these and other basic program issues, the guidelines and recommendations outlined here evolved. Seven countries in Africa were visited, as well as the World Food Programme (WFP) and the Food and Agriculture Organization (FAO)

in Rome, CARE and Catholic Relief Services (CRS) in New York City, and the Adventist Development and Relief Agency (ADRA) in Washington, D.C.

Several meetings with Washington-based USAID officials in the Bureau for Food for Peace and Voluntary Assistance and Bureau for Science and Technology were held throughout the course of this study. A thorough review of food aid literature was also made.¹

The Field Investigation.² The field investigation was conducted in two overseas trips. The first, from January 31 to March 11, 1984, included Ghana, Senegal and Niger, as well as a one-day stop in Abidjan to meet with USAID officials at REDSO-WCA. The second trip, from April 7 to June 11, included Rwanda, Kenya, Rome, Somalia and Lesotho, in that order. Overall, 400 people were interviewed and 34 project sites were visited.

Because of limited time in each country--an average of 10 days--visits to project sites were prioritized as follows:

- FFW-assisted community forestry activities, particularly nurseries;
- FFW-assisted plantation forestry activities;
- FFW-assisted agricultural or other rural development activities; and
- community forestry activities receiving no FFW assistance.

Where possible, the itinerary included at least one PVO-sponsored FFW project, one WFP-sponsored FFW project, and one forestry project cited by host government representatives as a model for the country.

Throughout the field investigation, interviews were sought with representatives of the Peace Corps and USAID, host government ministries, PVOs, WFP, FAO, international donor projects and community organizations. At project sites, interviews with local people--both men and women--included tree nursery and plantation supervisors, food-for-work laborers, community leaders and farmers.

Much of the information which was collected in these interviews--ranging from technical and project data to personal experiences and opinions related to food aid, forestry and the

¹See Bibliography

²The field investigation was conducted by Bruce Burwell, Steven Joyce and Peg Clement, who is now with CARE in Mozambique. With Mr. Joyce and Mr. Burwell, Ms. Clement co-authored earlier drafts of the country assessment reports.

role of the Peace Corps Volunteer--was organized and recorded by country. These country reports, with conclusions and recommendations, are attached as annexes to this document.

B. BACKGROUND ON PL 480

Public Law 480 authorizes three programs through which the United States can provide food assistance: Title I; Title II; and Title III.

Title I. This program authorizes the U.S. Government to finance the sale of agricultural commodities on concessional terms--low interest rates and long repayment terms--to friendly developing countries. Sales are financed through the Commodity Credit Corporation (CCC) of the Department of Agriculture.

Commodities imported through Title I are generally sold on the local market by the recipient country government. Currencies generated in this manner are available for use by the recipient government. Depending upon the particular country involved, these funds may be allocated to support "self-help" development measures specified in the Title I agreement or for general budgetary support in selected sectors which are also identified in the agreement, e.g., agriculture, health, education.

Title II. The Title II program authorizes donations of U.S. food to developing countries to meet famine or other urgent relief requirements, to combat malnutrition, and to promote economic and community development. Donations are made through U.S. private voluntary agencies (such as CRS, CARE, and ADRA), through the World Food Programme, and through government-to-government grants.

Unlike the Title I and III programs, which are designed to augment the aggregate supply of food within the recipient country, and which channel commodities through existing commercial markets, Title II commodities are generally targeted to specific nutritionally vulnerable groups. Direct feeding programs support mother/child health, school feeding and food-for-work (FFW) activities.

Title III. In 1977, Congress authorized the "Food for Development" Title III program. Title III programs are similar to those of Title I, but provide for forgiveness of the original CCC loan if the recipient government uses the local currencies or the commodities themselves to implement programs in agriculture and rural development, nutrition, health services, and population planning which are specified in the Title III agreement.

To facilitate development planning and to encourage recipient country participation, Title III authorizes multi-year PL 480 agreements of up to five years.

Support to Forestry Development. Over the past three to four years, more than \$80 million worth of Titles I and III local

currencies have gone to support forestry and forestry-related activities in 17 countries around the world. More than 100,000 hectares were targeted for tree planting and other activities under these programs.

Under Title II, and excluding World Food Programme contributions, USAID has provided more than \$30 million in commodities--over 400,000 metric tons--to forestry and forestry-related activities over the last four to five years. More than 50,000 hectares were targeted for these activities, of which 40,000 hectares were to receive direct tree planting with some 49 million tree seedlings.

U.S. contributions to the World Food Programme under Title II are at this time assisting some 65 forestry or forestry-related projects in 44 countries. About 1.6 million metric tons of PL 480 commodities (up to \$228 million) have been obligated for activities on an estimated 1.4 million hectares and for an estimated 29,300 km of line planting.

In short, PL 480 support to forestry development under Title I, Title II Food-for-Work and Title III Food Programs could be responsible for direct tree planting on as many as 1,500,000 hectares in at least 53 countries in the last several years.*

* Food Aid and Forestry: Ongoing and Recently Terminated PL 480 Supported Forestry Projects Worldwide, Clement, Peg, Forestry Support Program, USDA Forest Service, March, 1984; and personal communication, Dan Deely, AID Office of Forestry, Environment and Natural Resources.

ISSUES

A. Forestry

In the seven African countries of this study, population pressure is the major contributing factor to deforestation, decreased soil fertility and soil erosion.

Fuelwood demand alone is far outstripping controlled wood production: most of the resulting deficit is being met through indiscriminate cuttings on small farmer holdings and in the natural forests.

The natural forests are under siege on other fronts as well: not only from illegal charcoal and fuelwood producers; but also from landless farmers, who are burning and cutting the forest to make way for subsistence food crops; and from herdsmen, who are compelled by years of overgrazing to cut trees and shrubs--many of which are nitrogen fixing--to provide fodder for their animals.

Largely due to this unchecked deforestation and overgrazing, greater percentages of arable land are being lost each year to wind and water erosion; crop yields are declining; and food shortages are becoming a chronic reoccurrence. Ongoing drought conditions in many places have escalated this situation to devastating proportions.

The principal constraints hindering government and donor reforestation efforts that were identified in all seven countries include:

- inadequate staffing and funding levels;
- mounting land use pressure;
- unclear ownership; and
- a lack of counterpart community organizations.

Staffing and Funding Levels. Given the magnitude and impact of forestry-related problems across Africa, the forestry sector is grossly understaffed and funded: even with present levels of donor assistance, government forestry agencies are unable to protect the natural forests, let alone carry out plantation forestry or promote woodlot establishment and agroforestry at the community-level on the required scale to meet wood use demands.

Trained foresters and technicians, where they are available, are usually based at department headquarters in the capital or on donor projects. Forestry extension to communities and small farmers is virtually non-existent.

In Somalia, most regional staff positions within the Forestry Department are filled with secondary school graduates appointed immediately after graduation. Lesotho has one national with a forestry degree. Even in Kenya, which has one of the best staffed forestry departments in Africa, the lack of field staff was cited as a major impediment to forestry development.

In Ghana and Niger, where there are government foresters staffed at the regional level, officials cite the lack of funds for fuel and vehicles for the low level of assistance to community forestry efforts. But donor representatives in both countries, and others visited, say the issue is more than dollars and numbers: many criticize government foresters for preferring the policeman's role over the extensionist's role.

Land Use Pressure. Plantation forestry cannot over the long term compete successfully with agriculture for land use; yet it remains the primary approach to reforestation of most governments and traditionally of many donors.

More and more, plantations are being relegated to marginal areas where establishment is difficult and costly, and where favorable growth conditions are minimal, making it increasingly difficult for governments and donors to maintain present rates of reforestation. As one government official in Rwanda said: "The only land left for us to reforest is land that won't produce agricultural crops."

Community woodlot programs have also run up against the problem of land availability. In Senegal, the original design of the Diourbel Community Woodlot Project called for the eventual establishment of 9 hectare woodlots in pilot communities. After four years, there are 36 community woodlots, ranging from 0.21 hectares to 3.0 hectares in size. "Nine hectares is roughly equivalent to 18 or 20 football fields," one forestry consultant said. "Obviously, the original planners didn't have a grasp on how serious the land constraint problems are in this area." As it is, the existing woodlots are seen as insignificant in size, "not even a drop in the bucket," one official concluded, "and hardly worth the work and resources that have been put into them."

Some attempt has been made by community woodlot programs to establish woodlots on non-agricultural land, such as eroded gullies and hillsides, and bas-fonds (depressions): a recent USAID evaluation (Lai, 1983) estimated that in the Diourbel project area alone, there are 40,000 hectares of bas-fonds suitable for tree planting. But as one PVO director in Senegal noted, unless these areas are adjacent to the community, little voluntary participation is likely.

Although greater integration of reforestation efforts into the traditional farming system through agroforestry and family woodlots is widely recognized as the most appropriate long-term

approach given land constraints and other problems, the lack of access at the community level to technical and material assistance--community nurseries and extension personnel--has thus far made this approach unfeasible in most places.

Ownership. Government and donor reforestation efforts have been undermined by a lack of community participation and protection, in part because ownership rights have not been established; how community members will benefit from plantations or community woodlots is unclear, unknown or disbelieved.

In Senegal's Diourbel Project, project officials, when asked how community members would benefit from the woodlots when the trees were ready to harvest, replied that this issue would be dealt with when the time came. Only 10 - 30% of the local population participates regularly in project nursery and woodlot activities.

Somali officials, when asked how the wood at the Bulalo community woodlot would be handled when the trees were ready to harvest, said: "Our only plan now is to encourage communities to plant; we're trying to convince people that it is better to plant than to cut." These officials acknowledge that communities are skeptical about setting land aside for a woodlot because to them it would be the same as turning the land over to the government.

In Lesotho, particularly in times of drought, herdboys are frequently blamed for cutting woodlot fences during the night to graze their animals, often destroying seedlings and young trees. Because woodlots and plantations in Lesotho are managed by the government with very little community participation, community members "look the other way when fences are cut," officials say.

In the Baringo project in Kenya, where technical and material assistance is provided to farmers for private woodlot development, the question of who will benefit is not an issue.

Counterpart Community Organizations. Few governments in the world have the staff and resources to successfully develop, manage, and market local forest products; this capability must be developed at the community-level through counterpart organizations and private enterprise.

Although local capacity building--both technical and managerial--is widely recognized as an ultimate goal of community forestry development, efforts in this direction seem to be thwarted before they can begin. The primary reason is clear: most forestry development planners assume irresponsibility on the part of communities in the management of natural resources, as well as in the management of community organizations. The dual nature of the forester's role in most of Africa as both a policeman and a technician serves to reinforce this bias.

In acknowledging that communities do not participate in the management of the woodlots on their own land, the expatriate

director of one woodlot project said, "I know we are criticized on this point, but in the FAO woodlot scheme, woodlots were handed back to the villages to manage, and there are not many left now." Such examples--and there are many--also serve to reinforce this bias.

Other donor representatives are less categorical in trying to rationalize the general lack of community participation. "People," they say, "will plant trees and manage their woodlots when they recognize the need and when they see it as a priority."

Predictions aside, the issue here is that voluntary participation has yet to become a driving force in community forestry. As one Somali official explained: "Volunteer self-help is okay for projects which last a day or two, or a week, but not for a project which requires two or three years of maintenance. Most people cannot afford to volunteer the time, even if they realize the need."

Community forestry programs have been unsuccessful not because communities are irresponsible, or because they fail to see the benefits, but because planners continue to view community forestry activities as a community responsibility reliant on voluntary participation.

B. Food-for-Work (FFW)

PL 480 FFW programs have been on the decline in Africa, primarily because PVOs lack the financial, technical, and administrative capability to implement them successfully.

Critics of the program have also, no doubt, contributed to this decline. The two charges most often made are that:

- ° FFW projects foster dependency by rewarding community motivation and participation with food aid; and
- ° FFW projects provide 'make-work' rather than further long-term development.

FFW and Dependency

Few dispute that community motivation and participation can become dependent on food aid.

In Lesotho, many people spoke of the erosion of the self-help spirit. Food aid and community development, they say, have become synonymous. The per capita food assistance in the country is now so excessive, according to the former director of CARE, that it is becoming "harder and harder to engage people in developmental activities; they resist." After 19 years of food aid, one senior official concluded, "it is extremely difficult to get the country out of a relief mentality."

In Niger, CARE dropped food-for-work from its Majjia Valley Windbreak Project--where farmers were receiving food aid for planting trees on their own land--because their motivation had become dependent on food aid. "We were paying farmers to help themselves in a self-help project," the CARE director said. "It just didn't make sense." When CARE announced plans to abandon the food component, farmers began proclaiming: No food, no work. To which CARE responded: No work, no trees. In some villages, the director said, it took almost two years for farmers to get used to the idea of planting trees without food compensation.

One current FFW project in Ghana, which produces and sells cassava, has been very successful in funding other community projects, including a new primary school. Community members receive food rations as compensation for labor volunteered in the cassava field. Regardless of its merits, however, the project is not self-sustaining: the income generated from the sale of cassava is dependent on food aid.

These examples illustrate various levels of food aid dependency. The issue here, however, is not whether food aid--specifically FFW--is an inappropriate resource; the issue is more correctly one of appropriate versus inappropriate programming of FFW.

FFW and Long-Term Development

Although they serve humanitarian purposes, FFW projects contribute little to long-term development when they are poorly designed, when they lack technical and material assistance, and when the quality of the labor force is low.

In Kenya, even after replanting, less than 35% of the trees survived the first six months at one CRS food-for-work tree planting project, because the project lacked even the most basic technical assistance: the trees were planted at the end of the rainy season instead of at the beginning of it. Credit for the trees that did survive was given to the women of the community who hand-carried water from a river two kilometers away.

In Lesotho, technical assistance and hand tools are so lacking in community-initiated FFW soil conservation and tree planting projects that CRS may soon restrict its FFW assistance to Ministry of Agriculture donor-assisted projects.

Within the forestry sector, however, the most serious problem plaguing FFW projects is the poor productivity of the labor force. At work sites where the quality of the average FFW laborer is low, and labor turnover is frequent, closer supervision and constant training is required: not only does this situation undermine production targets, it also overtaxes project management, which most projects can ill afford.

The principle factors which determine the quality of the FFW labor force include:

- the project location;
- the selection of FFW laborers; and
- the rotation of FFW laborers.

Project Location. In food deficient areas, where there are few employment opportunities, FFW projects do attract quality laborers and experience very little turnover.

In Rwanda, the Prefecture of Gikongoro is the only region of the country where the government has approved FFW projects, because it is considered the least productive agriculturally and the most deficient nutritionally. The chief forester attached to the WFP-assisted Gikongoro Rural Development Project noted: "Our project gets more people who want to work than a similar project down the road. The difference is that we pay half the salary in food, which is what the people here prefer."

The project's director, a FAO expert, agreed. When asked if the project would rather have the dollar equivalent of the commodity value, plus handling and transport costs--which in Rwanda, is often three times the original value of the commodity--he replied: "No. WFP commodities assure the project of a labor force. Money, on the other hand, most probably would end up in other budget line items. For us, WFP assistance facilitates multi-year planning and target setting."

Unfortunately, FFW is usually viewed by ministry officials, politicians and program managers as a free resource: in most countries, it is programmed indiscriminately.

In Somalia, at one urban FFW tree nursery, a FAO expert just shook his head and said: "The seedlings are very expensive to produce with FFW labor--22 people paid rations for 312 days per year to produce only 10,000 seedlings!" The majority of the 22 nursery workers were old men and women.

Senegal's recently terminated FFW sand dune fixation project, which was located in that country's richest food producing region, was debilitated by labor shortages and frequent labor turnover. Not only were imported food commodities less desirable to people, but the equivalent value of the rations was well under the region's going rate for hired labor.

Selection of FFW Laborers. When selection of FFW laborers is made by local authorities, rather than project staff, qualifications such as age and health may not be considered.

In Lesotho, where selection is made by the Village Development Committee, one project forester noted: "The selection of FFW laborers is really manipulated by local politics. And we have no voice in the matter. Mostly old women are selected. FFW laborers," he concluded, "would be as good as cash-paid laborers, if we could select and train them ourselves."

Rotation of FFW Laborers. The rotation of FFW laborers to maximize the number of food aid beneficiaries adversely affects project productivity by not allowing skill development to occur.

In Rwanda, FFW laborers are rotated every 3 months, and in Lesotho, they are rotated every 15 days. "With this system," a forester in Lesotho said, "there is just no point in training the FFW laborers; they are gone in 15 days anyway."

Local skill development must occur if deforestation, soil erosion and declining soil fertility are to be checked. FFW programs could provide such an opportunity, but only if they attract a productive, stable labor force.

RECOMMENDATIONS

A. Increase Collaboration

Peace Corps has a history of successful collaboration with USAID, PVOs, WFP and recipient governments in PL 480-supported forestry activities, and should increase its participation in these activities.

In Senegal's Diourbel Woodlot Project, which is being implemented by the GOS Forestry Department and supported with PL 480 Title III counterpart funds and World Food Programme FFW commodities, Senegalese officials cite Peace Corps involvement as an essential contribution. Volunteers, these officials say, not only bring to the project needed basic skills in nursery management and tree planting, and excellent local language and interpersonal skills, but they also serve as an effective link between the communities and project management. Catholic Relief Services in Senegal has already discussed collaborative possibilities with Peace Corps in the implementation of FFW-supported forestry activities which would be based partly on the Diourbel project model, and located in higher rainfall areas.

In Lesotho, a Peace Corps forester has rehabilitated over the last year an abandoned tree nursery at Qacha's Nek with the assistance of a Ministry of Agriculture (MOA) nurseryman and 10 CRS-sponsored FFW laborers. It is the only tree nursery in the eastern two thirds of the country. According to the Peace Corps forester, they hope to more than double their production next year from 20,000 to 50,000 seedlings. A PL 480 Title II Section 206, in which Title II commodities are monetized, is being considered by USAID to provide support funding to this and other CRS projects for improving their level of technical accomplishment. These funds would be used to purchase tools and small equipment and construct storage facilities. Senior MOA officials stated that they would like to see additional Peace Corps foresters at the field level to promote rural afforestation.

In Kenya, the WFP-sponsored Baringo Fuelwood/Afforestation Extension Project is very interested in collaboration with Peace Corps; and, in fact, the project director has recently requested three Peace Corps foresters. CRS, the only recipient of PL 480 Title II in Kenya, would like to expand its FFW/forestry-related activities, but has been unable to "because we don't have technical experience nor the technical people to support them," the director said; and the GOK Renewable Energy Program, which receives support from USAID, is also interested in considering FFW programming possibilities. Currently, seven Peace Corps foresters assist the program in nursery establishment and agro-forestry extension.

In Rwanda, where there is a small Peace Corps program (three education Volunteers and one forester in 1984), the Forestry

Department is interested in implementing community forestry food-for-work projects in food deficient areas, and in placing well-trained Peace Corps foresters at the field level. The Adventist Development and Relief Agency (ADRA) currently sponsors two such FFW/community forestry projects, with three additional projects approved for implementation.

USAID in Rwanda has also requested Peace Corps foresters to assist in the implementation of its bilateral USG/GOR Community Forestry Project, in which a food-for-work component is being considered. And the project director of the WFP-sponsored Gikongoro Rural Development Project, who has had very positive experiences with Peace Corps Volunteers in the past in other countries, believes that Peace Corps foresters would enhance the Gikongoro project by promoting community and private woodlot establishment and agroforestry in project areas where, at this time, only large-scale plantation reforestation on state lands is occurring.

In Ghana, a major donor-assisted community forestry/ food-for-work initiative is seen by the Forest Department as vital to solving the country's fuelwood crisis. USAID, CRS and ADRA are all interested in collaborating with Peace Corps on this initiative. Roundtable discussions have already taken place among these entities on programming possibilities.

Increased Peace Corps collaboration in the five countries referenced above is recommended on two fronts:

- strengthening ongoing FFW/forestry projects where they already exist; and
- assisting in the development and implementation of a major new initiative, one which would expand FFW support to community-level forestry activities, as well as address many of the field concerns outlined in the previous section of this report.

B. Strengthen Ongoing Projects

Peace Corps foresters would greatly enhance many ongoing FFW/forestry projects--as well as soil conservation projects--by providing direct technical support to nursery and tree planting activities and technical skill transference to project personnel and FFW laborers.

Furthermore, Peace Corps foresters, though they should not be involved in food distribution, could increase the impact of food aid and other project resources by strengthening project planning and management capability, and by carrying out extension activities which promote agroforestry principles and private woodlot development to small farmers. The recommended role of the Peace Corps forester in ongoing FFW projects is as follows:

- to provide direct technical support to project nurseries and plantations on a regular basis, especially during critical periods when this support would greatly enhance nursery production and plantation survival rates;
- to develop standard work norms for each of the various nursery and tree planting FFW activities, not only for planning and evaluation purposes, but also to assure a clear linkage between the food rations and the work performed;
- to institute a process of forward planning for each activity to achieve optimal organization, sequence and timeliness of work tasks, required tools and other resources;
- to establish a management information system, which is not only essential for continuous monitoring of activities and resources, and sound management decisions, but also for good communication and strong links between donor and government institutions, USAID, WFP and PVO offices, FFW project sites, and participating communities;
- to train work site supervisors and PVO and government field personnel in technical skill areas, as well as in data collection and record keeping; and
- to introduce tree species to FFW nurseries which are appropriate for agroforestry purposes and private woodlot establishment.

Field representatives of PVOs, WFP, USAID and recipient governments agree that these contributions by Peace Corps Volunteers would increase significantly the impact of existing FFW/forestry and soil conservation projects. Much additional discussion and interaction will be needed among PC, PVOs, WFP, USAID and host government organizations to work out all the details for collaborative interaction, both organizational and procedural.

C. Support a New PL 480 Initiative

Based on the country assessments documented in the annexes of this report, a new PL 480 community-level forestry initiative should be implemented in Senegal, Ghana, Rwanda, Kenya and Lesotho. Peace Corps should support this initiative in collaboration with the following entities:

- Catholic Relief Services. Currently programming 97% of all PL 480 Title II assistance to Africa, CRS not only has local food distribution networks already in place in the five recommended countries, it also has credibility at the community-level and established relationships

with local community leaders, both of which are especially crucial in the early stages of project implementation.

- Adventist Development and Relief Agency. Although relatively new to food assistance programs in Africa, ADRA has 6 years of development experience and two successful FFW-assisted community forestry projects in Rwanda, and 39 years of development experience in Ghana. In both countries, the organization has local food distribution networks, as well as local credibility and knowledge.
- World Food Programme. Throughout Africa, WFP has extensive experience in FFW-assisted forestry activities, which are implemented in collaboration with one or more recipient government ministries. Not only should WFP's experience be tapped in any new PL 480 initiative; but also the cooperative mechanisms--as well as the planning and management capability--which it has already institutionalized within the government infrastructure should be utilized and strengthened where appropriate, rather than duplicated. Moreover, in WFP project areas, where FFW ration distribution networks are already in place, opportunities for collaboration exist in the implementation of community-level forestry activities supported with WFP commodities.
- USAID Mission. Although its role in a PL 480 initiative would probably vary somewhat from country to country (and even from project to project), the USAID mission would likely need to provide a major portion of the funding--for technical assistance and other resource support--i.e. through a Title I or III program. Additional technical backstopping may also be required from the mission and/or REDSO, in addition to USAID/W resources that might be provided.
- The Recipient Government. Collaboration with the forestry department, the agricultural extension service, and other appropriate technical support services should focus on institutional development in technical areas, and in the planning and management of developmental activities, rather than in food aid management. When the forestry department becomes the implementer of large food-for-work programs, and allocates scarce personnel and resources to food management and support, its effectiveness in technical forestry activities is often dramatically diminished.
- Non-Governmental Organizations. At both the national and community level, collaboration with women's organizations, the Boy Scouts, and local community development groups should be actively pursued, not only to benefit

from the local leadership, credibility and knowledge of these groups, but also to expand their role in forestry development and natural resources management.

The placement of Peace Corps Volunteers in any new PL 480 forestry initiative would need to be preceded by the development of appropriate pre- and in-service training models, and with additional Peace Corps field and headquarters staff appointments. Moreover, staff training of program managers and other key personnel of the participating entities prior to and during program implementation is essential in a collaborative effort, not only for ongoing role clarification, but also in assuring a streamlined project management, particularly with regards to consultation, decision-making and funding mechanisms.

A NEW PL 480 INITIATIVE

In strengthening PL 480 support to forestry development, the challenge to program managers will be to identify good opportunities for implementing FFW/forestry activities; to carry out more of these activities with a primary focus on forestry and long-term development, rather than only on short-term food relief; and, perhaps most importantly, to give more consideration to the cost effectiveness of FFW in project design and implementation decisions, even though it comes as a free resource.

Food-for-work should not be programmed indiscriminately. As the past has demonstrated again and again, an unsuccessful program is more debilitating to long-term growth and development than no program at all: not only are scarce resources expended, but also the attitude and outlook of a people are marred.

A. Program Guidelines

FFW assistance can serve as a catalyst for sustainable forestry development at the community level, if certain socio-economic, technical and organizational considerations are met. Suggested guidelines are as follows:

1. To attract a productive, stable labor force, locate FFW projects in food deficient areas where there are few employment opportunities. In urban centers and rich agricultural areas where other employment opportunities exist, the project will not attract the more productive laborers unless the wage--whether it is food-for-work, cash or a combination of the two--is competitive with the going rate for paid labor. Food-for-work is also less enticing in areas where the local population is receiving emergency food relief.
2. Locate initial FFW/community forestry projects in areas of lower climatic risk. Once experience is gained in more favorable areas and inevitable program adjustments have been made in technical, managerial and logistical procedures--resulting in a stronger, surer program--projects implemented in more marginal areas will have a better chance of success.

Guidelines (1) and (2) underscore the need for a strong program orientation in the determination of project location. Labor quality and growing site criteria should be used together with other traditional criteria, such as the need for reforestation and the severity of food shortages, to assure that project locations are selected with reasonable prospects for success.

3. Establish the projects as community enterprises--or village corporations--with profit-making goals. Profit

incentive is an underutilized development tool in reforestation efforts. Tree nurseries and woodlots, both communally owned and private family woodlots, can be profitable with proper planning and management. With a village corporation, a community-owned institution is established to develop, manage and market local wood products. This institution can serve as a counterpart to PVOs and host government ministries.

4. Plan food-for-work as a short-term input--as start-up capital for each village corporation to hire employees. Permanent FFW employees should begin receiving incremental cash payments as soon as the village corporation is able to generate revenue. If the village corporation is unable to totally convert employees to cash-for-work from revenues generated by the tree nursery and woodlots in a reasonable time period, the food aid should be withdrawn.
5. Form a board of directors, composed of community leaders, to oversee the village corporation. A board of directors, as such, has traditionally been difficult to establish and sustain in third world communities. Yet, in furthering the process of community development, they must be established: the right people must be found; the right incentives must be devised; and management skills must be developed.
6. Select and hire permanent and seasonal workers on the basis of qualifications, particularly health and age. With proper training, capable and motivated permanent employees can develop the technical and management skills to eventually sustain the village corporation.
7. Define food rations to both sponsors and laborers as a wage for employment and not as compensation for time volunteered. Without this distinction, community motivation and participation can become dependent on food aid.
8. Place--as much as possible--the burden of food distribution and accountability on the village corporation. To do so will not only cut down on the donors' (USAID, WFP, PVO) administrative burden--an often cited disincentive to food-for-work programming--it will also build local management capability. This approach may initially result in losses due to administrative weaknesses, but some loss must be considered acceptable. Building management capability takes time; it develops over years.
9. Promote women at all levels within the village corporation--as laborers, supervisors and managers--but particularly as managers. That community organizations in much of Africa are male-controlled is accepted by

donors as a cultural preference; that these organizations rarely endure--especially when money is involved--is accepted by donors as a cultural weakness: and donors continue to ignore the management capability and potential of women in community development. Even though women were cited everywhere as the best nursery workers, very few women in donor-assisted forestry projects are in supervisory positions. Donors must begin to challenge their own biases as to what is acceptable and what is not.

10. **Incorporate community volunteers whenever possible along side of permanent and seasonal employees.** In Somalia, sites were prepared for planting by FFW laborers and planted by community volunteers on National Tree Planting Day.
11. **Rely on full community involvement in forestry planning, particularly in site and species selection.**
12. **Develop tree planting and plantation management capability, particularly for fuelwood, fruit tree, fodder producing and nitrogen-fixing species.**
13. **Identify non-agricultural communal land for village corporation tree planting, such as roadsides, schoolyards and land which is degraded and abandoned.** The primary objective of communal tree planting by the village corporation should be not only to produce and sell fuelwood, fodder, fruit and wood for construction purposes, but also to develop a community extension capability for assisting small farmers in tree planting and agroforestry, as well as to develop markets for their tree products. Moreover, corporation tree planting in erosion gullies and bas-fonds located at further distances from the community will be feasible, because the labor force is paid, and not voluntary.
14. **Target most nursery production to small farmers for agroforestry purposes and private woodlot establishment, and utilize village corporation employees to provide outplanting technical assistance.** The primary objective for providing outplanting technical assistance to small farmers is to promote fuelwood self-sufficiency, fodder production, and improved soil fertility and crop yields. Seedlings should be sold to farmers, even if at a token price; to give seedlings away conveys that they are unwanted or without value.
15. **Maximize land use, resource investments and profit potential by raising vegetables and ornamental plants in nurseries, and by intercropping cereals and tubers in woodlots.** Food crops also provide added incentive to keep animals out.

As these guidelines indicate, FFW assistance can help establish local institutions, but only local skill development can sustain them.

B. Peace Corps Support

Profitable wood production and higher crop yields through improved soil conservation techniques and agroforestry not only require good technical skills, but also good planning and management skills. In Africa, the means to acquire these skills are unavailable to most rural communities and farmers. Peace Corps Volunteers could help fill this void.

Two types of Peace Corps Volunteers are recommended: foresters and management coordinators.

Technical Skill Development

Peace Corps foresters assigned to community-owned institutions could provide technical support to the following activities:

- nursery establishment;
- communal tree planting;
- forestry extension; and
- environmental education/promotion.

Nursery Establishment. The tree nursery is the foundation of the infrastructure required to support communal and private wood production and agroforestry extension.

In a FFW-assisted program, PCVs would establish nurseries as community enterprises, and train FFW employees. This training would include nursery management, record keeping/accounting, seed collection, seed storage, and fruit and nut tree propagation. Within two years, the employee(s) with the best performance record could be promoted to a supervisory level.

To maximize profitability, PCVs would develop secondary nursery activities, such as the production of vegetable seeds, vegetable seedlings, flowers, and house plants, as well as related activities such as beekeeping and rabbit raising.

Communal Tree Planting. With nurseries established as community-owned enterprises, PCVs would assist in the development of commercial wood production on communal land, particularly fuelwood and wood for construction purposes.

The additional permanent and seasonal FFW employees hired to staff this unit of the village corporation would receive training from the PCV in proper land preparation and planting techniques,

silvicultural interventions, seedling protection, and wood harvesting. And again, the employee(s) with the best performance record could be promoted to a supervisory level within two years.

Once trained, these employees--as community employees--would also be utilized to provide technical assistance to farmers in private woodlot development and agroforestry planting. Much of this technical assistance--or extension--can occur during slack periods at the nursery.

Forestry Extension. Extension to farmers on agroforestry principles and private woodlot development and management would be considered a primary objective of the community forestry initiative.

This forestry extension effort would address small farmer needs and concerns, particularly fuelwood shortages and declining soil fertility. The increased crop yields resulting from windbreaks and plantings of nitrogen-fixing trees--an increase that can range from 30% to 200%--will more than compensate for the land taken out of food production.

Peace Corps Volunteers assisting village corporations would identify four or five progressive farmers willing to establish windbreaks or woodlots on their land, and plant fodder-producing and nitrogen-fixing tree species. These various activities would serve to demonstrate proper agroforestry techniques and woodlot management to other farmers, as well as the profitability of tree planting which would be realized in higher crop yields, and wood and fodder production.

Environmental Education. A program of environmental education and promotion of tree planting with local primary and secondary schools and community groups would be initiated to raise the general awareness within the community of the importance of the natural environment.

As part of this program, PCVs would initiate schoolyard tree planting projects with students responsible for planting, watering and protecting their own trees. Students and community groups could also be tapped to participate as volunteers in communal tree planting activities, particularly on National Tree Planting Day.

Management Skill Development

In the success of a business enterprise, management skills are as important as production skills. PCVs could assist the village corporations as management coordinators, particularly in the following areas:

- ° organizational development;

- administrative procedures;
- personnel policy and management; and
- production planning and marketing.

Organizational Development. The overall program goal in establishing the village corporation is to develop a strong organizational structure capable of managing the nursery and the commercial wood production unit with minimal outside assistance. To this end, a successful organization ultimately depends on the quality of its leadership.

PCV management coordinators--liaising with CRS mother/child health (MCH) nutritional resident supervisors, regional forestry officers, agricultural extensionists and local community leaders--would establish and develop governing boards for the village corporations. PCV management training to board members would focus on the following:

- increasing knowledge of management procedures, and changing attitudes and behaviors impeding organizational performance;
- problem identification and analysis, and the development of effective problem-solving approaches; and
- resource allocation, financial planning and profit-making.

Administrative Procedures. As with any business enterprise, good planning and management depend on well kept records and well established operational procedures.

PCV management coordinators would establish standard operating procedures and train personnel in cash control, food distribution and proper record keeping, such as cash books, expense records and profit/loss accounts. The PCV would also monitor the routine reports to sponsoring government agencies and donors.

Personnel Policy and Management. PCV management coordinators would work closely with PCV foresters and board members to develop and institute personnel policies for the nurseries and commercial wood production units. These policies would include:

- terms of employment (and hiring and firing procedures);
- days and hours of work;
- work norms;

- payment scales and payment procedures; and
- promotion guidelines.

Production Planning and Marketing. PCV management coordinators would work closely with forestry volunteers to assist village corporations in performing two different kinds of planning: operational and strategic.

Operational planning would focus on the daily, weekly and monthly running of the nursery and the commercial wood production unit. Time schedules, budgets, personnel requirements and material needs would all be essential elements of this planning.

In strategic planning, a long-term view of the village corporation would be formulated. What major changes in personnel might occur; what new equipment or operational improvements might be required; and how the market for various products and services might evolve. All are crucial questions in a growing organization. They also force people to evaluate current operations.

The PCV management coordinator would not only assist the village corporation in monitoring and measuring its own progress, but also assist in the development of a marketing strategy and in the establishment of related or complimentary projects, such as charcoal production.

CONCLUSION

For years, food-for-work commodities have been criticized as an inappropriate development resource, cumbersome and expensive to transport, and prone to abuse and mismanagement. Yet, when all is said and done, FFW-assisted forestry programs have planted more trees over the years than any other program approach.

Most notable, however, in this seven country study, is the conclusion that FFW programs have yet to reach their full potential: with solid technical input and careful program guidance, FFW assistance can serve as a catalyst for extended and sustained community participation in reforestation and natural resources management. Peace Corps Volunteers can make a valuable contribution to this effort.

Also worth noting here, in concluding this report, is the need to distinguish somewhat the target groups of the Title II programs. Although the basic goal of all Title II programs is humanitarian, each program has special objectives and special value, and a defined target population. The mother/child health and school feeding programs will guarantee a new generation of capable adults to continue the development process. The emergency feeding program, targeted for a general population in need, can prevent a regional or national food shortage from creating a tragic situation.

The special value of the FFW program is that it can plant trees and construct dams and build roads, as well as supply food commodities to food deficient regions. But to do so effectively, because these projects require hard physical labor, the more able-bodied family members should be targeted. And since the standard FFW ration is based on the nutritional needs of a five-member family, to employ able-bodied family members not only feeds the rest of the family, it also plants trees.

To be sure, this report leaves quite a few issues for further consideration. Among these are issues identified in the country annexes, but not addressed in the main report. They include the determination of ration size and content, the USAID-PVO relationship, logistical procedures and the annual estimate of requirements (AER) submission process.

The hoped for outcome of this report is a commitment within the development community to strengthening and expanding food-for-work assistance to reforestation efforts. But it is also hoped that this report will lend itself to further--if critical--analyses of specific and tangible forestry and food aid program issues.

ANNEX 1: GHANA

15

COUNTRY SUMMARY

The PL 480 assessment team visited Ghana from February 2-12, 1984. During this period of time the team interviewed 60 individuals representing 21 different organizations and groups. Information from those interviewed as well as observations from in-country site visits are included within this country report. The following is a listing of this team's learnings, conclusions, and recommendations drawn from the individual interviews and site visit observations.

Learnings

- ° When the Forest Department becomes the implementer of a large-scale, food-for-work program, and allocates scarce personnel and resources to food management and support, its effectiveness in technical forestry activities is dramatically diminished.
- ° In the Catholic Relief Services (CRS) food-for-work project in Akobima, where community members are compensated with food rations for voluntary labor, the men stopped working when food shipments were delayed for 3 months. In the Forest Department food-for-work program, on the other hand, where Department employees are paid part cash and part food ration, employees continue to work when food shipments are delayed.
- ° The CRS Akobima food-for-work project, which produces and sells cassava to fund community projects, is not self-sustaining: the income generated from the sale of the cassava is dependent on food aid.

Conclusions

- ° Drought, crop failure, wide-spread destruction of natural forest resources, and a lack of foreign exchange have created a disaster situation in Ghana unparalleled in its history.
- ° Although the GOG recognizes that a fuelwood crisis exists, they to date have developed no programs or taken any measures such as agroforestry extension, woodlots or nursery management to deal with the fuelwood shortage. The GOG Forest Department is undertaking large-scale reforestation on natural forest reserves with the assistance of the World Food Programme.
- ° Due to very low staffing and funding levels, the GOG Forest Department is unable to maintain its own bureaucracy, let alone plan new programs.

- A major donor-assisted community forestry/food-for-work initiative is seen by the Forest Department as vital in solving the country's fuelwood crisis.
- USAID/ Ghana supports the concept of a major forestry/PL 480 food-for-work initiative in the country; however, the mission currently does not have the staff or the budget to spearhead any new projects for at least the next two years.
- Both CRS and ADRA would like to initiate community forestry/food-for-work programs. CRS sponsored 200 food-for-work projects in 1983, none of which were forestry related. The program lacks materials, technical resources, and CRS monitoring and evaluation field staff. ADRA has no food-for-work or forestry experience in Ghana. Emergency food relief is a major programming priority for both CRS and ADRA at this time.
- Peace Corps/Ghana would participate in a community forestry/food-for-work initiative, providing funding was available for an additional Associate Peace Corps Director (APCD), to administer/coordinate all associated forestry endeavors. There are no Peace Corps forestry Volunteers in Ghana.
- The AID mission, the GOG, CRS, ADRA and Peace Corps fully support the concept of a collaborative effort in approaching future forestry/food-for-work programs in Ghana.
- The current economic situation in Ghana greatly curtails project assistance at all levels. In particular, the lack of petrol and operating vehicles is a serious constraint to project staff mobility and the transport of materials.

Recommendations

- A community forestry/food-for-work pilot project should be implemented in Ghana, but not until FY 1987, due to the following:
 - shortages in present AID mission staffing and budget levels;
 - Peace Corps staffing requirements;
 - present CRS and ADRA focus on emergency food relief efforts;
 - shortages in present GOG Forest Department staffing and budget levels, and program priorities; and
 - logistical constraints to project start-up under current economic conditions.

- ° The opportunity for a FY 1987 or earlier pilot project start-up would be contingent on the following conditions:

- that the USAID mission secure funding for the pilot program, i.e. through a PL 480 Title I or III agreement;
- that Peace Corps/Ghana receive an additional APCD, preferably with technical background in forestry, business or cooperatives;
- that CRS and/or ADRA are prepared to sponsor at least the food-for-work component of the pilot project, and that they receive additional funding to do so effectively;
- that the GOG Forest Department commit staff and resources to the initiative; and
- that the economic situation in 1987 in Ghana allows for the basic local support of the project, particularly with regards to fuel and spare parts availability.

- ° If these conditions are met by 1987, the pilot project should be a collaborative initiative among the following entities:

- the AID mission;
- PC/Ghana;
- the GOG Forest Department;
- the GOG National Defense Committee; and
- CRS and/or ADRA.

- ° If the above entities agree to collaborate on the community forestry initiative, the following issues will need to be addressed:

- technical site considerations;
- socio-economic site considerations;
- organization and management, i.e. role clarification; and
- scale of pilot sites, including staffing and funding requirements.

GHANA

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COUNTRY ASSESSMENT

A. The Food Situation

The food situation in Ghana is particularly worrisome. Widespread crop failure due to the drought has resulted in acute food shortages in many parts of the country. Interviews and visits by the team revealed that farmers and consumers have been hoarding food grains, resulting in even greater post-harvest losses at a time when such losses simply cannot be afforded; that people were eating their reserve seed stock, such as maize; and that, because of bush fires and the need for cash, people were digging up their in-ground reserves of cassava early--reserves normally saved for the lean season (April - May).

Another major problem contributing to the food crisis is that food distribution from areas of surplus to areas of need is being hampered by the high cost and frequent unavailability of petrol and transportation. The Food Distribution Agency, the government body responsible for buying, transporting, storing, and distributing food products from farmers to consumers, according to a senior government official, is currently purchasing maize for 1,800 cedis per 100-kilo bag (\$60), and then selling to consumers for almost twice that, or 3,200 cedis (\$107). The increase, this official noted, is to cover transportation, storage, and distribution. Farmers, unfortunately, see this increase as exploitative, and consequently are trying to market their own maize. The result has been a flood of maize on the market--maize that officials say would have been saved for the lean season.

The food shortage is affecting all sectors of the population; predictably, though, urban civil servants are among the hardest hit due to their low fixed wages and lack of access to subsistence farm plots. Another sector especially hard pressed reportedly is the self-employed (e.g., the artisans, mechanics, masons, carpenters), in urban as well as rural areas because their work is sporadic. Yet, the greatest concern by Ghanaians is directed toward their children: what impact will this lack of a balanced diet have now on child development; what impact will it have when this undernourished generation reaches maturity?

To help ease the food crisis, the government is urging a return to rural areas and to farming (aimed particularly at the deportees from Nigeria). Many Ghanaians feel that this undertaking will not work; for once a family is installed in an urban area with access to health facilities, better water, sanitation, and education opportunities, they are not willing to give it all up. They would apparently rather wait out the hard times in the city than uproot.

B. Food Aid

Several agencies and organizations currently have food assistance programs underway in Ghana. It is believed by most observers that the brunt of the crisis will be borne in April and May of 1984; emergency food operations are to span the longer period of March through October. Metric tonnages of food being imported by these groups have increased dramatically; they are expanding and building up new internal infrastructures to respond to the need for stepped-up distributions throughout the country.

There are currently three main entities involved with the PL 480 Food for Peace efforts in Ghana: the World Food Programme (WFP), Catholic Relief Services (CRS), and the Adventist Development and Relief Agency (ADRA).

ADRA has only recently become involved in PL 480 food assistance relief efforts. USAID officials in Ghana and Washington indicated that they are encouraging more Title II programming by ADRA, to "break the CRS monopoly." CRS, according to these officials, does close to 97% of all PL 480 Title II programming in Africa.

Previous AID program staff in Ghana, one senior USG official said, had little interest in Food for Peace, but with a change of personnel, there is now renewed interest. Moreover, because the US Ambassador declared Ghana a disaster situation, there will be a notable increase in levels of PL 480 in the pipeline for at least the next two years.

Ghana had a PL 480 Title I loan agreement; this was annulled during the tensions between the GOG and the USG in 1983 and cannot be reinstated without a lengthy wait. In fact, 40% of all of USAID's activities were "frozen" in April of 1983, and the staff is currently cut back to a skeleton core of three, from a high of 35 in 1981. A new Food for Peace officer was detailed to Accra on temporary duty very recently, with the position due to be filled permanently in the near future.

Consequently, USAID, according to USG officials, does not have the staff or budget to spearhead any new projects, food-related or otherwise, for the next two years. They are, however, serving in an administrative capacity to the two PVOs mentioned above for their emergency food relief efforts.

C. The Forestry Situation

The current economic situation in Ghana has severely reduced governmental efforts in forestry. Government staffing and funding levels are so inadequate that the four government institutions involved in natural resources activities are doing very little in forestry other than striving to maintain their own bureaucracies. As one GOG official stated: "There is a lot of

talk about forestry but no action." Similar comments were made by officials in all of the four entities involved in natural resources activities.

The Forestry Commission, the Forest Department, the Council on Environmental Protection, and the National Defense Committee are all engaged in addressing forestation concerns.

1. The Forestry Commission: A recently resurrected government institution mandated to oversee forestry policy at the national level and to coordinate government-sponsored forestry activities. One of its first priorities, according to the director, is to sponsor a symposium on community forestry and community participation. The Commission's sub-offices include fisheries, silvaculture, forest management, and agroforestry.
2. The Forest Department: The major implementing agency working in the forestry sector in Ghana. Its reforestation program within the national forest reserves is supported with WFP food-for-work rations (See World Food Programme). The Forestry Department is under the Ministry of Natural Resources; its main office is in Accra, and it has eight regional offices. Each regional office has four divisions:
 - Planning
 - Education
 - Silviculture
 - Utilization of forest products
3. Council on Environmental Protection: A government agency that promotes environmental activities at the village level and better cooperation on environmental issues within the Government. The Council is spearheading the GOG's request to the UNSO (United Nations Sudano-Sahelian Organization) to designate Ghana a Sudano-Sahelian country. This would give the country access to UNSO technical assistance, grants, and other program support.
4. The National Defense Committee (NDC): The NDC is the political arm of the GOG, and the parent agency of the local-level People's Defense Committees (PDC). PDCs have been established in each community and urban neighborhood to promote current government policies, particularly those directly related to social and community development, and to act as a direct communication link between the community and the central government. An official policy of the NDC is to promote forestation at the local level, especially the planting of fruit trees and firewood species.

D. Forestry Issues and Problems

Little is currently being done in Ghana in agroforestry extension and woodlot establishment, although the GOG considers

both to be a high priority in future forestry planning. Agroforestry, already part of traditional farming practices, is widespread, and some farmers recognize the benefits of nitrogen-fixing trees. However, the infrastructure necessary to improve traditional agroforestry practices--community nurseries and extension personnel--are virtually non-existent. There are very few private or community woodlots in the country, and the natural community forests that still exist are facing serious degradation as a result of current pressures being put on them. These include:

Drought. Drought conditions in Ghana have worsened steadily over the past ten years, and now affect not only the northern Sahelian area, but also the southern regions.

Population Pressure. Due to a high birth rate and the recent influx of deportees from Nigeria, Ghana is experiencing a staggering 8% population increase. Population pressure on the natural environment is evident in and around forested areas by the multitude of slash and burn agricultural plots being established. Increased food production is of course a short-term benefit, but in the long run, massive clearing of this sort will have a very degrading effect on the forests.

Fuelwood Shortage. In the northern parts of the country, a fuelwood shortage has been recognized by the local populace. In other parts of the country, particularly in the savannah areas, the densely populated regions, ecologically degraded sections, and areas where local charcoal industries once flourished, people are also becoming cognizant of the fuelwood shortage. The situation is aggravated by both the drought and the increase in population.

Bush Fires. Because of the drought conditions mentioned above, bush fires are sweeping uncontrolled across the forested and grassland areas of Ghana, as well as the agricultural producing areas. Little attempt is being made to fight these fires because of a lack of funds, equipment, and technical manpower, coupled with feelings of powerlessness. The causes of the bush fires include: burning to prepare a forested site for agricultural production; burning for hunting animals, mainly grasscutters; and, accidental fires caused by the drip torches of palm wine tappers, cigarettes, and lunch fires. One senior government official, a former forest conservator, commented: "People in forested areas do not realize or understand the adverse consequences of burning the land, because it is only in the last ten years, with the drought, that uncontrollable bush fires have proven to be a major problem."

One of the results of these rampant fires is that many trees, especially the thin-barked species, have suffered extensive fire damage to the lower part of the bole, exposing them to fungi and insect attack. Most of these fire-damaged trees will never reach maturity. In this way, the rain forests of southern Ghana have

been extensively damaged. The GOG has recently passed a law which makes burning illegal, but no effective enforcement program has yet been designed or implemented.

Lack of Resources. The forest activities of the GOG have been severely curtailed by the lack of human, capital, and material resources. The shortage of staff ranges from field personnel to higher administrative staff members. The shortage of professional foresters, however, is the most acutely felt need. Four factors contribute to this situation:

- lack of financial resources to hire new staff;
- the low government pay scale;
- closure of the University and consequently of the forestry training program; and
- the exodus of qualified foresters to more lucrative posts in other countries.

The Forest Department estimates that it has about one-third the effective staffing level it needs.

Neither the Forest Department's nor the Forestry Commission's 1984 budgets have received governmental approval as yet (February, 1984). What financial resources the GOG does have available have had to be channelled into more pressing, short-term programs, e.g., food production.

Material resources and support to forestry endeavors is also minimal and/or lacking. It was intimated across the board that Forest Department employees are not only facing a constant shortage of plastic bags, tools, and other project implements, but also of basic administrative needs such as paper, pens, and maps. As a result of the latter, little documentation of projects is available.

The constraints of scarce vehicles, spare parts, and fuel is yet another factor worth mentioning: the Forest Department officials in the Accra office had not been able to conduct project site visits for at least a month.

Spare parts have been procured by cannibalizing existing vehicles; this necessarily diminishes the availability of functioning cars and trucks. Gas lines of up to 100 parked cars are commonplace. Petrol allotments to the Forest Department have been too small to meet its requirements for transportation and mobility to and from projects.

Lack of planning. The forestry sector in Ghana is currently functioning with very little effective long- or even short-term planning. As one Forest Department official commented, "Forestry planning is ad hoc at best--under the present conditions we just cannot do much better." The last Five Year Plan was published in 1977.

PROGRAMS, PROJECTS, AND CASE STUDIES

A. World Food Programme

The World Food Programme (WFP) in Ghana operates solely within national government structures, which currently include the Forest Department (the largest recipient); two GOG/World Bank agricultural development projects; the State Farm Corporation; and the Cocoa Marketing Board.

WFP field staff assume purely administrative and monitoring roles in the food assistance operations. They oversee the process and logistics of getting the commodities to Ghana's main port at Tema, at which point the GOG Forest Department assumes control. WFP also makes quarterly site visits to monitor the food distribution. The GOG is required to submit quarterly reports to WFP/Rome via the WFP/Accra field office, summarizing project-specific data regarding dates, tonnages and distribution of commodities.

The Forest Department

An estimated 5,000 employees of the Forest Department are currently benefitting from the WFP food aid. Forest Department officials would like to see that figure double.

It is important to note that the monthly food rations serve as a wage supplement to make up for low government wages. The monthly ration consists of 350 grams of maize or bulgar wheat, 40 grams of vegetable oil, 40 grams of dried skimmed milk, and 40 grams of canned fish, and is said to be worth 1200 cedis, or US\$40 (February 1984). The plantation workers' monthly wage is 780 cedis.

According to a highly-placed government official (and confirmed by other officials), all Forest Department employees--plantation day laborers, drivers, and district, regional and national support staff--are receiving WFP commodities. This claim contradicts official WFP policy and GOG policy, which stipulate that only casual laborers may receive wages supplemented with food rations.

"We are all in need of food aid," one senior government official said. "I make between 900 and 1,000 cedis a month; the worker in the plantation makes 780 cedis--minimum wage--plus in the rural areas he also has his farm, which is something that people in the urban areas don't have."

Several people within and outside the Forest Department stated the WFP commodities are used primarily as a means of maintaining the organization--as essential to keep employees working. These sources added that the quality of work in the Forest

Department and throughout the government civil service has declined in these difficult times, as many civil servants absent themselves more and more frequently to moonlight, to farm or to search for food for their families. Several government officials stated flatly that food aid just to the Forest department is unfair: other ministries and civil servants should receive it as well. "If WFP commodities stopped," one Forest Department official said, "the projects would come to a halt. The workers would leave."

WFP/Rome has evaluated the program three times since its inception in 1976. Each time, assistance to the program was renewed. A WFP representative visits project sites quarterly (with a Forest Department official) to monitor progress.

Transportation

It is the Forest Department's responsibility to meet each food shipment at the port, supervise the offloading, transport it to a central warehouse outside the capital, and from there distribute it to the various project sites and workers. Forest Department trucks are used to transport the commodities to the inland sites.

Shortages of vehicle, fuel and spare parts are proving to be principal problems. Sometimes, three months' worth of late rations are delivered at one time, creating storage and spoilage problems for workers. Many sell or barter what they can't use right away. It was reported that Italy recently donated four 2½ ton trucks to ease the transportation bottlenecks, but that even the maintenance of these vehicles was proving a problem. One truck was out of commission due to a broken clutch; the 50,000 cedis budgeted annually for parts and repairs, officials noted, is far from enough to cover such expensive repairs. WFP is currently trying to interest international donors in supplying parts and other items crucial to the effective implementation of the food-assisted projects.

Loss or diversion of commodities during transport can reportedly amount to 25% of the total delivery. This loss, according to WFP/Ghana, was acceptable.

Distribution

Casual workers, WFP and Forest Department officials said, must work 20 out of 23 days to receive the full ration which as previously mentioned is worth about 120 cedis (\$40). Workers who work less than 20 days receive half a ration. Each ration recipient must pay 150 cedis for it (about US\$5). It was noted that all workers elect to "buy" the food ration pack, given its value and the food shortage. The monthly salaries and food rations are given out at the same time; the technical officer collects the 150 cedis for each ration and turns it over to the District Office, where it is subsequently submitted to the District

Treasurer of the Government. The contribution reportedly goes into a fund that is supposed to flow back into the Forest Department to be used for forestry activities (e.g., employing more people, providing uniforms and social benefits). To date, the Treasury has not returned any of these funds to the Forest Department. Delays in food shipments, according to Forest Department officials, does not noticeably affect attendance, because laborers receive the cash and know that the food rations will eventually come.

Problems

As with any development project, the WFP/Forest Department scheme suffers from various problems. Among those noted in interviews were:

- insufficient funding;
- poor planning;
- shortage of manpower;
- lack of transport for seedlings and other materials from nurseries to plantations, i.e., women are often called upon to head carry seedlings (in another instance, a regional staff member used his personal vehicle to visit sites and to transport materials);
- lack of materials (plastic bags and tools); and
- the double bind that the technical officer gets trapped in as the food ration distributor, i.e., owing allegiance to friends and family, but also being held accountable for equitable distribution according to the mandates of the food programs.

Case Study - Jemira Forestry Project

The Forest Department's Jemira Project is located outside the regional capital of Kumasi. It was started in 1972, and has received WFP commodities to support food-for-work activities since 1976.

Reforestation within the project area takes place on forest reserves, which in Ghana are managed by the Forest Department. In addition to large-scale plantation planting by Forest Department employees (who receive WFP rations), agroforestry within the reserves is also taking place, by what is known as the "taungya" system. Local farmers plant trees and food crops on Forest Department designated sites. These sites are allocated to farmers by the community chief. All food produced from the individual's site belongs to him. Receipts from the sale of timber grown on the area are split between the Forest Department and the community. The taungya system is continued for three years, after which food crops are no longer planted, and the trees are left to continue to grow. The farmer receives no food rations for planting the trees.

Plantain, cocoa yam and cassava were the most common food crops observed. The plantains were planted with an approximate

spacing of eight feet by eight feet. The tree species Mansonia altissima, Terminalia superba, and Triplochiton scleroxylon, were planted in the same area using a 16 foot by 16 foot spacing. The other crops were distributed throughout the area in a more or less random pattern--"filling in the spaces," as the technical officer put it.

One nursery visited which provided tree planting stock for one plantation site was located near a village about five kilometers away. Water for the seedlings had always been carried from a stream 200 feet away. But because of the drought, the stream had dried up, making it necessary to haul water from a well over 600 feet away. The nursery showed the following signs of neglect:

- very little production--most planting beds had no seedlings;
- lack of water--very dry soil, and plants showed signs of wilting; and
- shade covering in disrepair, or on the ground.

Nursery procedures observed included the following:

- seeds were germinated in germination boxes;
- seedlings were transplanted to raised beds (under shade for two months);
- at five months, seedlings were pulled up and converted to "stumps" (vegetative reproduction planting stock); and
- "stumps" were bundled and handcarried by women to planting site.

DDT is used in the nursery to control grasshoppers. Insect damage by defoliators was noted on Mansonia altissima seedlings. There were an estimated 5,000 seedlings in the nursery at the time of the team's visit. Last year's production was 71,000 seedlings.

Forest Department officials noted that the best nursery workers are women. Although they receive no formal training, according to the officials, they have proven that they can gain the necessary technical ability through "hands-on" experience. There are some government nurseries in which women are in charge of the entire operations.

The drought has had a disastrous impact on plantations this year. Not only did many of the food crops planted (peppers, eggplants and tomatoes) die or fail to produce, but the planted trees also did poorly, with survival rates of from 25% in the

flatter, more exposed sites, to 60% on the protected slopes of the ravines.

Older plantations that were planted in 1971 and 1972 (without WFP assistance) have also been hard hit by the drought, primarily because of the increase in brush fires brought on by the dry conditions. Brush fires, it was pointed out have gone through these plantations three times--in 1976, 1979, and 1983.

Although the stands have between 60% and 80% standing green trees, these trees have had their boles so badly damaged, that with the corresponding entrance of rot, it is almost certain that few if any will reach the projected 20 year rotation age.

Referring to the economics and benefits derived from plantations of exotic species, one senior government forester said: "What these trials have shown is that it pays better in the long run to manage natural forests rather than cutting down these areas to plant exotic species, especially when considering the high cost of plantation establishment and the better world market price for some of our good natural forest species."

World Bank

The World Bank in Ghana is requesting WFP commodities for all its projects as supplementary wages for workers--both to curb absenteeism and to augment food intake. According to one World Bank official, two projects are currently receiving WFP commodities: the Upper Region Agricultural Development Project and the Volta Region Agricultural Development Project.

State Farm Corporation

The State Farm Corporation is currently sponsoring two oil palm plantation projects with financial assistance from the European Economic Community (EEC) and with WFP food commodities.

The Twifo Project is to develop 4,800 hectares of state land, and 1,200 hectares of small holder land (about 500 families). A major problem faced by the project early on, according to EEC officials, was labor availability. "There were never enough hands; too many young boys and girls, and old people; 1,300 people were needed to clear the land, yet only 600 were available, one EEC official said. Consequently, in 1981, three bulldozers were brought in.

Food aid as a wage supplement was first provided to the project in October of 1982 (having been requested in May of that year). It immediately impacted on the availability of casual laborers and increased productivity, according to EEC officials. The ration was valued at 45 cedis a day (minimum wage is 30 cedis per day), and contained food to feed a family of five for one day.

The Pretsea Project is similar to the above, with the inclusion of the rehabilitation of existing oil palms and some new plantations. Again, problems cited by EEC officials were attendance and shortage of labor.

The EEC is meeting the foreign exchange costs of both projects. These have included a mill, internationally recruited staff, and equipment. The GOG is providing local costs, and is also responsible for the small-holder aspect of both projects (which hasn't yet started).

B. Catholic Relief Services

Catholic Relief Services (CRS) has been operative in Ghana for some twenty-five years, focusing their efforts primarily on mother/child health clinics and school feeding in primary schools. Three years ago several food-for-work projects were also implemented throughout the country. These have included school and community gardens, oil palm plantations, cassava fields, and rabbitry. Recipient levels for 1984 are as follows:

<u>PROGRAM</u>	<u>METRIC TONS</u>	<u>RECIPIENTS</u>
Mother/Child Health:	14,954	179,000
School Feeding:	1,956	50,000
Other Child Feeding:	52	1,000
Food-for-Work:	812	5,000
Pre-School Feeding:	587	15,000
Totals:	18,361	250,000

In the coming months, CRS will receive an additional 18,000 MT of commodities to distribute as emergency feeding rations to the neediest sectors of the population, as well as 5646 MT to monetize for logistical support of the emergency effort. Apart from emergency programs, CRS goals are to increase the size of the ration before increasing recipient levels (AID/Washington sets the ration size), to base a staff member in the north, and to program between 14,000 and 37,000 metric tons of food a year.

Management: The CRS staff in Accra includes the director, the deputy director (a Ghanaian with over ten years on CRS staff), a program officer and a field officer. Staff shortage has been a problem, they say, especially with regards to program monitoring. Plans are underway to hire additional staff shortly to assist with the emergency feeding operations (notably warehouse and port people, supervisors, and one additional field officer). An ex-Peace Corps Volunteer was recently hired as a food monitor in charge of the food warehouse at the port and to oversee the logistics of trucking the food to the northern areas.

CRS conducts program seminars each year in each of Ghana's eight regions to reinforce understanding of projects, explain record keeping, clarify any innovations, and probe needs. These seminars are attended by the Accra staff, nutritional resident supervisors, government officials, church representatives, Red

Logistics/Procedures: In requesting Title II commodities from Food for Peace/Washington, CRS follows the standard procedure of application. In the initial estimate of requirements submitted annually (AER), ballpark numbers of projects and recipients are used. There is no formal roster at this stage, just an incremental increase in line with what they believe they can feasibly undertake as an institution. Once the request is approved and the commodities sent, CRS then does its quantification from its store of application requests. MCH clinics and emergency feeding requests are always filled first. FFW is also considered a priority. CRS/Ghana noted that almost every reasonable FFW request for funding was at least considered if not approved.

CRS is now receiving all of its shipments at the Takoradi port because of poor security in the past at the Tema port. Many storage facilities are available for rent due to the Ghanaian crop failures; CRS storage needs are being adequately met both at the port and at the regional distribution centers. There are five satellite warehouses. The commodities are trucked out to the project sites. The communities work out their system of distribution based on general CRS distribution guidelines (see Akobima Case Study for further illustration).

Accountability: CRS requires responsibility at the local level for reporting (written or verbal), the overseeing of food distributions, and other measures of accountability. Specifically, all CRS food assistance programs (MCH, FFW, and emergency feeding) are managed through the regional MCH programs, under the supervision of the nutritional resident supervisor. As one CRS program officer explained: "The approval and monitoring of our FFW projects is facilitated by the fact that in most cases we already know the communities and individuals involved through the MCH program." One individual within the community spearheads the FFW application on behalf of the local community organization. CRS monitors the application to assure that figures have not been inflated (i.e. a maximum of 20 beneficiaries are allowed per acre). Once approved, this same individual with assistance from the local People's Defense Committee will continue to be responsible for overseeing the food ration distribution. New projects are formally reviewed by CRS after three months of operation to determine viability and continuation criteria. CRS officials noted that they would like to visit all sites each quarter; however, staff shortages and the large number of FFW projects often makes this unrealistic. They rely on self-monitoring at the village level, and they conduct spot checks for verification. As one CRS official stated, "With some guidance, self-monitoring of projects by People's Defense Committees is possible because PDCs are disciplined and responsible organizations."

If for reasons of flagging interest or attrition, a project is deemed to be no longer satisfactory, efforts are taken to change attitudes and encourage renewed interest; the last measure taken would be to discontinue food-for-work assistance.

Food-for-Work Programs

In its fielding of new requests for FFW projects, CRS requires that applicants respond to questions which include the following:

- What do you need the food for? What are specific targets and objectives?
- Who will take part in this project?
- Who will own the project?
- How long will it take to complete the project?
- What inputs do you have on hand?
- What is the implementation schedule?

One selection criteria, as previously mentioned, is that the FFW project must be linked into an already existing MCH clinic. This in fact is in direct line with CRS's "associated development" approach; that is, the forging and alliance of new programs alongside existing ones. Other criteria used in the selection process include the following:

- **Commitment:** There must be a demonstration of intention to carry through with the project as well as a clear articulation of how much and what the project hopes to accomplish.
- **Viability:** The proposed project must show a clear sense of feasibility.
- **Management Capability:** There must be a clear delineation of responsibility both in the distribution of rations and the reporting of progress.
- **Self-Sustaining Potential:** If the project shows good potential for becoming a true self-help and autonomous project in the long run, then funding is more likely.
- **General Benefits:** The FFW project must benefit the entire community and not just the churches or mosques, for example.

It should be noted that at the conclusion of the one-day round-table conducted by the team, the CRS official in attendance stated that an additional selection criteria would be added to FFW food production projects--namely, agroforestry.

The rations distributed to the 200+ FFW projects country-wide are seen as having had a good impact upon recipients, however it is acknowledged by CRS/Accra staff that the size of the ration is really "token" both in the giving and the taking. "It cost us six sacks of beans to produce one sack of FFW sorghum!" said one program manager. The rations (usually given at the end of each day's work in the community plots) allow people the opportunity

to absent themselves from their own food production efforts to work on the community effort. It must be emphasized, however, that CRS/Accra views these rations as compensation for labor volunteered, not as wages for employment. The International Labor Organization (ILO) requires that food rations make up no more than 50% of total wages to permanent employees.

The major obstacles with FFW projects as outlined by CRS staff are listed below.

- Productivity: reduced output due to environmental factors (i.e., no rain) and lack of agricultural inputs.
- Continuity: transfers of personnel and laborers; loss of participants due to flagging interest and/or attrition.
- Logistics: transport difficulties, and timeliness of deliveries reaching targeted groups.
- Lack of materials.
- Lack of technical resources: sporadic availability of technical advice and assistance (seen as a missed and underutilized opportunity for hands-on training for rural participants).
- Diversion of goods: particularly truck drivers and warehouse workers whose pay is so low that they feel compelled to utilize a portion of the stock for their personal use.
- Falsification of applications: inflated numbers of days worked and number of actual laborers.

Case Study - Akobima

The team was afforded a first-hand view of a CRS food-for-work project in operation during a field trip to the community of Akobima. The project sponsored the clearing, planting, weeding, and harvesting of a five-acre cassava field located 1/4 mile from the village. The cassava is sold after harvest and the resulting monies are used for community projects. These funds are currently being used to construct a new primary school. The next endeavor, according to community leaders, will be a new bridge across the river on the road leading into the town.

There have been three generations of Peace Corps Volunteers involved with the Akobima project since its inception. The first started up the food-for-work project. The second continued spearheading efforts and got directly involved in the distribution of commodities (which led eventually to her disenchantment and abandonment of the work). The third has continued the

efforts but claims to be serving merely as a catalyst to community efforts and as a linkage between the community and outside resources.

It is noteworthy at this point to mention that when the current Peace Corps Volunteer refused to involve herself with the actual distribution of commodities for work performed, the community came up with its own system complete with the checks and balances explained below.

The mechanics of the community cassava project are not complicated. Women work in the field on Thursdays and the men on Saturdays. Older community members go to the field and "supervise" efforts, for which they are entitled half a ration. The People's Defense Committee is in charge of distribution and decision-making with its chairman firmly in command of project politics. He oversees record keepers, distribution meetings (to decide who does and who does not get the daily rations), distribution techniques, and also a penalty system whereby delinquent townspeople are charged fines of 50 cedis (US1.65) for not working in the field on their designated day.

The ration basket allotted to each worker is composed of rice (one margarine can full per day, calculated for two meals per worker per one man-day worked) and some vegetable oil. The composition of this ration varies according to the consignment sent out by CRS. Community members are permitted to use their rations however they best see fit. Sometimes they save their allotment, but rarely if ever do they sell it, according to community members. Aside from the fact that rice is a very desirable commodity and much valued by the townspeople, the rations are just too small to sell, they say. It was interesting to learn that when the December 1983 consignment was a full two months late, the women continued to work in the field, but almost all of the men stopped. When the allotment did finally arrive, only those who worked were given their rations retroactively. (It was learned upon questioning that the men did not get fined for their absenteeism during that period.)

Not only are the women the most reliable participants in the cassava field, according to the PDC, but they are also undertaking marketing of the cassava. However, they volunteer time for these additional activities only after their own farms are tended.

The project has made good headway and constructive change since its inception. Before, people were divided into groups of five to work on each others' farms and were paid with food for their efforts. The rationale for switching to a community effort on land donated by the PDC chairman was twofold: first, they felt that a community field would ensure a continued supply of staples through the lean season. Second, by organizing people onto one plot, two young farmers from the community who had had some technical training (one went to a technical school and the

other to an agricultural school) were able to disperse new methods to the group (such as planting in rows) through "hands-on" experience.

The two self-designated "extension agents" mentioned above continue to receive specialized training through community sponsorship to technical workshops. Both men and the community recognized the inherent value in the education that the FFW project afforded in creating a demonstration plot and in providing a "hands-on" learning situation.

C. Adventist Development and Relief Agency

The Adventist Development and Relief Agency (ADRA) has held a moderately active development presence in Ghana since 1946. It is only recently, however, that they have opted to move into food assistance relief efforts. These have included, most notably in 1983, an emergency relief operation for returned Ghanaians deported from Nigeria in which food, medical, and clothing supplies were airlifted from the US. This year, ADRA is participating in the distribution of Title II emergency feeding commodities to selected needy groups throughout the country. Recipients in 1984 number 1,000 for mother/child health programs, with the use of 3,180 MT.

As a stop-gap measure before these PL 480 commodities arrive, ADRA negotiated donations of wheat from Finland, dried skimmed milk from Holland, and dried fish from Norway for feeding operations begun in three regions. ADRA determines its neediest recipients by charging a locally-based committee with the surveying of towns and the collection of names from local town committees and PDCs; on-the-spot verification checks are then conducted to ensure accuracy. Distribution priorities are pregnant and lactating mothers, children under five years old, and the elderly. Once the communities are canvassed and the list of recipients drawn up, a coupon system of delivery will be instituted whereby coupons will be exchanged for commodities and a new coupon.

To gear up for this new effort, ADRA has hired ten trucks and has purchased four others abroad. ADRA will undertake costs of spare tires, batteries, and parts, but USAID will finance petrol needs. The plan, according to the ADRA Country Director, is to transport the food with the leased trucks to several regional centers where they have already rented storage facilities; then, from there, the commodities will be transported to the villages in ADRA's own trucks. Several more staff members will be hired to help implement this new initiative.

The ADRA Country Director, who currently also wears the hat of the ADRA Youth Program Director, stated that the organization is interested in expanding their presence in Ghana to embrace new projects, especially in food-for-work. Their first priorities will be in the areas of FFW rural roads, FFW agriculture schemes, and in mother/child health clinics; but there is strong interest in considering other FFW projects, such as woodlots.

D. The Salvation Army

The Salvation Army operates in the Eastern and Central regions of Ghana. Noteworthy among their ongoing projects are primary and secondary schools (fifteen in number), clinics, and churches. In some schools, maternal/child health clinics which receive Title II food from the Catholic Relief Service have been established.

In the town of Begoro, a former Peace Corps Volunteer is the Director of a Salvation Army program that includes a forestry component which he himself conceived. He originally started with rabbitry extension workshops and then branched out to include the agroforestry component "which was only natural to include." The workshops are held in Salvation Army primary and secondary schools for both teachers and local farmers. His method is to start in the morning with rabbitry and then ease into the activities in agroforestry in the afternoon. Film strips are used for further reinforcement of techniques and ideas. Up to twenty-nine "progressive" farmers have attended. "There is an awful lot of talking and sharing that is going on," he said.

In addition to the workshops, there are two other major elements to the projects: seed selling, and the establishment of demonstration plots. He collects the seeds (Leucaena leucocephala) himself and sells them to cocoa farmers for 20 cedis (US.75) per packet. He instructs them on growing leucaena for shade, forage, and fuel. The establishment of demonstration plots is carried out by students and teachers in the Salvation Army schools. Maize and cassava have been intercropped with leucaena trees, with a future plan to build in a rotation of yams and beans. The farmers are better able to grasp the potential of leucaena as "fertilizer trees" in observing these agroforestry model plots, according to the director.

E. Other Organizations

Other organizations and agencies in Ghana that are either currently involved in food assistance or forestry, or that have indicated an interest in doing so in the near future include:

- ° Canadian International Development Agency (CIDA): CIDA currently has plans to program food aid in the next year and was a contributing donor to the World Food Programme in Ghana this past year.
- ° British Volunteer Service Overseas (VSO): VSO has no forestry projects in Ghana at this time, although they indicated a move in that direction. A VSO forestry consultant was recently in the country to investigate programming possibilities in forestry.
- ° European Economic Community (EEC): Current EEC activities include road building, trade promotion assistance,

industrial and training assistance, dam work, and oil palm plantation. The EEC also grants food commodities to the GOG for monetization into counterpart funds to assist development projects in meeting their local expenses. This local fund, however, is frozen at present and no expenditures are being realized. Under consideration by EEC at this time is a technical assistance provision for small land owners.

- Ghanaian Organization of Volunteer Assistance (GOVA): GOVA is a Ghanaian NGO that gets its funding from solicited grants. Their current scope of activities includes community development efforts and agricultural extension schemes. There are at this time several PCVs attached to GOVA.
- U.S. Peace Corps: There are currently no Peace Corps foresters in Ghana. Two PC foresters completed their service in mid-1984. Both were special placement Volunteers: one did charcoal research for the Forest Department; and the other was conducting a biological inventory for the Council on Environmental Protection. PC/Ghana's Country Director told the team that a major forestry/PL480 food-for-work initiative would be welcomed; however, he added, to support such an initiative, funding for an additional Associate Peace Corps Director (APCD), and for state-side pre-service training as well as for in-service training would be essential.

CLOSING ROUNDTABLE

On February 10, 1984, the team designed and facilitated a five hour roundtable in Accra as the closing activity of the ten-day fact-finding mission. The 11 roundtable participants included the heads of Peace Corps, the GOG Forest Department and the World Food Programme, as well as representatives from USAID, CRS, ADRA and the GOG National Defense Committee.

The stated goals of the roundtable, agreed by the participants, were:

- to bring together people with common concerns;
- to share ideas and viewpoints on food aid and forestry;
- to share Ghana-specific team observations and data collected over the previous 10 days; and
- to search for prospects which address these concerns, ideas and observations.

The roundtable was seen by the team as a means of validating and/or qualifying observations and data gathered during ten days of interviews and site visits, and to generate further discussion among people who have the most direct in-field experience with forestry and food aid. The following observations were put forth to the group; their qualifiers are listed below each statement.

Food Aid

1. Lack of technical and other resource support is severely limiting the effectiveness of food-for-work programs.
 - Lack of, or at least severe shortfall.
 - "Technical" means skilled manpower as well as professional grades.
 - "Resource support" means material, vehicle, and to some extent, staff support.
2. Food aid affects attendance.
 - In some projects only.
 - This means the incentive type of food aid, not the compensatory type.
3. The food shortage in Ghana cuts across all segments of society (and the population in the urban fixed-income bracket is the most affected).
 - Farmers affected by drought are suffering from the food shortage.
4. In Ghana, the issue of dependency at this time is not a factor in food aid.

- In the North, dependency is apparent.
- 5. Food aid has not affected food prices in Ghana.
 - Has rice?
- 6. Communities that are well organized are capable of handling their own distributions in an equitable manner.
 - That is, communities at the local level.
 - Handling and managing.
- 7. In Ghana, food aid is not currently a disincentive to local production.
 - The incentive type or the compensatory type of food aid?

Forestry

1. In the North, the local populace recognizes a shortage of fuelwood.
 - But it is not restricted to the North.
 - The fuelwood shortage is recognized especially in densely populated and ecologically degraded areas.
 - In the Ashanti region, people talk about fuelwood.
2. In the South, population and food production are putting excessive pressure on forest resources.
 - Everywhere in the country it is excessive, not just in the South.
 - Food production and methods.
3. Women are an important but relatively unrecognized force in Ghana.
 - But forestry does recognize the importance of women.
 - Quite a few women are at the mid-level technical level.
4. Materials for carrying out forestry projects are scarce and/or lacking.
 - The planting of trees does not necessarily require material and resources.
 - Planting stock (seeds, seedlings).
 - Local materials (e.g. cutlasses) are also scarce.
5. There are very few community forests in Ghana.
 - That is, few planted community forests.
 - There are natural community forests, although they are now being neglected due to pressure put on them.

6. Agroforestry is currently being extensively practiced here.
 - Extensively?
 - Partially, but it is not recognized as agroforestry by farmers.
 - Agroforestry is already part of the traditional system -- centuries old, and it just needs to be capitalized on.

7. Bush fires are a very destructive force on natural resources in Ghana.
 - They have been for centuries, too.
 - That is, renewable natural resources (soil, water, property, and climate).
 - Last year, southern Ghanaians began recognizing the problems, i.e., the destructive force of bush fires.

Prospects

The group was then divided into two groups and asked to discuss prospects for addressing the above-stated problems, concerns and observations. What follows are the kernels of recommendations arrived at by each group and reported to the large group.

GROUP A:

1. Programming
 - Environmental--conservation (soil, water, shelterbelts).
 - Community--fuelwood, building materials, cottage industries, food/fodder.
 - Industrial
2. Food aid--necessary in present situation.
 - Incentive
 - Compensatory
3. Collaboration
 - Internal--government agencies, voluntary agencies, community-based organizations.
 - External--food aid, work-related inputs, inter-regional experiences.
4. Organizational assistance
 - Strengthening internal organization
 - Community and national levels
5. Technical assistance
 - Assessing actual needs
 - Information dissemination
6. Local and national resources
 - Taking stock of resources (physical, human, financial).

GROUP B:

1. Food aid and forestry programs should be linked with an

- educational component that recognizes the value of forestation.
2. Focus should be on agroforestry.
 3. Focus should also be placed on combatting the causes of food shortages while saving the environment.
 4. Incentive type of food aid should be adopted.
 5. Schools should play a central role in any program:
 - Curriculum--forestry and agroforestry
 - Development of flying nurseries
 - Collection of seeds
 - Baskets woven from local materials, for seedlings
 - Education of wide community; both pupils and teachers involved.
 - Examples of trees in school compound
 6. Collaboration: Multi-disciplinary approach
 - Ministry of Agriculture
 - Ministry of Education
 - Ministry of Transportation
 - Ministry of Lands and Natural Resources--Forest Department
 - Chiefs
 - Community groups
 - Mission agriculture projects
 7. Organizational assistance to coordinate community projects
 - Overseas volunteers
 - Extension officers
 8. Technical assistance
 - At district and regional levels
 - Educational materials
 9. Resources
 - Available but in need of motivation: human and labor.
 - Required: materials; vehicles; tools; and poly-pots.
 10. Education
 - Importance of trees to environment
 - Production of seedlings
 - Site selection
 - Planting techniques
 - Management of plantations
 - Prevention of bush fires
 - Dangers of deforestation

Conclusions

As a concluding exercise, the roundtable participants were asked to share their "conclusions" from the morning's activities. Among the more pointed statements were the following:

- "Community members definitely need to have input into the planning and execution of projects that concern them."

- "It is obvious that Ghanaians have a lot of faith in themselves, that they can do it of their own accord. Ghana is able, by itself--it'll never give up."
- "Ghanaians need to recognize their own internal resources before automatically bringing in outsiders. All too often, Ghanaians prefer to listen to outsiders even though they (the foreigners) may have less experience and lower academic credentials than the Ghanaians."
- "It is essential that extensionists collaborate with field technical officers and with community health educators at the local level. Likewise, their supervisors should do so at the national level."
- "We need to tighten up on our own organizations and be more active by tapping into existing resources and infrastructures."

Applications

Lastly, this question is asked: "What will you think about now as you walk out the door?" Among the answers were the following:

- "In our training for Peace Corps extensionists, the upcoming one, we definitely need to include a forestry component."--Associate Peace Corps Director
- "I can see that adding agroforestry to our existing FFW projects would be fairly easy to do; adding it on as another programming requirement. An example would be tree planting around a cassava patch."--CRS representative.

INTERVIEWS

The following individuals in Ghana contributed to this report:

GOG Officials

1. Dr. Emmanuel Asibey, Chief Administrator, Ghana Forestry Commission
2. Dr. John H. Francois, Director, Forest Department
3. Dr. B.W. Garbah, Director, Council on Environmental Protection
4. Mrs. Disharp, Principal Secretary, Ministry of Agriculture
5. Mr. A. Tanoh, National Defense Committee, Programming/Projects Office
6. Dr. E.O. Nsenkyire, Forest Department
7. Kwisi Kese, Forest Department
8. Dr. Rex E. Chachu, Regional Forestry Office, Kumasi
9. Philip Kofi Asabere, Regional Forestry Office, Kumasi
10. Newman Gyanera, Technical Officer, Jemira Project
11. Seth Ansong Osafo, Council on Environmental Protection
12. Mrs. Valeria Saki, Office of Information, National Defense Committee

USG Officials

13. Robert Fritts, US Ambassador
14. Wilfred Gonzalez, Peace Corps Director
15. Jon Eklund, Associate Peace Corps Director/Administration
16. Besa Amenuvor, Associate Peace Corps Director/Agriculture
17. Michelle Fruge, Associate Peace Corps Director/Rural Development
18. George Ayabante, Associate Peace Corps Director/Education
19. Tom Luche, Program Development Officer, USAID
20. John Thomas, Agricultural Economist, USAID

Private Voluntary Organizations

21. Paul Cunningham, Director, CRS
22. Hannah Evans-Luddodt, Deputy Director, CRS
23. Nancy Keteku, Program Officer, CRS
24. Solomon Safu, Program Officer, CRS
25. Glenn Howell, Director, ADRA
26. Seth Laryea, Program Officer, ADRA
27. Pastor Scully, ADRA Consultant
28. Andrew Engel, Program Manager, Salvation Army

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Others

29. Jean-Pierre Noblet, Country Representative, WFP
30. Cam Bowes, First Secretary, CIDA
31. Gary Quince, Senior Economist, EEC
32. Mike Reed, CIDA
33. Mrs. Coleman, Project Assistant, World Bank
34. Emmunuel Sawer, Director, GOVA
35. Chris Pearson, Director, British VSO
36. Alban Corbin, Agro-journalist
37. Sister Britta, Catholic Church, Kumasi
38. Ben Bryant, PSC, Togo
39. Carol Kamm, PCVL
40. Wally Parson, PCV
41. Stephanie Schultz, PCV
42. Ralph Kumasi, PCV
43. Laura Richardson, PCV
44. Dave Richardson, PCV
45. Joe Mataka, PCV
46. Cam Peters, PCV
47. Bonnie Coulter, PCV
48. Alan Coulter, PCV
49. Ron Yamaoto, PCV
50. Kojo Amissah, PDC Chairman, Akobima
51. Kewbena Mensah, PDC Executive Committee, Akobima
52. Munko Boaneo, PDC Executive Committee, Akobima
53. Kojo Ajyekum, PDC Food Committee Chairman, Akobima
54. Kwame Ajyekum, PDC Assistant Food Committee Chairman, Akobima
55. Ama Kate, President, Women's Group, Akobima
56. Efuah Ahoba, Women's Group member, Akobima
57. Esi Kuma, Women's Group member, Akobima
58. Mama Aba, Women's Group member, Akobima
59. Kwisi Aqua, organizer, Akobima
60. Kweku Tawai, farmer, Akobima

ANNEX 2: SENEGAL

COUNTRY SUMMARY

The PL 480 assessment team visited Senegal from February 13-26, 1984. During this period the team interviewed 44 individuals and visited four project sites. Information from those interviewed, as well as observations from the site visits, is included within this country report. The following is a listing of this team's learnings, conclusions, and recommendations drawn from the individual interviews and site visit observations.

Learnings

- ° The success or failure of rainfed forestry projects--regardless of how well designed and funded they are--is ultimately determined by climatic conditions.
- ° Pilot projects involving new approaches to forestry development--because of the inevitable program adjustments that need to be made in technical, managerial and logistical procedures--would best be implemented first in climatically low-risk areas.
- ° Projects supported with PL 480 Title III revenues risk delayed and even reduced funding if the Title III commodity is inappropriate for the country.
- ° As seen in the Diourbel project, the effectiveness of a collaborative initiative involving USAID, Peace Corps, the host government and a PVO is contingent on:
 - ongoing role clarification among the participating entities; and
 - streamlined project management, particularly with regards to consultation, decision-making and funding mechanisms.
- ° Raising vegetables in nurseries and intercropping cereals and tubers in woodlots maximizes land use and resource investments, such as fencing and wells, and provides added incentive to keep animals out.

Conclusions

- ° Due to continuing drought conditions, Senegal is facing a food deficit of emergency proportions.
- ° Given climate and land availability, forestry development in eastern Senegal and the Casamance offers the best potential of supplying the fuelwood needs of the country.
- ° In overpopulated western Senegal, private woodlots on non-agricultural land and agroforestry extension are

more appropriate approaches to forestry development than community woodlots.

- The GOS Forestry Department, USAID, and Peace Corps have a history of successful collaboration: PCVs are seen by the Forestry Department as an effective link between communities and project management.
- USAID is a major supporter of natural resource programs in Senegal. It is interested in continuing support to this sector.
- Peace Corps, which is currently collaborating with the GOS Forestry Department in a FFW project, is interested in expanding its forestry program.
- CRS is interested in implementing FFW forestry projects as part of its Associated Development Activities (ADA) program. They have already discussed collaborative possibilities in forestry development with Peace Corps.

Recommendations

- A PL 480 forestry pilot project should be implemented in Senegal, contingent on the following conditions:
 - that USAID is prepared to commit staff time and funding to the initiative;
 - that Peace Corps is prepared to commit PCVs and staff time to the initiative;
 - that the GOS Forestry Department is prepared to commit staff and resources to the initiative; and
 - that CRS is prepared to sponsor at least the FFW component of the initiative.
- If these conditions are met, the pilot project should be a collaborative initiative among the following entities:
 - USAID;
 - Peace Corps;
 - the GOS Forestry Department; and
 - CRS.
- If the above entities agree to collaborate on the community forestry initiative, the following issues will need to be addressed:
 - technical site considerations;
 - socio-economic site considerations;
 - organization and management, i.e. role clarification; and

- scale of pilot sites, including staffing and funding requirements.

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COUNTRY ASSESSMENT

A. The Food Situation

Largely due to the serious and continuing drought conditions, Senegal is suffering from an inadequate supply of food to feed its people.

In the 1982/83 season, millet and sorghum production fell to 585,200 tons, from 986,100 tons in the previous season. The 1983/84 crop was not expected to surpass 350,000 tons. The paddy rice crops, while down from the 1982/83 level of 105,200 tons, was not as drastically reduced, but the maize crop fell sharply from the 82,100 ton level recorded in 1982/83.

Recent assessments of the impact of the drought indicate that 275,000 MT of food will need to be procured from abroad in addition to commercial imports, notably the rice imports from Thailand that now total some 350,000 - 400,000 tons. Most of the rice is consumed in the urban areas.

B. Food Aid

The major sources of food assistance to Senegal have included the World Food Programme (WFP), the USA and the European Community. The Government of Senegal (GOS) is distributing much of this assistance as emergency food aid to urban and rural people throughout the country; it was reported that every citizen on the tax rolls is eligible to receive food aid commodities.

A PL 480 Title III Food for Development agreement with the GOS was signed in May 1980. It provided \$7 million of rice annually for a three-year period (1980-1982), for a total of \$21 million. A one-year extension was approved for FY83 for an additional \$7 million, bringing the program total to \$28 million.

Under the Title III agreement, the GOS agreed to use local currencies generated by the rice to fund various development projects; these projects, according to Title III legislation, complement but do not substitute national or donor resources.

The objectives of the Title III agreement, according to USAID officials, are twofold: to increase agricultural production and to strengthen the position of the poor in the process of economic and social development. The specific programmatic thrusts of the agreement include:

- activities which improve the production, storage, and marketing of agricultural commodities;
- policy studies of food marketing and pricing; and
- the conservation of natural resources.

The following forestry-related projects are being financed with monies generated from the sales of the 1983 extension agreement:

- The Land Generation Fund (US\$314,000);
- Community Reforestation (US\$114,000);
- Village Woodlot Development (US\$969,000);
- Bandia Forest Maintenance Research (\$329,000);
- Energy-Efficient Cookstoves (\$360,000);
- Charcoal Production Training (\$429,000);
- Environmental Rehabilitation Study (\$229,000);
- Hydrogeological Studies (\$1,086,000); and
- Niayes Reforestation and Dune Stabilization (\$6,714,000).

A major problem plaguing the Title III program is the inappropriateness of the US commodity--rice: The 20% broken rice provided under Title III is not a preferred commodity in Senegal, where primarily 100% broken rice is consumed. The 100% broken rice is bought very inexpensively from Thailand (at US\$217/MT), while the US rice is bought at a higher price (approximately US\$293/MT). Consequently, the US rice has been difficult to sell, which has resulted in lagging revenue generation. Moreover, the GOS has been forced to sell most of the rice at a loss and under Title III regulations they must make up the difference. "The 20% broken rice is a terrible Title III commodity," one USAID official said, "a loser from the word go."

Specifically, Title III regulations stipulate that the recipient government must maintain a special account for the Title III-generated revenues, and that it must represent the local currency equivalency of the value of the commodity as set by the USDA and the Commodity Credit Corporation (CCC) at the time of the agreement. The GOS, however, has been unable to make up the losses in local currency, and some projects are now operating on less than 40% of their budgets.

The strength of the dollar against the CFA has exacerbated the problem. The dollar against the CFA is worth about twice what it was when the Title III agreement was signed. This substantial difference in the exchange rate has widened the gap even more between the local market price and the US commercial price, which was set in US dollars by the USDA and the CCC. Since the Title III special account must represent the local currency equivalency, the GOS has had to make up the difference.

The Title III special account is managed by a committee composed of four members: one each from the Ministries of Plan, Cooperation, and Finance, as well as one representative from AID. The officials representing the ministries are generally drawn from the third tier of personnel, which is considered fairly high level. The committee is responsible to the Ministry of Finance.

The management committee was set up as a decision-making body with the mandate to determine the allocation of funds to the

various projects. This arrangement is considered a pilot model; it is the only such Title III arrangement in West Africa.

Because funds are often very short, due to the slow-selling rice, the committee is now prioritizing projects. Some observers claim that the prioritizing is being done in a very ad-hoc manner: "Whoever screams the loudest gets the money," one official said. Another official noted that the shortfall in funds hasn't been all bad: "There has been tighter management of funds. They are being used more effectively since there is so little. Projects are getting more 'uumph' out of each CFA."

Commonly mentioned problems inherent in the committee's workings are as follows:

- the length of time it takes for monies to reach the committee from the "Caisse de Perequation et de Stabilization des Prix" (Price Stabilization Fund) for final disbursement;
- unclear records as to just how much money is available to any one project;
- lack of a systematic approach to setting funding priorities;
- absence or irregular attendance of committee members; and
- irregular availability of Title III monies to projects when timing is most critical (e.g., to buy plastic bags for the nurseries).

C. The Forestry Situation

The natural forest cover of Senegal, now estimated at 13.8 million hectares, has been reduced by 30% in the last thirty years, and on present trends would decline another 20% by the end of the century.

Theoretically, an annual wood production of 7.2 million m³ is available to consumers; unfortunately, nearly 90% of the potential is in eastern Senegal and the Casamance, far from the densely populated areas of western Senegal. This figure reflects the depletion of natural resources in the overpopulated western regions. The remaining fragile forest cover of the western regions will soon be destroyed, officials say, unless urgent remedial action is taken.

Total fuelwood consumption in 1981 was estimated at 4.6 million m³. In the absence of any change in the consumption of wood as fuel and assuming that the population growth rate remains at 2.8%, consumption would rise to 7.2 million m³ in 2001 and 10.1 million m³ by 2016, according to a recent World Bank

assessment.* This same report notes that an estimated 83% of 1981 consumption was met by uncontrolled production in the rural areas.

Forestry Department. The Forestry Department, under the Ministry of Rural Development, is implementing several donor-assisted forestry projects including:

- sand dune stabilization and tree fodder plantations along the northwest coast (USAID, FAO/UNDP, and CIDA);
- natural forest management in the Casamance (Dutch aid/UNSO);
- state-managed rainfed tree plantations in Thies, Sine Saloum and the Casamance (the French and USAID); and
- community forestry (NGO, USAID, and WFP).

The USAID-supported sand dune stabilization project, given its budget constraints, has more than met expectations, according to GOS Forestry Department and USAID officials; the rainfed tree plantations and the community forestry projects have not, primarily due to the drought.

D. Forestry Issues and Problems

Among the most serious constraints facing the forestry sector in Senegal, in addition to ongoing drought conditions, are staffing and funding levels, and overgrazing.

Staffing and funding levels. Given the magnitude of the forestry problems in Senegal, the Forestry Department is insufficiently staffed and funded. It is unable to protect the forests against illegal cutting, overgrazing and fires and to carry out forestry development on the required scale.

Similarly, the National Forestry Research Center, which is part of the Senegal Agricultural Research Institute, has insufficient qualified staff at all levels and is short of equipment and facilities for research to improve forestry technical packages. The development of forestry technical packages more suitable for arid and semi-arid lands, i.e. with annual rainfall in the range 0-1000 mm/year, is seen by donor officials as an essential element of Senegal's fuelwood strategy.

Government funding priorities and commitment to policies designed to control over-exploitation of the natural forests tend to give way too often to short-term perceived needs, such as increased livestock and food production. As one USAID official explained: "Forestry is a segment of the economy that is truly additional."

*Senegal: Issues and Options in the Energy Sector. World Bank Report No. 4182-SE. July, 1983.

Overgrazing. Traditionally, nomadic herdsman are permitted by landholders to pasture their cattle, sheep and goats on harvested fields. In the process, the land is fertilized.

With the drought conditions of the last few years there has been little in the way of crop residue. Herdsmen have resorted to cutting trees and shrubs--many of which are nitrogen fixing--to provide fodder for their animals. In the Diourbel Region, little vegetation was observed, with the exception of scattered kad trees (Acacia albida), most of which had many limbs cut off. Any natural vegetation that does get started is almost immediately destroyed by animals. It was interesting to note the natural regeneration of kad at several fenced nursery sites.

In Senegal, both fuelwood demand and overgrazing are major contributing factors to decreased soil fertility and soil erosion. It was reported that the river running through the city of Diourbel had regular boat traffic 30 years ago; the river is now almost completely silted in.

PROGRAMS, PROJECTS, AND CASE STUDIES

A. The World Food Programme

WFP maintains an active presence in Senegal with sponsorship of five projects, two of which are forestry-related:

- Conservation and Development of Natural Vegetation. Commodities totaling some 12,000 MT of oil, meat, fish, rice and sorghum are provided to this afforestation project for activities such as planting of Acacia albida, windbreaks, village woodlots, fire control, fire breaks, nursery development, soil rehabilitation, and sand dune stabilization.
- Agricultural Development in the Sine Saloum Area. Approximately 5000 MT of commodities have been committed to this afforestation project for activities, including tree planting, soil rehabilitation, and woodlots.

The commodities for the two forestry-related projects, which benefit some 175,000 recipients, are channelled through the GOS Forestry Department. The Conservation and Development of Natural Resources Project provides FFW commodities to the GOS/USAID Diourbel Village Woodlot Project, in which Peace Corps foresters provide technical assistance.

Case Study - The Diourbel Village Woodlot Project.

The region of Diourbel, in the middle of the groundnut basin, faces severe fuelwood shortages, due to increasing population pressure and adverse climatic factors. It was targeted as the site of a village-based woodlot project in 1980, and has received project support from several agencies and organizations: WFP; the Peace Corps; USAID; and Africare. The GOS Forestry Department is the implementing agency.

The project's first two years were funded under a USAID operational program grant (OPG) to Africare. In 1984, PL 480 Title III counterpart funds replaced the OPG, and an additional two years of funding was approved. Africare's participation in the project ended with the OPG.

In recognition of the land constraint problems of the densely populated Diourbel Region, the project goal is to decrease, not eliminate, the fuelwood deficit by 25-30% by the year 2000. According to a recent evaluation report (Lai, 1983), this would require a production target of 92,000 m³/year by the end of the century, or the establishment of over 30,000 ha of woodlots in Diourbel Region. Because of the region's serious land constraints, the Lai report suggests that much of this planting will need to take place on non-agricultural lands (depressions or

"bas-fonds"), which represent over 40,000 ha of the Diourbel Region.

Specific project activities have included:

- fuelwood planting, not only to reduce the burden on women, who now walk great distances for wood, but also to reduce the use of cow dung as fuel, which is depriving the land of natural fertilizer;
- planting of Acacia albida, to increase soil fertility through nitrogen fixing; and
- planting shade trees and fruit trees (mango and lemon) within the compound and the community.

The Diourbel Project is managed at the regional level by the Chef d'Inspecteur (regional officer) of the GOS Forestry Department. The project includes two sub-regions, the Diourbel Sector and the Bambey Sector. Peace Corps Volunteers, currently numbering five, carry out forestry extension work in participating villages in the Diourbel Sector, identifying material needs and supervising nursery and woodlot work. GOS Forestry Department technicians carry out extension activities and nursery and woodlot supervision in the Bambey Sector.

The villages that participate in the project were selected on the basis of a demonstrated or expressed interest, according to project officials. Eight villages were selected in the first year of the project, twelve more in 1982, and a final seventeen added in 1983--for a total of 37 villages. This year, officials said, the project will concentrate on these villages with no further expansion planned. It was noted that as the project expanded one village's efforts often served as a model for others to emulate. Conversely, one village representative told how nearby villages often mocked their reforestation efforts, stating that it was a waste of time.

WFP Assistance. The Forestry Department also manages the distribution of WFP food-for-work commodities. The official daily FFW ration, according to project officials, is 2.5 kg of sorghum, 125 gr of canned meat, 125 gr of canned fish and 100 gr of vegetable oil; however, these officials say, the actual amount distributed is subject to commodity availability.

This distribution, according to one Peace Corps forester, occurs at irregular intervals. Moreover, the commodities are usually dropped off in bulk and distributed at the discretion of the village chief. Most people in the village receive some food, she said, whether they work in the woodlot or not. GOS emergency rations, she added, are distributed in the same manner, and a clear distinction between the two programs is probably not evident to most people.

Other villages, when asked, were able to display well-organized distribution records. In one village, it is interesting to note, the records included names of people from three nearby villages which were not participating in the project. According to the head of the nursery, they would come to work in the woodlot to earn the rations. When asked if these workers would benefit from the trees when they were ready to be harvested, he replied that this issue would be dealt with when the time came. In most project villages, it was estimated that only 10-30% of the local population participated regularly in nursery and woodlot activities.

Nurseries. In 1983, a total of 38,000 seedlings were produced in 28 village nurseries throughout the Bambey and Diourbel Sectors. Nursery production at 28 sites ranged from 173 to 3431 seedlings; seven additional nurseries had zero production.

The nurseries, all fenced, are set up adjacent to wells. Sowing is done in March by direct seeding into plastic bags; and, for a period of one to three weeks after germination, depending on the species and the weather, the seedlings are shaded. (Acacia albida and Azadirachta indica require no shading.) All seedlings are weeded regularly according to project officials and watered once a day, usually by women, who comprise up to 80% of the FFW work force. The seedlings are grown in the nursery for four months and are planted in July, the first month of the rainy season.

In addition to fruit tree seedlings, which included mango, papaya and lemon, other species that were being grown in nurseries included Acacia albida, Azadirachta indica, Eucalyptus camuldulensis, Acacia lacta, Acacia holocericea and Prosopis juliflora.

The principal nursery problems cited by Forestry Department officials, PCVs and nurserymen were termites and water. The insecticide, HCH, was initially used to combat termites; but, because HCH is banned in the U.S., it was replaced with Tymul 35. (The Lai report notes that for severe termite problems, "Dielpoudre" has proven to be the most effective agent.)

The water problems were of two sorts: quality and quantity. In some parts of the Bambey Sector, it was reported that the water was so saline that the seedlings wouldn't grow. Salinity levels of over 320 PPM can adversely affect seedling growth.

Water shortages at nurseries is a problem prevalent in both sectors. The water table in many wells is so deep--50-70m wells are common--that drawing the waterbag up, once filled, requires more than a minute. Wells are usually surrounded with crowds of women and children waiting their turn to draw water. At some nurseries, it was reported, the nearby wells had gone dry.

Community Woodlots. Up through 1983 there were 36 community woodlots in the Bambey and Diourbel Sectors, ranging from 0.21

hectares to 3.0 hectares in size. Growth was projected at 3 m³ per hectares per year, given a fully stocked woodlot on which poles and fuelwood are grown at a 30/70 percent ratio on a seven year rotation.

Woodlot sites in the project are prepared by "sub-soiling" (plowing) in two directions. Each site is then fenced. Initially, very expensive "Australian" mesh wire fencing was used, which proved very effective. However, because of the expense, later plantations were done with 3 or 4 strands of barbed wire, reinforced with thorn bush.

After site preparation, seedlings were planted using a 5m X 5m or a 4m X 4m spacing. In the case of some 5m X 5m plantings, the spacing was later reduced to 2.5m X 2.5m by planting between the rows. An average of 40 man days of FFW labor was required to plant the woodlots, according to project officials. At all the sites visited, the seedlings were intercropped with peanuts, millet and/or beans.

The 1983 Lai report, basing its economic evaluation of the project on a zero opportunity cost for the land and a 12 % internal rate of return, concluded that if natural vegetation fencing (Euphorbia balsamifera and thorn bush) were used the woodlots would be profitable even with current survival rates and market prices. With expensive manufactured fencing, however, woodlots would not be profitable unless there was a substantial increase in the price of fuelwood. With the Australian fencing, for example, market prices would have to increase by a factor of 4.5.

Individual and Amenity Planting. Seedlings were also outplanted on individual woodlots, family compounds and communal land within the village. In two villages visited, the amenity planting had a 60% survival, almost double the 34% survival rates for the community woodlots. These seedlings had thorn bush piled over them, protecting them from animals.

It should be noted that the Lai report cited a 10% survival rate with fruit tree seedlings, most of which came from main project nurseries. The report attributed this low survival to transportation shock.

Kad Planting. Increasing soil productivity and crop production in the Diourbel Region with plantings of Acacia albida is considered a major project goal. Recent research indicates that kad planted at a 10m X 10m spacing and later reduced to 50 trees per hectare will not only increase crop production by 60-100% during the last 20 years of the 40 year rotation, but will also provide, in addition to fodder, 1.8 m³/hectare of fuelwood annually.

According to project estimates, the establishment of kad plantations requires 80 man days per hectare of FFW labor, 40% of which is for planting and 60% of which is for protection.

Training of Nursery Workers. Each year a training workshop (usually two to three days long) is held for carefully chosen participants to learn nursery techniques. There are now 34 trained nursery workers. The training is facilitated by project staff, including the Peace Corps foresters. During training, the participants visit each others' village nurseries; one PCV explained that this instills a sense of sharing, learning from others' endeavors, and perhaps even a kernel of inter-village competition.

Although in other regions nursery workers are paid to participate in training, it was reported that in Diourbel they are not paid. Project officials acknowledged that work performance may be affected by a lack of monetary incentive. The nursery workers receive FFW rations.

Problems. According to project staff, the drought has been the most serious problem affecting the project. Many people believe that the project--because it is a pilot effort--should have been implemented in a more climatically favorable area of the country. In so doing they say, other design problems would have been worked out before the model is implemented in areas where climate, as an unpredictable variable, is an added factor in determining the project's success.

The original objectives of the project are also questioned by some officials, primarily the proposal to establish 9 hectare community woodlots in the pilot communities. "Nine hectares is roughly equivalent to 18 or 20 football fields," one forestry consultant said. "Obviously, the original planners didn't have a grasp on how serious the land constraint problems are in this area." As it is, the existing woodlots are seen as insignificant in size, "not even a drop in the bucket," one official concluded, "and hardly worth the work and resources that have been put into them."

Other project design problems identified have included:

- unclear role definition from the outset of the project among the collaborating entities;
- a cumbersome management structure during the first two years when Africare administered the project, particularly with regards to consultation and decision-making; and
- unclear guidelines on how community members by participating in nursery and woodlot activities will benefit from the project, not only immediately with FFW commodities, but also in the future management and distribution of harvested wood products.

B. Catholic Relief Services

CRS has been active in Senegal since 1960. Their major program thrust over the years has been the Food and Nutrition Program, which is directed at pregnant women and children under the age of five.

Since 1982, CRS has been annually receiving nearly 15,000 MT of PL 480 sorghum, cornmeal, wheat blend, and milk, the equivalent of \$8.2 million. Ninety percent of these stocks go to the mother/child health (MCH) clinics; almost 10% go to food-for-work projects; and a small percentage go to social uses such as hospitals and lepers. Over 200,000 participants benefit in these programs each year, with FFW participants numbering 5,000.

CRS field staff, according to the director, travel around the country monitoring programs for the MCH clinics, checking charts and registers, and attending actual weighing sessions. In addition, the CRS director explained, "The participants are being encouraged to take on greater management responsibility for these programs through what we refer to as our 'sensibilization campaign.' Community leaders and the mothers," he added, "are keeping tabs on the distribution procedures and ration allocations. It's a 'peer' monitoring system." CRS noted that they adhere to a much stricter accountability policy than WFP due to their relationship with USAID.

Associated Development. Twenty-five income-generating projects will be promoted through the sensibilization campaigns this coming year in areas with established MCH clinics. This effort, which CRS refers to as its Associated Development Activities Program (ADA), will be funded with US\$369,000 from the fourth installment of Title III revenues. It is hoped that these activities will eventually reduce dependency on Title II food donations. Most ADA projects will include well construction to provide an adequate water source for village-level food production efforts. Tie-dyeing and chicken raising projects have also been proposed.

Food-for-Work. CRS has been providing FFW commodities to OFADEC, a Senegalese non-governmental organization best known for its highly successful resettlement project in the Senegal Orientale Region. The project has promoted integrated agriculture, with bananas as a primary cash crop. In 1985 WFP will replace CRS as the supplier of FFW commodities to the project.

The CRS director expressed interest in "reopening avenues into food-for-work programming." Reforestation, in particular, he said, was "an interesting possibility to consider." Shortly after the team's debriefing with CRS, the CRS program officer contacted Peace Corps to discuss collaborative possibilities in forestry development.

C. Church World Service (CWS)

The Church World Service/Senegal has one project with a forestry component: The Integrated Rural Development Project in Lougga (PROVOBIL/Lougga). The objectives of the forestry component, according to the director, are to establish nurseries and to fence natural vegetation. The project was initially implemented in 1981 in four villages in the Lougga Region, an area which has recently been declared a 94% disaster area. The project provides food assistance through US private donations. Yet, as the CWS director stated, they "want to link food distribution with development results, not just give free food; food assistance alone does not solve problems."

The project's forestry activities are managed by the chief inspector of the Forestry Department in Lougga. The Forestry Department provides technical assistance and fencing, and CWS provides materials, food, fuel, as well as the salaries for watchmen in charge of food storage. The GOS supplies the trucks and drivers.

Current CWS plans call for increasing the program to include a maximum of fifty communities. Food commodities distributed include those donated (350 MT of sorghum, rice, beans, and milk) and those purchased locally (sorghum and rice). Local paddy rice is purchased, the CWS director explained, because it stores better in the hull; it will not find its way to the city where the preference is for Thai broken rice; and the hulls, once removed, can be used for animal feed.

CWS has not been interested in PL 480 because it considers USAID requirements too stringent and too burdensome. "CWS policy is to preserve its independence," the director explained, "especially in project design and implementation."

D. The GOS/USAID Sand Dune Stabilization Project

Along the coast between Dakar and Saint-Louis lies a 180 kilometer stretch of low-lying, very fertile land called the Niayes. Senegal's vegetable and fruit production has centered in this region, the high water table permitting continuous cropping.

For years, sand dunes separating the Niayes from the sea have been slowly moving inland due to the strong west to north-west winds and to overgrazing of the vegetation which formerly restricted their movements. Encroachment has occurred at the rate of about thirteen meters per year, removing over 450 meters or about 9,600 hectares from production in the past fifty years--10% of the total Niayes area.

Three donor agencies--USAID, UNDP, and CIDA--are assisting the GOS with dune stabilization projects along the Niayes, each covering approximately a third of the 180 kilometer stretch. However, USAID will take over funding for the UNDP segment later this year.

The GOS/USAID Dune Fixation Project is funded with proceeds generated from sales of Title III rice. The Forestry Department is implementing the project in cooperation with local communities.

The Project's principal objective is to stabilize 73 kilometers of dunes just to the north of Dakar, which represents a total of 3,700 hectares. Interventions planned include: afforestation of the dunes with Casuarina equisetifolia; establishment of windbreaks of Eucalyptus camaldulensis on the leeward side of the C. equisetifolia; and the establishment of windbreaks of Eucalyptus camaldulensis, cashew, and fruit trees around villages in the area. The latter two activities provide a second line of defense against the encroaching dunes, and will also provide villagers with a source of wood for fuel and other domestic needs (fruits, nuts, poles).

During the first year of the project, calendar year 1981, 20 kilometers, or about 400 hectares, of coastal dunes were afforested and another 150 hectares of eucalyptus and cashew trees were planted around Lake Tamna (in the Niayes) for a total of 550 hectares. In 1982, an additional 33 kilometers of coastal dunes were afforested.

Total funding for the project was planned at \$6.9 million. However, given the difficulties encountered in selling the Title III rice, the project has received only 39% of the total budgeted, according to one estimate. In spite of the lower operating budget, over 50% of the original targets have thus far been met.

A total of 2,200 hectares have been planted to date, plus another 250 hectares have been replanted.

Nurseries. The project has two permanent nurseries, in Notto and M'Boro, and several satellite nurseries.

One satellite nursery visited was located less than 200 meters from the ocean in a small pocket unaffected by the dunes. It was fenced with cactus and brush, and a 4 meter well had been dug within the enclosure. The water table--good quality fresh water--was 3 meters from the surface. There has been no problem with animals entering the nursery, according to the nurseryman. A guard does keep watch at night.

Seedlings were being grown in plastic bags, set in ten recessed beds of 1400 bags each. Seeds are sown directly into the plastic bags; if more than one seed germinates in a bag, excess seedlings are transplanted to other bags. Seedlings are watered every morning and weeded regularly. Because the soil tends to crust on the surface, forming an impermeable layer, workers periodically break-up the crust with a small sharp stick prior to watering. Beans, tomatoes and squash were also being raised within the nursery enclosure.

Outplanting. Tree seedlings are outplanted after four months, or when they have reached 30 cm in height. The planting season begins in late June, although outplanting has been done as early as March in some of the low lying areas. Approximately 200 seedlings at a time have been transported the short distances to the planting sites, using a 4-wheel drive vehicle.

The seedlings are planted with a 2 meter by 2 meter spacing; once planted, no watering is done. "They get moisture from the fog that comes off the ocean," the project forester explained, "and the water table is very shallow; the roots don't have to go down very deep before they find moist soil." Although some replanting has been done, survival generally ranges between 75 and 90 percent, project officials claim.

Some vegetative ground cover is starting to appear under the seedlings and wild monkeys and hyenas have started to move back into the area.

Casuarina equisetifolia (filao) has proven to be very suitable for dune stabilization: it is tolerant to saline soils; it is not susceptible to wind damage; and it grows rapidly in its early years. Moreover, it produces suitable wood for fuelwood or charcoal.

In addition to Forestry Department regional officers, there are 61 to 110 seasonal laborers, the numbers varying by the workload of any given time. All the seasonal laborers are paid the government set minimum wage in cash.

Although there are guards assigned to patrol and protect the nurseries and plantations, there does appear to be good local support for the project. "People know the benefits of dune fixation," the project forester said, "They have voluntarily moved their animals out to allow the trees to grow." As one farmer explained, "Planting trees is cherished by the Prophet. He gives his blessings to those who plant."

The UNDP Project. As previously mentioned, USAID will be taking over the UNDP project later this year, utilizing Title III revenues to stabilize secondary and tertiary dunes, as well as to develop village woodlots. Approximately \$4.5 million of Title III revenues will be budgeted for 1984-1985. The principal objective of the UNDP project was to stabilize the primary dunes.

The USAID and the UNDP projects have been implemented essentially with the same approach. The one major difference has been the form of payment to casual laborers: The USAID project pays cash, whereas the UNDP project has paid part cash and part WFP food commodities.

The UNDP/GOS project manager, who is also the Forestry Department's national coordinator of WFP food assistance, explained that the WFP commodities were often used to pacify

workers when cash payments were late, as is often the case. "Workers are willing to work for partial food payment because of the drought," he said, "but only if the project directly benefits their community, such as a woodlot, a firebreak, or a road. If they perceive the project to be in the national interest, they insist on a cash-for-work arrangement." He acknowledged that high agricultural output and higher farmer incomes in the Niayes region probably accounts for the less than keen interest in working for food.

The WFP rations have consisted of rice and sorghum, canned meat and oil, equivalent to about 300 CFA (US.75) per day. The WFP assistance will stop when the project is turned over to USAID.

CLOSING DEBRIEFING

At the conclusion of their mission in Senegal, the team held three separate debriefings for USAID, Peace Corps, and Catholic Relief Services. The debriefing formats for each were identical, and included two activities: a presentation of the contributions to the team's mission gained through the numerous interviews and site visits in Senegal; and "food for thought" issues and questions arising in Senegal that would need to be pursued further in other upcoming countries.

A. Observations from Senegal

- ° The effectiveness of projects is contingent on:
 - ongoing role clarification among participating entities; and
 - streamlined project management, particularly with regards to consultation, decision-making and funding mechanisms.
- ° The effectiveness of FFW projects depends on:
 - timely and regular deliveries;
 - appropriateness of rations;
 - established work norms; and
 - unencumbered food distribution and management procedures which are reliant on rural infrastructures.
- ° Implementation of a project supported by Title III counterpart funds risk being hampered by an inappropriate commodity.
- ° Pilot projects should be initiated in areas that climatically have a high possibility for success; climate is an inalterable input.
- ° PCV involvement in community forestry projects is seen as a valuable contribution because:
 - they have excellent communication skills (local language and interpersonal skills);
 - they serve as an effective link between the communities and project management; and
 - they have good basic skills in nursery management and tree planting.

B. Food for Thought Issues

- ° Is FFW rendered less effective when other food aid programs, such as emergency feeding and MCH clinics, are also available to the same community?
- ° Is FFW a needed incentive in communities where reforestation is already seen by community members as an immediate priority?
- ° Would FFW as a programmatic input be an effective incentive in the development of individual/family woodlots?

INTERVIEWS

GOS Officials

1. Amadou N'Diaye, Assistant Director, Forestry Department
2. Cheikh Tiane Savare, Chef d'Inspecteur, Forestry Department, Diourbel
3. N'Diawai-Dieng, Chef d'Inspecteur, Forestry Department, Cayar
4. Cheikh M'Baya, Chef de Secteur, Forestry Department, Diourbel
5. Monsour N'Diage, Chef d'Inspecteur, Forestry Department, Kebemer
6. Boubaker Dia, Forestry Department, Nodo
7. Babou Diouf, Forestry Department, Cayar

USG Officials

8. Sarah Jane Littlefield, Director, USAID
9. Carol Tyson, Deputy Director, USAID
10. John Balis, Agriculture Development Officer, USAID
11. Norm Rifkin, Non-Project Assistance, ADO, USAID
12. David Kingsbury, Non-Project Assistance, Project Manager, USAID
13. Dom Kassekh, Non-Project Assistance, Project Manager, USAID
14. Dabbe Diallo, Energy and Renewable Resources, Project Manager, USAID
15. Mamadou Ba, Energy and Renewable Resources, Assistant Project Manager, USAID
16. Vitos Stagliano, OMVS, USAID
17. Amos and Lorraine Issac, Co-Directors, Peace Corps
18. Christopher Kopp, Associate Peace Corps Director/Forestry and Fisheries

Private Voluntary Organizations

19. Norbert Clement, Director, CRS
20. Bill Hagelman, Program Officer, CRS
21. Lionel Derencourt, Director, CRS
22. Rene Sow, Program Officer, CWS
23. Danielle Benjamin, Director, National Council of American Negro Women
24. Helen Munoz, Consultant to National Council of American Negro Women
25. R.J. Benn, Representative, Africare

Others

26. M. Henri Matthey, Country Representative, World Food Programme
27. Lars Bjorkman, Program Assistant, World Food Programme

28. Nicaise Kponou, Project Officer, World Food Programme
29. Mbaye Babacarm, Program Assistant, United Nations
Development Programme
30. Jacques Bedard, CIDA
31. Ann Maitland, PCV
32. Peg huss, PCV
33. Philip Compt, PCV
34. Tammy Arnold, PCV
35. Mary Jo Radell, PCV
36. Kevin Jacobs, PCV
37. Joe Meyer, PCV
38. Wendy Williams, Journalist
39. N'Deye Anna Djong, Home Economics Extensionist, Didgo
40. Mamadou Bdjiane, Village Chief, Dondol
41. N. Ngaye, Nurseryman, Thiapp-Panathie
42. M. Guygaye, Nurseryman, Wegay
43. Amadou Ka, Farmer, Cayar
44. Hassan Da, Nurseryman, Cayar

ANNEX 3: NIGER

COUNTRY SUMMARY

The PL 480 assessment team visited Niger from March 5-10, 1984. During this period of time, the team interviewed 30 individuals and visited one project site. Information from those interviewed, as well as observations from the site visit, is included within this country report. The following is a listing of this team's conclusions and recommendations drawn from the individual interviews and site visit observations.

Conclusions

- Niger at this time is self-sufficient in food production.
- For the foreseeable future, USAID does not see a role for PL 480 assistance in Niger.
- Although deforestation is occurring at a rapid rate, the PVOs operating in the country believe that the growing awareness of the need for reforestation by the general population will generate sufficient community participation in forestry-related programs.

Recommendations

- PL 480 FFW programs should not be initiated in Niger, or any other country that is not considered chronically food deficient.
- If community participation proves lacking in forestry programs, particularly in nursery establishment and maintenance, cash-for-work ought to be considered.

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COUNTRY ASSESSMENT

A. The Food Situation

Unlike its Sahelian neighbors, Niger is holding its own in terms of food self-sufficiency. Though drought had affected many areas of the country in 1983, good harvests were recorded in parts of the North and in the Niamey area. There was even mention of a double harvest in some places. According to recent reports, rainfall in the west and southwest of the country was abundant in July (1984), while in other areas it has been irregular.

Grain storehouses are full, one senior USAID official confirmed, with some 165,000 MT of grain in stock. "This country produces just about all the grain it needs," he said. "There is plenty of grain in the market, so much so that it is selling for less than the official price--90 CFA/kilo as opposed to 120 CFA/kilo." USAID has been assisting the GON with a price stabilization program.

The CARE director's assessment of the food situation was less optimistic. "Sure there are 165,000 tons of reserved food in the country," he said. "Of that, 47,000 tons are debt-free reserve, and 112,000 tons are up for sale: those 47,000 tons would last a half-hour in a drought."

B. Food Aid

"The food aid story in Niger is neither a long nor a happy one," said the CARE director. CARE has sponsored several forestry FFW projects in the past, including the Majjia Valley Windbreak Project.

Most people agree that the emergency relief programs during the drought years of the mid-1970s were both needed and successful. However, subsequent food aid programs came to be viewed by PVOs, USAID, and Peace Corps Volunteers with a certain amount of skepticism, if not disdain. The primary reason cited was that the food aid was being used in community self-help projects.

In interviews with USAID officials in Niger, inappropriate commodities were cited as a major reason for the Mission's lack of interest in PL 480. "Bringing in PL 480 wheat or rice could be dangerous in a country like Niger," one USAID official explained, "because it could create an import dependency: We do not want to change people's eating habits."

In 1982, USAID imported 15,000 MT of PL 480 red sorghum for emergency feeding: 9,000 MT for monetization and 6,000 MT for free distribution. Most of the 9,000 MT remains unsold; people won't buy it because the taste is too bitter, they say. According to many accounts, much of the red sorghum given away as

emergency feeding rations was fed to livestock. White sorghum is a staple in Niger.

The importation of Title II Section 206 vegetable oil was considered last year but tabled. "Section 206 would take too much of our resources in accounting and management," a senior USAID official explained. "It requires an everyday checking system; it combines all the worst aspects of management."

USAID's relationship with the World Food Programme in Niger normally centers on which US commodities are to be imported, and their use. Last year, however, the mission insisted that WFP purchase local millet for distribution.

C. The Forestry Situation

With an area of 1,267,000 square kilometers, the Republic of Niger is one of the largest African nations. The country is divided into three broad climatic zones: Saharan, Sahelian and Sudanian. The majority of the country receives less than 300 mm of rain per year; only the southern border area receives over 500 mm. It is in this area that most of Niger's 5.6 million inhabitants live, and where most of the country's agricultural crops are produced.

Deforestation is occurring at a rapid rate in Niger, and fuelwood use is cited as the major cause of the problem. Forests within 80 km of Niamey have been denuded to meet the capital's fuelwood requirements of about 20,000 sq. meters per month. The average family in Niamey, it was reported, must spend 8,000 CFA (\$20) per month on fuelwood--more than one third of a laborer's monthly salary.

The majority of forestry projects implemented in recent years have been large fuelwood production schemes using fast growing exotic species. The costs in establishing these plantations have been high, and the results have been mixed. Moreover, critics say, scarce agricultural land is confiscated from small farmers and taken out of food production.

Community woodlots as a reforestation approach have not fared much better. "Community woodlots are a failure in Niger," the CARE director said. "There is little community participation, because people do not believe they will ever profit from the trees. The government, they believe, will claim, cut and sell them." CARE is promoting private woodlots and agroforestry, particularly the use of windbreaks and nitrogen-fixing trees.

The principal GON agency working in forestry development is the Forestry Department, which is located within the Ministry of Hydrology and Environment. Other government agencies and organizations with forestry-related programs include: the National Reforestation Committee; the Ministry of Rural Development; the Ministry of Agriculture, through its fruit tree and garden ser-

vice, and its agroforestry program; and the Rural Engineering Service, which undertakes soil conservation works. International support to the forestry sector is currently being provided by USAID, the World Bank, CARE, Lutheran World Relief, and Church World Service.

D. Forestry Issues and Problems

The major problems within the forestry sector in Niger as described by GON officials and donor agencies include the following:

- an outdated Forest Code;
- the Forestry Department's image;
- insufficient technical personnel; and
- land use pressure.

The Forest Code. The Forestry Department is operating with an outdated Forest Code, one which does not effectively address current realities. One PVO official blamed the Forest Code for the lack of community participation in forestry development. "What is needed," he said, "is an honest Forest Code, one that will prevent the Forestry Department from claiming and taking trees that have been planted by others."

The Forestry Department's Image. Along with its reputation for confiscating community woodlots, the Forestry Department has developed the image of a 'forest police force.' "It is a paramilitary organization," one international forester said. "Its focus is mostly on repression rather than management."

Although some police work will always be a required part of a forester's job, donor organizations are recommending that foresters receive in-service training in extension techniques, and that a major forestry extension program be initiated. However, many foresters, it was pointed out, prefer the policeman's role over the extensionist's role.

Insufficient Technical Personnel. According to most accounts, even if there were qualified professional foresters available to hire, the small operating budget of the Forestry Department would not permit it. "Forestry may be a very high priority politically," one forester said, "but in terms of budget, it is still a low priority." Most forestry development in the country is heavily financed by international donors. There are currently 12 Peace Corps foresters assigned to the Forestry Department.

Land Use Pressure. Niger is 75% desert and 15% semi-arid; less than 10% of its land area is suitable for raising crops. Yet this 10% supports 75% of the population.

The intensive land use competition between agriculture and livestock has taken a heavy toll on the environment over the

years. According to one source, Niger's national herd quadrupled in size between 1930 and 1960, and the goat population tripled in size between 1930 and 1970. One forester summed it up by saying: "One does not need to be an old man in Niger to remember forests where there are now desert wastelands."

PROGRAMS, PROJECTS AND CASE STUDIES

A. The World Food Programme

WFP is contributing food commodities to four programs in Niger:

- mother/child health centers;
- school feeding;
- price stabilization and support to grain reserves; and
- multi-purpose rural development.

Current WFP commitments to these projects total slightly over 12,000 MT per year. The commodities are transported via private trucking from ports in Togo and Benin, and stored in seven warehouses, one in each of the seven departments. The Ministry of Planning coordinates the logistics.

The multi-purpose rural development program includes a reforestation component, which is being implemented by the Forestry Department. This component includes the following activities:

- firebreaks in each of Niger's seven departments;
- green belts around cities in all departments;
- Acacia albida planting, financed by the U.N. Sudano-Saharan Office (UNSO); and
- village woodlots (15 ha each year in two departments), assisted by FAO and UNDP.

Three additional WFP-supported projects have been requested by the Forestry Department, which would include the establishment of reforestation sites in each department; terracing activities in the National Park "W"; and soil conservation works in the Gaya area.

In the green belt project, food rations are the only form of payment to laborers. A total of 7,000 ha have been planted with WFP commodities. All other current projects compensate laborers with both cash payments and WFP food rations. For the three proposed projects, Forestry Department officials said, they are considering compensating laborers wholly with food rations in order to free up funds for other needs, i.e. larger plantations. These officials also noted that they often "reward" villagers with food rations for their assistance on emergency works, such as fire-fighting.

Problems. WFP officials in Niamey cited several problems hindering the above-mentioned projects. Foremost among them:

- projects are all understaffed and lack needed materials and equipment;

- inadequate funding, even though forestry is seen as a national priority; and
- the lengthy project approval process, which can take up to three years, followed by the longer, slower process of trying to get villagers involved.

The WFP Representative also pointed out that food-for-work as a concept is not universally accepted in Niger. "Food-for-work is seen by some Nigeriens," he said, "as having colonial overtones. They say: You feed a donkey but you pay a man." He added: "Many people believe that food-for-work should be implemented only during drought times. There is no grain shortage in Niger at this time. There are food deficiencies in the diets of many people; they just do not have the money to buy food. It's a poverty problem." In justifying WFP food-for-work forestry programs he concluded: "People should recognize the need for forests, but they don't. To plant, people will have to be paid. Why not with food?"

B. CARE

CARE's active presence in Niger for twenty years has centered primarily on forestry development. As one USG official said, "CARE has done as much in forestry as the entire rest of the Nigerien apparatus."

During this time, according to the director, CARE has won many political battles in resisting pressure from the GON Forestry Department to implement projects in high-risk areas where the need is greatest and the people are putting out the loudest appeal for assistance. "We have selected areas for new initiatives in areas where we felt we had a chance for success. Then, once we have success in those pilot regions, we begin to move the model into areas of higher risk."

The thrust of CARE's forestry programming has been in the following areas:

- windbreaks;
- tree planting in markets and schoolyards;
- woodlots for fuelwood and poles; and
- nursery management training.

In the 1970s, CARE entered into a food-assistance arrangement with WFP and the GON, but has since, in the words of the director, "disentangled" itself from a situation that it saw as "a bureaucratic quagmire and tangle of miscommunication." (See Majjia Valley Case Study). CARE does not intend to introduce a FFW component again into its programs, the director said. "In cases of drought or famine or plague," he explained, "emergency feeding is needed; but why should food assistance be linked to productivity, for example, forestry in self-help projects? I would never use food aid with anything dealing with or to encourage community participation. You have just got to separate

the two. There is no need for FFW in forestry in Niger because there is an awareness for reforestation building up very fast. It is on the way. When people go out and talk trees now, they get responses that they would not have gotten five years ago."

Private and Community Woodlots. One of the spin-offs of CARE's larger projects is that some small farmers have begun to start their own woodlots. "Individual woodlots work well," the CARE forester, a RPCV from Mali, said. "They more appropriately address the farmer's needs and preferences; there's more flexibility in species selection, where to plant, number of trees to plant, and for what purpose. But you have to start with motivated people." His experience with individual woodlots is that the seedlings are better tended, and survival rates are higher than with other types of woodlots. There is also plenty of profit incentive: "A farmer can earn up to 150,000 CFA (US \$375) per year from his woodlot by selling poles and fuelwood," he said.

Community woodlots, on the other hand, "are a failure in Niger," the CARE director stated. "Community leaders do not believe their communities will ever profit from the trees. They believe the government will claim them." He, and others, also pointed out that if community woodlots are to supply even a part of the community's fuelwood needs, productive land will need to be forfeited by farmers who, in most cases, cannot afford to do so.

Nursery Training. In 1983, CARE in collaboration with Lutheran World Relief (LWR) developed a one year training program in nursery management that has been very well received. The focus of the program is fruit tree propagation, but other tree species are included as well.

There are two training centers, with six trainees at each. Trainees are selected on the basis of successful farming experience by a team consisting of representatives from LWR, CARE, and GON district officers. The team conducts interviews throughout the target areas. Once selected, a contract is signed between the trainee and the GON Forestry Department and CARE.

Trainees bring their families with them to the course; they are provided with a stipend of 20,785 CFA (US \$52) a month, plus other benefits. Upon "graduation," the trainee returns to his village with the necessary nursery start-up tools and materials, provided by the project.

Case Study - Majjia Valley Windbreak Project

The Majjia Valley Project, which is located in one of the most fertile land areas in Niger, was initiated in 1975, based on a proposal by a PCV and a French forestry technical officer. Since 1975 approximately 325 kilometers of windbreaks have been planted, and 60 more kilometers are planned for this year. It is

estimated that the windbreaks have increased millet yields by 25%.

For about five years, the project used WFP food rations to compensate farmers for their labor in planting and maintaining the windbreaks, and for their land taken out of production. Problems began developing, the director of CARE said, when WFP started by-passing the GON and approaching CARE directly for accountability. There was no contracting and no role clarification. "Nobody took title--nobody owned the food component," the director said.

CARE has spent the last three years getting disentangled from the confusion that came with the food aid, according to the director. "The FFW program was appropriate during the drought," he said, "but no longer. We were paying farmers to help themselves in a self-help project. It just didn't make sense." When CARE announced plans to abandon the food component, workers began proclaiming: No food, no work. To which CARE responded: No work, no trees. "In some villages," the director said, "it took almost two years for the people to get used to the idea of working without food compensation. There were the classic symptoms of trauma," he added. "First, disbelief. Second, denial. Third, accusation. Fourth, confusion over responsibility and blame. Apparently, the Peace Corps Volunteers and local forestry officials took a lot of the heat during this period. In other villages, however, there were no discernible aftereffects when the food was withdrawn."

The role of the Peace Corps Volunteer in the early days of the project was a controversial one. The GON made PCVs responsible for the distribution and the reporting of the WFP commodities. "PCVs were very harrassed," one RPCV/Niger said. "We got caught in the middle of a very political, emotional muddle."

"The project is much stronger now," the CARE director claimed. "People realize that the trees help their crops, and they no longer associate food with planting trees."

C. Lutheran World Relief (LWR)

LWR's Niger program, which began in 1975, is the organization's largest program worldwide. Current project activities include well construction, gardens, tree nurseries and woodlots. As previously mentioned, LWR and CARE collaborate on the nursery management training program.

The LWR director does not anticipate future involvement in FFW activities, a decision primarily based on his own first-hand experience with FFW as a Peace Corps forester in Niger. "The WFP ration at that time--1976--consisted of red sorghum and canned fish," he said. "And both were unacceptable to people. The PCVs were responsible for technical assistance to the projects and for food management, including the storage of commodities in their

homes. Forestry Department officials rarely came around, and school children ended up doing all the tree planting. It was not a good situation."

D. Church World Service (CWS)

CWS, according to its director, has in recent years also stayed an arm's distance from food aid, although it has sponsored FFW projects in the past in Niger.

In 1974-1975, CWS spearheaded a FFW dune stabilization project, which by most accounts was very successful. It was the first such project in the country. The project took a nose dive, however, the director said, when red sorghum became WFP's main commodity. People found the sorghum too bitter-tasting, he said. They fed it to their animals. Consequently, CWS brought in wheat soy blend, which was more accepted. At that time, the FFW wage was half cash, half food commodities. During this same period of time, CWS was also using FFW labor in road construction.

"Food aid must be approached with a good deal of caution in Niger," the director, an eight year veteran of the country, said. "If you have a situation where people are in real need, such as drought, food assistance can be used effectively in development projects. Careful study is very much needed, however, when programming food aid," he said. "It should not be used indiscriminately. Food aid can upset local markets, and it can change people's eating habits."

At present, forestry-related CWS activities include tree planting, living fences (hedges), fruit trees, and cookstoves. CWS is considered the cookstove specialist in Niger. "There should be greater wedding of cookstoves and forestry efforts," the director said. "The publicity that cookstoves are now getting can be used to foster more interest in forestry."

E. The GON/USAID FLUP Project

The Forestry and Land Use Planning (FLUP) Project, which is funded through FY 1986, has three components: the inventory of natural resources; population planning and land use research; and model demonstration sites. In addition to the Nigerien professional staff of four and the administrative staff, there are two USAID consultants and three Peace Corps Volunteers working on the project.

Although the project does not use FFW labor, the director indicated that he was considering the possibility. A FFW component would be relatively easy to incorporate into the soil restoration activities, he said, where workers are now paid cash.

Model Sites. Model sites totaling 5,000 hectares have been designated in two different areas, the primary objectives of which are:

- to reverse environmental degradation;
- to demonstrate soil conservation;
- to provide firewood and other forest products; and
- to create permanent dry season employment.

Five hundred hectares will be added to the model site program each year over a ten year period. It is expected that the program will eventually pay for itself from the proceeds of wood products from the natural forest, such as firewood. Current plans call for a forest fund from the revenue of sales, which will eventually be administered by a community forestry association.

There are two distinct sets of activities that are being carried out at each model site: natural forest management and agroforestry. The natural forest management activities include soil restoration and the harvesting of forest products. Soil restoration is accomplished by constructing contour catchments and by ripping. In some areas contour diggets have been constructed with rocks. In other areas, contour earth mounds 20 to 30 centimeters high with a corresponding trench 30 centimeters deep on the uphill side of the mound have been constructed. Both the rock diggets and the earth mounds will be sown with perennial grasses (Andropodia spp.) Also, seven different acacias and Prosopis africana will be planted between the contours.

Soil restoration by ripping is done with a tractor pulled ripper to a depth of 30-40 cms. In some areas, ripping is done over an entire section, while in others, it is done along contours with unripped strips left in between. Ripping allows water infiltration and storage.

Project harvesting of forest products at the model sites is intended to demonstrate proper methods and timing. Proper timing is essential to ensure regeneration of the trees and shrubs by coppicing.

Finally, the agroforestry activities at each model site are being carried out on parcels of previously cultivated land, which are considered to have the best soil. At one site, fourteen parcels were distributed to the villagers by a lottery system. "The fields will be their own fields as long as they play by the rules," a PCV said. The rules include no cutting of Acacia albida trees, no browsing by animals, and continued maintenance of tree shelter strips--10 meter strips of natural forest separated by a 90 meter wide planting strip.

Most of the vegetation in the 90 meter strip is removed, and farming is done in the traditional manner. Trees are being planted throughout the parcels, acacias in the crop area at 10m X 10 m spacing, and neems and acacias in the natural vegetation windbreaks. The entire agroforestry demonstration area will be fenced using three strands of barbed wire, one of which will be electrified using solar batteries.

The cost of model site activities is estimated at between \$200 and \$300 per hectare. The project views this cost as comparing quite favorably to the \$800 per hectare for government eucalyptus plantations, and the \$1200 to \$1300 per hectare for the World Bank irrigated plantations.

INTERVIEWS

The following individuals in Niger contributed to this report.

GON Officials

1. Abubakar Issa, Assistant Director, Forestry Department
2. Goumandakoye Mounkeila, Forestry Department
3. Abdul Hassan, WFP Liaison Office, Forestry Department
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5. Mamadou Mamane, Project Director, FLUP Project
6. Rene Joli, Assistant Project Director, FLUP Project
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USG Officials

8. Jess Snyder, Acting Mission Director, USAID
9. Abbey Fessenden, Program Development Officer, USAID
10. Lance Jepson, Agricultural Development Officer, USAID
11. Celeste Robertson, FFP, USAID
12. Rudy Vigil, USAID
13. Randy Casey, USAID
14. Pete Reiling, USAID
15. David Burgess, Director, Peace Corps
16. Donald Hart, Natural Resources, Peace Corps
17. Steve Seidman, Agriculture, Peace Corps

PVOs

18. Frank Brechin, Director, CARE
19. Michael Hearn, Staff Forester, CARE
20. Frank Conlon, Director, LWR
21. Amy Fitzpatrick, LWR
22. Ralph Royer, Director, CWS

Others

23. Andre Beguin, Representative, WFP
24. Cors Courtwey, Program Officer, WFP
25. John Hermans, FLUP
26. Cecelia Polanski, PCV, FLUP
27. Greg Minnick, PCV, FLUP
28. Paul Duba, PCV, FLUP
29. Steve Daus, Consultant, FLUP
30. Bill Webber, Consultant, USAID

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ANNEX 4: RWANDA

COUNTRY SUMMARY

The PL 480 assessment team visited Rwanda from April 9-20, 1984. During this period of time, the team interviewed 29 individuals representing 18 different organizations and groups. Information from those interviewed, as well as observations from in-country site visits, is included within this country report. The following is a listing of this team's learnings, conclusions, and recommendations drawn from these individual interviews and site visits.

Learnings

- ° In the Gikongoro Rural Development Project, project management prefers WFP commodities to the dollar equivalency, even with handling and transport costs, because commodities cannot be diverted to other budget line items: WFP commodities assures the project of a labor force, which facilitates multi-year planning and target-setting.
- ° In the Gikongoro Project, a food deficient area where laborers receive part cash and part food rations as wages, a three month delay in the GOR part cash payment did not result in labor shortages or absenteeism: the estimated value of the daily food ration is greater than the minimum wage in Rwanda.
- ° The monetization of FFW rations by laborers is not an issue at the project level; everybody agrees that when food is payment for services rendered, it is the worker's choice as to what is done with it.
- ° In Rwanda, the relationship between USAID and the two PVOs with PL 480 programs is described by all parties as excellent. According to PVO representatives, USAID officials in Rwanda assume more of an advisory role than a controlling one in monitoring PL 480 programs, which serves the PVO's need for autonomy and latitude.
- ° In the GOR/Swiss Project, to increase local participation in forest planning and management, communal wood resources are governed by local committees which operate as public utilities.

Conclusions

- ° Rwanda has been falling short of its required food needs for over twenty years. With a population which is expected to double before the end of the century, combined with serious land availability and soil degradation problems, Rwanda will likely require a steady increase in food assistance in the coming years.

- In 1974, the natural forest area in Rwanda was estimated at 12% of the entire country, twice what it is now. By conservative estimates, wood production is falling short of wood demand by an estimated 1.1 million m³ annually: a major reforestation effort is required to reach a level of sustained yield.
- In Rwanda, community forestry and agroforestry programs geared to small farmers are a more appropriate approach to meeting increasing wood demand, rather than large-scale tree plantations, because of decreasing land availability.
- The Forest Service, which relies heavily on donors to carry out reforestation, is interested in implementing community forestry food-for-work projects but only in food deficient areas. They are also interested in placing well-trained Peace Corps foresters at the field level to promote rural reforestation.
- USAID/Rwanda expressed cautious interest in increased PL 480 support to the forestry sector and an expanded Peace Corps presence.
- The US Ambassador and Deputy Chief of Mission, who also acts as Peace Corps Director in Rwanda, strongly support an increased Peace Corps presence in Rwanda, both in permanent staff positions and volunteer numbers. (There are presently 4 PCVs.)
- ADRA currently sponsors two food-for-work/community forestry projects with three additional projects approved for next year. The lack of material support has been a major constraint to the program. CRS in Rwanda sees as its primary focus the MCH nutrition clinics, although it does not rule out future food-for-work programs.

Recommendations

- A PL 480 forestry pilot project(s) should be implemented in Rwanda, contingent on the following conditions:
 - that USAID/Rwanda is prepared to commit staff time and funding to the initiative;
 - that Peace Corps/Washington is prepared to commit staff to support increased numbers of Volunteers in Rwanda;
 - that the GOR Forest Service is prepared to commit staff and resources to the initiative; and

- that WFP*, ADRA and/or CRS are prepared to sponsor at least the food-for-work component of the pilot project(s).
- ° If these conditions are met the pilot project(s) should be a collaborative initiative among the following entities:
 - USAID;
 - Peace Corps;
 - the GOR Forest Service;
 - WFP;
 - ADRA; and
 - CRS.
- ° If the above entities agree to collaborate on the community forestry initiative, the following issues will need to be addressed:
 - technical site considerations;
 - socio-economic site considerations;
 - organization and management, i.e. role clarification; and
 - scale of pilot sites, including staffing and funding requirements.

* Peace Corps forestry Volunteers would enhance the WFP-sponsored Gikongoro Rural Development Project by promoting community and private woodlot establishment and agroforestry extension. A community forestry initiative could be implemented as a food-for-work supported component of the Gikongoro project.

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COUNTRY ASSESSMENT

With over 192 inhabitants per square kilometer, Rwanda has the distinction of being the most densely populated country in Africa. The population rate, estimated at between 3.5% and 3.9%, is one of the highest worldwide. Now with 5.2 million inhabitants (1984), fully half of which are under 15 years of age, the population is expected to more than double before the end of the century. This population explosion, coupled with a growing scarcity of arable land, soil degradation, low soil productivity, and lack of employment opportunities, will greatly hinder Rwanda's development.

A. The Food Situation

Because of the high population growth rate and the limited amount of arable land available for food production, the country has been falling short of its required food needs in energy and protein for over twenty years. According to FAO estimates, the nutritional status of rural Rwandans declined 16% between 1959 and 1975. Although energy needs are estimated to be about 2,100 calories a day per individual, the FAO and the GOR Ministry of Plan have completed surveys showing that actual availability is only about 1,800 calories per day.

In addition to insufficient food stocks, there is the question of poverty--with a \$200 per capita annual income, which is the world's sixth lowest, many Rwandans are simply unable to purchase food.

Malnutrition is recognized in the country's Five Year Plan as the number one health problem of the country. CRS notes that "certain steps have been taken to combat malnutrition, but the problem of increasing food production and improving its availability to the poorer segments of the population is so great that it will take time to overcome."

B. Food Aid

PL 480 Title II is the only Food for Peace program in Rwanda. The three implementing agencies are Catholic Relief Services (CRS), Adventist Development and Relief Agency (ADRA), and the World Food Programme (WFP). The total number of recipients reached through these three organizations is approximately 170,000 people, with metric tonnages imported from the USA amounting to some 13,000 MT. These projects, according to USG officials, are high on the list of USAID/R priorities, not only because of their developmental importance, but also because they cannot be abruptly terminated without causing serious disruption in the country's nutrition centers and schools.

One of USAID/R's primary objectives is to increase the per capita availability of food, which is why the continuation of the present PL 480 program at the same level is considered essential. The present program funding level is 2.5 million dollars, of a total mission portfolio of \$10 million.

Commodities imported under Title II are cornmeal, nonfat dry milk, rice, edible oil, and bread flour. With the exception of rice, which is grown on an experimental basis, none of these commodities is produced or processed in Rwanda. Primary non-exporting food crops in Rwanda are beans, sorghum, yams, maize, and banana; hence it is unlikely that PL 480 stocks would interfere with prices or sales of locally produced food, according to AID officials. Several years ago, these officials said, a Rwandan businessman was inadvertently put out of business by PL 480 Section 206 vegetable oil. Since then, careful attention is being paid to levels of PL 480 commodities brought into Rwanda. (One Swiss expatriate, nevertheless, claimed that Rwanda "is flooded with American vegetable oil.")

The USAID/R does not have a FFP officer; two staff members, however, do have administrative responsibilities for the two PVO programs, and a FFP officer from REDSO/Nairobi visits Rwanda regularly.

C. The Forestry Situation

Rwanda's forest resources are estimated at 170,000 hectares, approximately 6% of the country's total land area. Of this, roadside plantings, woodlots, and government plantations comprise well over 48,000 hectares (the official figure in 1980). Although no recent official figures are available, the director of the GOR Forest Service puts the current rate of reforestation at 10,000 hectares per year. Eucalyptus species make up the majority of these plantings, with E. grandis, E. saligna, E. maidenii, E. tereticornis, and E. camaldulensis being the predominant species. Some Grevillea robusta, Cupressus lusitanica, and Pinus patula have also been planted on a smaller scale.

The Forest Service, under the Ministry of Agriculture, has been the agency responsible for overseeing all forestry-related activities in Rwanda. Its primary objectives, according to GOR officials, are: to respond to wood deficits by reforesting marginal lands; to train technical forestry staff; and to educate the general population to comply with the Forest Code. In February 1984, the Ministry of Agriculture was redesigned as the Ministry of Agriculture, Livestock, and Forestry, and was restructured to have a sub-secretary for each of the three divisions. Under the forestry sub-secretary, there will be a new entity--the Forestry Direction--which is not yet functioning, but which will eventually be responsible for determining forestry policy and coordinating forestry activities. The Forest Service will be under the Forest Direction and will continue to be responsible for implementing forestry activities.

According to the director, the main problem encountered by the Forest Service in implementing forestry activities is the shortage of personnel: trained forestry technicians; extensionists to promote agroforestry and reforestation; and staff to control the indiscriminate cutting of trees within the national forests. "Peace Corps forestry Volunteers would be good to have at the field level," the director said, "as long as they were well trained in nursery and woodlot management."

Most forestry activities in the country are being carried out in cooperation with foreign donors. There are currently five such projects:

- the WFP/UNDP/FAO/GOR Gikongoro Rural Development Project;
- the World Bank/GOR Reforestation Project;
- the GTZ (German)/GOR Agro-Pastoral Rural Development Project;
- the Swiss/GOR Pilot Forestry Project (PPF); and
- the USAID/GOR Community Afforestation Project.

Overall, there appears to be little program coordination among these projects. One project official went so far as to say, "The projects are really autonomous; each has its own prefecture. If anything, there may be competition between the different groups." The chief forester of another project--having stressed the importance of forestry extension--was unfamiliar with a forestry extension training manual in the Rwandan language developed by another nearby project. With the creation of the Forestry Direction under the Ministry of Agriculture, Livestock, and Forestry, it is expected that cooperation and coordination among projects will improve.

The GOR has classified forests according to size:

- o National Forests--50 hectares or more.
- o Communal Forests--20-50 hectares.
- o Individual Forests--under 20 hectares.

The director of the Forest Service stated that although all three types of forests are needed, "the Service will actively promote afforestation at the individual and communal levels." To provide seedlings to these activities, as well as to the five donor-assisted projects, the Forest Service has established a total of 1,400 forest nurseries, one in each sector of the country. (The sector is the third government administrative division after prefecture and commune. Sectors are further divided into 'collines' or hills.)

A National Forestry Fund has been proposed as part of the new Forest Code (which has been written and is expected to be enacted as law later this year). This fund--to be made up of monies derived from the sale of forest products and grants from donor organizations--would be used for financing forestry projects.

The Swiss PPF project has already established such a fund for the Kibuye Prefecture.

D. Forestry Issues and Problems

As previously mentioned, the most pressing problem confronting Rwanda at this time is its high population density and growth rate. This overpopulation and the resulting impact on land availability, soil erosion and wood demand is a direct challenge to forestry activities.

Land Availability. Just as the agricultural sector in recent years has watched the size of the average farm dwindle from 1.5 hectares to less than one hectare, the forestry sector has witnessed the shrinking availability of land for reforestation. "If you are going to do anything in reforestation in Rwanda," said the director of the World Bank project, "you had better do it now. If you wait, there isn't going to be any more land left."

Most of the food production in Rwanda, which is known as 'the land of a thousand hills,' occurs on steeply-sloped hillsides, since most of the narrow valley bottoms separating the hills have poor drainage. One GOR official pointed out that food crops are now being cultivated on slopes of 80 to 100%, slopes which would best be left for reforestation activities. "The only land left for us to reforest is land that won't produce agricultural crops," he said.

Encroachment by small farmers has taken a heavy toll on the natural forest reserves as well, particularly in the western part of the country. In 1974, the natural forest area was estimated at 12% of the entire country, twice what it is now.

Soil Erosion. Although there are some farms that are terraced or that have contoured trenches planted with grass, and occasionally with trees, most hillside farming is done without soil conservation measures: all of the observed slope cultivation was done up and down the slopes. This farming practice, coupled with the 1,000 to 1,600 mm of rain per year that usually comes in short, heavy downpours, has caused considerable soil erosion throughout the country.

Sheet erosion was the most common form observed, although gully erosion was also noted. At one site, there was a 5-inch loss of topsoil, as evidenced by small patches of grass growing on 5-inch pedestals of soil surrounded by barren subsoil. Hillside plantings of eucalyptus were often cited as contributing to erosion problems because, in many instances, eucalyptus inhibits growth of vegetative ground cover.

Most of the reforestation occurring in Rwanda is with eucalyptus. People have come to consider it the preferred species,

not only because it is good for fuelwood, building poles, and timbers, but also because it has shown good survival and growth ($10\text{m}^3/\text{year}$), and it can be coppiced up to four times. Yet as one project forester pointed out, "Rwanda is developing a monoculture, which could potentially lead to some big problems, like disease and insect attack."

Wood Demand. The major uses of wood in Rwanda are fuel (both for cooking and heating), building construction, and furniture making. The per capita fuelwood consumption is estimated at 0.653 m^3 to 1.0 m^3 per year, for a total national consumption of 3.5 million m^3 to 5.0 million m^3 per year. In addition, building construction and furniture making constitute an estimated demand of 0.4 million m^3 per year, bringing Rwanda's total estimated wood demand to between 3.9 and $5.4\text{ million m}^3/\text{year}$. Wood production, however, estimated at $1.4\text{ million m}^3/\text{year}$ from plantations and natural forests, plus an additional $1.4\text{ million m}^3/\text{year}$ from agricultural lands and roadside plantations, totals only $2.8\text{ million m}^3/\text{year}$. Taking the most conservative annual wood demand figure of $3.9\text{ million m}^3/\text{year}$, there is still a 1.1 million m^3 annual wood deficit. The estimated 60 million m^3 of growing stock is reduced yearly by the amount of wood necessary to cover this deficit, a fact that will make it progressively more difficult to reach a level of sustained yield unless a major reforestation effort is undertaken.

PROGRAMS, PROJECTS AND CASE STUDIES

A. The World Food Programme

At this time (April 1984), there are three WFP-assisted projects in Rwanda:

- Project RWA 2369, The Gikongoro Rural Development Project.
- Project RWA 2465, Improvement and Development of Roads and Mining Prospections.
- Project RWA 1356, Emergency Feeding for Ugandan Refugees and Rwandan Returnees.

Total annual WFP food commitment to Rwanda amounts to 1281 metric tons of US rice, 578 MT of locally purchased pulses, 152 MT of dried/canned fish, and 153 MT of vegetable oil. The Gikongoro Rural Development Project is the largest recipient of the three projects. Since 1980, it has received 2,397 MT of food commodities for a total USD equivalency of \$2,383,600.

Case Study - The Gikongoro Rural Development Project

The GOR cites the Prefecture of Gikongoro as the least productive agriculturally and the most deficient nutritionally in all of Rwanda. Living conditions and farm incomes are below the national average, and the area contributes very little to the GNP of the country. Officials fear that unless appropriate measures are taken to allow for a more efficient use of land resources, the prefectures's high population growth rate will lead to rapid and irreversible site degradation.

The Gikongoro Rural Development Project was initiated in 1977 by the Ministry of Agriculture, and has received UNDP/FAO financial assistance since its inception. It is funded through 1986, at which time UNDP/FAO will conduct an evaluation to determine the need for additional funding.

The project's principal objective is to intensify agricultural production throughout the prefecture. Main project activities undertaken to date have included erosion control, afforestation, construction of access roads and bridges, and agricultural extension and farmer training.

In 1983, the project sponsored a pilot colline in two communes of the prefecture to better concentrate its extension efforts. The pilot collines serve as demonstration centers for neighboring collines and emphasize crop and livestock diversification and appropriate technology at the family level. A third pilot colline will be initiated this year; and by 1986, there will be one pilot colline in each of the ten communes served by the project. (One progressive farmstead on a pilot

colline visited by the team had a water catchment cistern, a compost pile, three beehives, a mudstove--not too popular because it doesn't heat the room as much as an open fire--fruit trees, coffee trees, anti-erosion ditches planted with soil stabilizing grasses, fourteen different crops, a pig, a bull, goats and Rhode Island Red chickens--all on little less than one hectare of land.)

WFP-Assisted Project Components

WFP assistance was requested by the project early on, as the limited financial resources of the MOA would not allow the recruitment of the required labor force, nor any strengthening of extension services. It is the only agricultural project in the country sponsored by the GOR that uses food aid. GOR officials approve of the WFP assistance to the project because, they say, it is in a food deficient area. According to these officials, no replication of this model is envisioned elsewhere in the country at this time.

The project director equates WFP food assistance with financial assistance: food commodities provide partial wages for work rendered. When asked if the project would rather have the dollar equivalent of the commodity value, plus handling and transport costs (in Rwanda, often three times the original value of the commodity), he replied: "No. WFP commodities assure the project of a labor force. Money, on the other hand, most probably would end up in other budget line items. For us, WFP assistance facilitates multi-year planning and target setting."

WFP is currently supporting several project activities, including afforestation, nursery operations, erosion control, agricultural extension, road and bridge construction, and land rehabilitation.

Afforestation. GOR and FAO officials consider this component to be the most important and successful of the project. An average of 75 hectares of afforestation is taking place per year on degraded and abandoned land in each of the ten communes in the Gikongoro Prefecture receiving WFP assistance, giving a total of 750 hectares per year and 2,250 hectares for the duration of the project. Once land is afforested, it becomes state-controlled.

According to the project director, afforestation is one of the easiest sectors to incorporate food-for-work because activities are straightforward and easily distinguishable. For each hectare of plantation established, the project estimates that an average of 350 man-days are required, for seedling production, soil preparation and planting, and replacement of dead seedlings. The plantations average 1,200 to 1,300 trees per hectare, depending on which species are used (Eucalyptus spp., Grevillea spp., Podocarpus spp.) and on-site conditions.

There is one plantation crew for each commune; the crews vary from 50-100 workers, with the numbers fluctuating according to

the seasons. There are several planting teams in a crew, with each team usually composed of three workers. Supporting each team are five or more workers who head carry the trees from the nursery to the plantation sites. A "production line" system is used by planting teams: the first worker digs the holes, the next distributes the seedlings and the third plants the seedlings. Survival rates have been good, according to the project's chief forester, with one area even reaching an estimate 90% survival.

After the plantations are established, FFW laborers will spend 20 man-days per hectare maintaining them for a period of two years. An average of 1500 hectares of forest is to be maintained each year for the duration of the project.

Lastly, the project director pointed out what he considered to be a double benefit of the afforestation component: "We pay the workers to plant trees on national lands, but at the same time, they learn the techniques of proper tree care for their own use. We encourage them to go home and plant fixating grasses and trees to address erosion problems on their own land." The workers are also being encouraged to plan fruit trees and trees for firewood, carpentry and construction purposes. The seedlings are provided at no charge. This afforestation is expected to produce 390 hectares, mostly in the form of private woodlots.

Nursery operations. A total of 120 project nurseries are being maintained with WFP food assistance. The nurseries average 0.25 hectares in size, and produce a total of 8 million seedlings. Two FFW workers maintain each nursery during 150 days per year. It is planned that nursery operations will eventually be carried out mainly by women.

Erosion control. This component includes two WFP-assisted activities: staking contour lines on private lands; and digging anti-erosion ditches on state lands, which are then planted with appropriate vegetation (i.e., Sartavia) to stabilize the banks of the ditch. The protection of 5,538 hectares is targeted, primarily on private farm land.

Only workers engaged in the demarkation of contour lines and in digging anti-erosion ditches on state land receive food as part payment of their wages. Work norms for staked contour lines are two kilometers per day for a team of six workers. The pegging of 7,200 kilometers has been proposed.

On private land, anti-erosion ditches are being dug and seedlings are being planted along the pegged contour lines by the farmer without food assistance; however, seedlings are supplied to them free of charge. The ditches are spaced according to the steepness of the slope--generally four to six meters apart. Seedlings are planted along the ditches every two meters.

There has been resistance to the anti-erosion ditches, according to the project staff, because farmers see them as taking scarce land out of production.

Agricultural extension and farmer training. All project extension agents receive food commodities as payment for 50% of their wage. In addition, two experienced farmers from each commune will be provided with three months of practical training on communal demonstration farms. Both male and female farmers will be included, and they will receive food rations over the course of the three months. This program is scheduled to begin later this year.

Infrastructural works. Construction and repair of access roads and bridges is estimated to require 60,000 man-days over the life of the project. Road teams usually consist of six workers.

Rehabilitation and development of cultivated land. A number of hills in the project area are covered with eragrostis grass which makes them unsuitable for agriculture. The rehabilitation of some 315 hectares of land has been proposed, and will be carried out by 20 worker teams. It is estimated that each team will be able to rehabilitate one tenth of a hectare per day.

The Food Commodities

The original WFP rations consisted of locally purchased beans and sorghum, and imported oil and dried fish. The sorghum has now been replaced with imported US rice. Ration size is fixed by WFP and the GOR, and is based on the FAO nutritional survey of the project area.

The workers receive five rations per day of work--considered one family ration. The trainee farmers, however, will receive only one ration per day, during the training, since their families will not be with them. It is important to distinguish that the workers' family ration is considered part payment of their wages (they also receive 50 Rwandan francs--\$.50 approximately--for one day of work), whereas the trainee-farmers' food ration is seen as incentive for their participation in the training session.

Laborers are paid only for the days that they work; a daily log is kept by the MOA crew supervisor. Credit for the day's work must also be approved by the supervisor on the basis of an agreed upon daily "piecework" rate that is at least what the project sets as minimum production levels. Examples given for the nursery work were:

<u>Task</u>	<u>Piecework</u>
filling bags	300 bags/day
weeding	200-250 bags/day
watering	10,000 seedlings/day

In most cases, however, minimum production levels must be site specific. Seedling transport (head carried) depends on the

distance to the planting site; the number of meters of anti-erosion ditches depends on the compactness of the soil, and so on. Piecework, according to the project forester, "can be easily checked, and there is a better chance of getting good results. Forestry is highly visible." He added, "If the minimums are not met, the workers are not entitled to food."

WFP commodities shipped from overseas are discharged at the Kenyan port of Mombasa, and forwarded by truck to Kigali via Uganda. Once the commodities clear the Rwandan customs, they are transported to the project's three well-constructed warehouses at Gikongoro, Munini and Kaduha, each with a capacity of 500 MT. WFP pays for fifty percent of the transport costs from Kigali to each of the warehouses, and the project pays the remaining fifty percent. According to the project's food manager, the warehouses usually contain several months' advance stock at any given time, with the exception of the beans and sorghum which are bought locally from nearby regions, such as Nyabisindu. They are stocked more or less on a monthly consignment.

Distribution to the workers is done at monthly intervals; the trainee-farmers, however, will receive food daily. At the time of this report, the GOR part cash-payment to the workers was three months behind schedule. The WFP Representative in Kigali noted that the cash payment is sometimes four or five months late. According to project staff, the delay in cash payments has not resulted in labor shortages or absenteeism, because the workers are quite keen to receive food rations: the estimated value of the daily family food basket is 115 Rw.Fr. (US \$1.10), which is greater than the minimum wage in Rwanda of 100 Rw.Fr./day. Noted the project's forester: "Our project gets more people who want to work than a similar project down the road. The difference is that we pay half the salary in food, which is what the people here prefer."

The project workers are rotated every three months, in order that a greater percentage of the 400,000 people in the project area can benefit, both from the salary and the technical experience. Everybody in the commune interested in working has a chance to benefit.

Issues: Monetization of Food Rations

At the inception of the project in 1977, casual labor was remunerated solely with food rations. This situation changed in 1979 to half food, half money when it was realized that workers were monetizing parts of their food ration for other family needs.

Presently, according to the project's food manager, "some workers may be selling up to a third of their food basket, but the majority keep all of it, because it is really needed. The dried salted fish was monetized by nearly everybody for a long time, because they were unfamiliar with it," he added. "It was

not well accepted as a commodity. We had to give demonstrations on how to prepare it. They accept it now, and in fact even the soaking water is saved for soups and stews."

The project director noted that "WFP official policy is that monetization of food rations should be discouraged; but the reality in the field is such that food is payment for services rendered, and it is the worker's choice as to what is done with it." One warehouseman added, "It is their salary, after all."

The WFP Representative in Kigali agreed: "In my personal point of view, it is not wrong for workers to sell or barter part of their rations at the end of the month. We know that WFP/ Rome and USAID/Washington don't like it, but it's the reality."

B. Catholic Relief Services

Catholic Relief Services (CRS) has been operating in Rwanda since 1963. Its programs are countrywide, including all ten prefectures. At present, its supervisory staff consists of three Americans and thirteen Rwandans.

Current FY84 CRS programs and projected numbers of beneficiaries are as follows:

<u>Program</u>	<u>Recipients</u>
Mother/Child Health:	86,000
School Feeding:	8,000
Other Child Feeding:	14,000
General Relief:	<u>5,000</u>
Total:	113,000

CRS has not had a Title II FFW program in Rwanda, but does not rule out the possibility of one in the future. According to the director, their primary focus over the years has been the MCH nutrition clinics and the associated development activities (ADA), while FFW projects are already being carried out by WFP and ADRA. (CRS is providing MCH commodities to ADRA-operated nutrition clinics.)

Considering the overall situation in Rwanda--the steadily increasing population, coupled with the difficulties of increasing agricultural production in a limited land area--CRS does not foresee a phasing out of the Title II food programs in the near future. In fact, because of the above factors, CRS believes that Rwanda deserves special consideration in the granting of food aid.

CRS expects to increase the number of its beneficiaries by 20,000 over the next two years, mainly in the MCH program.

Logistics. CRS personnel have complete latitude in controlling the distribution of PL 480 Title II commodities. The

normal distribution to all recipient categories listed above is made in three-month allotments. In areas made inaccessible due to annual rains, it often becomes necessary to provide six months' worth of commodities at one time. Distribution is made on the basis of monthly status reports submitted by the centers, referencing, among other things, the number of beneficiaires and the stock on hand of each commodity.

The GOR has been unable to meet the costs of warehousing, handling, and inland transport from Kigali to the different recipient centers, according to the CRS director. However, the recipient centers themselves have agreed to bear all these internal transport expenses for commodities intended for them. (Of the 75 francs contributed monthly by mothers in the MCH program, 45 francs remain with the nutrition center to help pay these expenses and other program costs.)

The proposed FY85 Title II commodities (consisting of plain cornmeal, nonfat dried milk, edible oil, and bread flour) are seen by CRS as providing needed nutritional and economic assistance to families, schools, and other institutions. None of these commodities are produced or processed in Rwanda, and, given the growing discrepancy between food needs and food availability in Rwanda, CRS does not believe that they will represent a disincentive to local production.

The MCH/ADA Program. The Mother/Child Health and Associated Development Activities Program makes available food supplies and other forms of aid to nutrition clinics to assist the most vulnerable families improve their nutritional food intake. In return for the economic aid and within the limits of their ability, these households commit themselves to undertaking an income-generating activity or to volunteering labor to the public sector.

The MCH/ADA program is assisting 93 nutrition centers which are operated with a mixture of private (mostly churches) and public support. Even though the program operates in over two-thirds of the nutrition centers throughout the country, it is nonetheless, as CRS points out, reaching only 6% of the population.

Issues

Dependency: According to CRS/Rwanda, the GOR is very wary of food aid, because of the dependency it could create at both the national and local level.

Six years ago, the director said, FFP/Washington increased the number of rations given to families assisted by the MCH programs to five rations (two parents and an average of three children) per month. Yet only this year has the GOR reluctantly agreed to pilot an increase from one ration per family to three in ten nutrition centers where cases of malnutrition have been on the rise.

Another case in point was the GOR decision to cease all food aid assistance to primary schools following AID/Washington's 1982 decision to phase out secondary school feeding programs worldwide. Because CRS supports over 80% of all secondary schools, which board students in Rwanda, the Washington decision caused much concern. CRS was granted a one-year moratorium on the program's phase-out, pending an in-depth study of the potential impact of ending it. Nevertheless, it has reduced both the recipient level and the ration size of its school feeding program.

If the secondary school feeding program is phased out and not replaced with alternative funding, tuition will increase from the present 1,000 francs per student (US \$10) to 10,800 francs per student (US \$108), making secondary education possible only for the country's elite. Since primary schools in Rwanda do not board students, the GOR viewed the primary school feeding program as non-essential assistance.

Monetization: CRS philosophy, according to the CRS director in Rwanda, views food assistance as economic assistance. "It attacks the principal cause of malnutrition--poverty," he said. Although CRS/Rwanda does not encourage monetization of Title II food rations by recipients, it is aware that mothers do sometimes sell or barter part of their monthly ration. "From the mothers' point of view," the director said, "it is good home economics to sell part of their corn meal ration for local beans, and have money for other essential family needs." He added that nutrition center staff do occasionally intercede, for example, when there is evidence that the father is selling rations to buy beer.

CRS and USAID: Even though CRS and USAID have a very good relationship in Rwanda, the CRS director noted, the need for control on the part of USAID and the desire for independence on the part of the voluntary agency can result in an antagonistic relationship, as it has in some countries. He added that it is not a question of cutting back on the controls, particularly with regards to PL 480, because tight controls are necessary to curb abuse. "The administrative and monitoring requirements in food aid programs do make them expensive," he said, "but the program benefits are worth it."

When asked how the dilemma of controls versus independence might be resolved, the director said that a preferable situation for the voluntary agency with regards to PL 480 would be similar to FFP/Washington's relationship with WFP/Rome: CRS/field should be directly accountable to CRS/New York, which in turn would be accountable to FFP/Washington. "With CRS/New York coordinating PL 480 directly with the field," he added, "more effective programming could occur."

C. Adventist Development and Relief Agency

ADRA has been operating in Rwanda since 1979. At that time, it received a USAID Outreach Grant of \$897,137 to initiate a PL

480 Title II program beginning in FY80. This grant is due to expire in July, 1984.

The organization's initial Title II program, primary school feeding, was suspended in 1982 by the GOR, because it was considered to be non-essential assistance. Since 1982, ADRA has focused almost entirely on food-for-work projects. Projected FY85 recipient levels are as follows:

<u>PROGRAM</u>	<u>METRIC TONS</u>	<u>RECIPIENTS</u>
Food-for-Work	2,862	22,500
General Relief	109	1,600
Totals:	<u>2,971</u>	<u>24,100</u>

ADRA has found FFW projects to be very successful in food deficient areas of Rwanda. FFW projects have included road construction (over 100 km in 1983), brick-making, construction of community centers and classrooms, and the employment of 226 adult education instructors on a FFW basis. In addition, ADRA has recently introduced reforestation as a FFW activity. Over 300 FFW project proposals now being submitted to them yearly.

There are currently two ADRA sponsored reforestation projects, both in the Kibuye Prefecture, one in Gisovu and one in Gitesi (45 hectares and 15 hectares respectively). Three more reforestation projects have been approved for next year, and another two are under consideration.

The acting director of ADRA/Rwanda emphasized that it is the commune that initiates the project. "The FFW reforestation projects came about because the communes--influenced by local MOA technicians-- recognized reforestation as a need," he said, "and not because ADRA has been advocating reforestation." Once a need has been identified, the burghomaster (mayor) submits a proposal to ADRA for approval. If it is approved, it is the burghomaster who interviews and selects workers for the project, and in the case of reforestation, selects the actual site for the project, with the assistance of the local MOA technician. All FFW reforestation is done on communal lands.

Cypress and eucalyptus are the most commonly used species in the FFW projects. The seedlings come from the sector nurseries, which are supervised by the MOA technician in each commune and maintained by "Umuganda" volunteers. (The movement of "Umuganda" in Rwanda, or "community work for development," is considered the cornerstone of Rwanda's official political and economic doctrine. Everybody aged over 16 must participate: townspeople normally spend their Saturday afternoons doing the "Umuganda," while rural people have more varied time schedules, to allow for the requirements of farm work. Community projects usually include village water supply, school construction and various anti-erosion operations.) The actual planting of the seedlings at the project site is the only time that workers from the commune are hired and paid with FFW rations. The burghomaster controls the lists of

who is working and who receives food, although the actual distribution is handled by ADRA end-use supervisors.

Currently, 45 kilos of rice per worker are given after twenty days of work. (Oil and dried milk are to be added to the ration later this year.) The commodities are transported from the ADRA warehouse to the FFW sites by trucks, owned or rented by the commune. After the planting is completed, "Umuganda" volunteers maintain the woodlot with no FFW rations, and a guard, hired by the commune, keeps watch over it.

A major problem with the FFW reforestation projects, according to the ADRA acting director, is the lack of tools, especially picks and machetes. Technical assistance has not been a problem thus far, because the MOA technicians based in the two sectors have been quite effective, he said.

Issues

Monetization: "We do not encourage people to sell their rations," the acting director explained, "because it is against USAID official policy. But then again, once the workers have their commodities, they are theirs."

ADRA and USAID: "Our relationship with USAID/Rwanda is good," the acting director said. "They are very helpful here, although it is not always like that in other countries. When you are newcomers at this game, as we are with PL 480 in Rwanda, it is reassuring to have AID right there as an advisor."

The Treasurer of ADRA, a Rwandan, noted that he spends 40-50% of his time complying with PL 480 required paperwork. Nonetheless, he said, "If there were not these controls, there'd be more losses."

D. GOR/Swiss Forestry Pilot Project (PPF)

The Forestry Pilot Project, under the direction of the Forest Service, is financed for the most part by the Swiss Technical Cooperation. It began its activities in the Kibuye Prefecture in 1967, and now also includes the Cyangugu Prefecture. The project employs about 150 permanent workers, and between 200 and 500 casual laborers depending on the season. (There are two planting seasons in Rwanda.) The project is considered by many, including the director of the Forest Service, as being very successful in its approach, particularly its integration of forestry-related activities at the local level. The design for USAID's Community Afforestation Project (see below) is based in part on the Forestry Pilot Project model. Food aid is not used in the project.

The three main components of the project are training and extension, sector woodlots/rural reforestation, and green belt reforestation.

Training and Extension. A National Forestry Training School has been established by the project in Kibuye. Young trainees, usually primary school graduates with little or no proficiency in French, are enrolled in the five- to six-year course. The school will eventually graduate twenty technicians per year; the first group is now in their third year of study. Courses are developed at the Swiss Training Development Office in Kigali, tested at the school, and then sent back to the capital with feedback for modification.

To create an awareness among the population of the necessity for rural reforestation, these newly trained agricultural/forestry extension agents will conduct a widespread "sensibilization" campaign that will cover:

- efficient use of fuelwood;
- tree planting techniques;
- appropriate tree species; and
- site identification for reforestation.

Sector Woodlots/Rural Reforestation. Some 150 sector nurseries in the project area are currently producing 5 million seedlings a year. In addition to fulfilling project needs, the seedlings are also given to schools, churches, and private citizens as well as to communities for "Umuganda" activities. Woodlot establishment is the primary use for the seedlings, although agroforestry activities such as perimeter planting are also being encouraged by MOA extensionists. Seeds for nursery needs are obtained from the Rwandan Research Institute (ISAR) in Butare. Species used include Pinus patula; Cupressus lusitanica; Acacia mearnsii; Acacia melanoxylon; Eucalyptus camaldulensis; E. tereticornis; and E. maideni.

The community planting projects are "governed" by local committees at the sector level composed of:

- a GOR forester;
- the sector agronomist;
- a veterinarian;
- PPF staff; and
- the Burghomaster.

These committees, which operate as public utilities, oversee all woodlots and forests on communal land. They not only decide when, where and what kind of work will be done in the woodlots, they also decide who will harvest, and at what cost. For the most part, the woodlots are maintained with "Umuganda" volunteers.

The area of perimeter reforestation during 1982 and 1983 was 1,364 hectares--some 350 hectares more than what was targeted for the 1982-1983 phase of the project. Nine communes in the prefecture are currently planting and maintaining thirty perimeters.

Problems with the sector woodlot component identified by project staff include the following:

- lack of diversity of tree species (monoculture), and the accompanying potential risk of widespread insect and/or disease attacks;
- little understanding among farmers of the benefits of nitrogen-fixing species;
- GOR preference for planting large blocks instead of small areas;
- fungus disease in pines and acacias;
- debarking of cypress by rats;
- lack of good planning, design, and coordination of activities at the top;
- current two-year budgeting (too short for long-term planning);
- shortage of qualified forestry personnel; and
- image of Rwandan foresters as "policing agents".

Other activities related to the sector woodlot/rural reforestation component that are being carried out by the Swiss project are: forest mapping, forest inventory, forest management, and the writing of the new forest code.

Green Belt Reforestation. The planting of a protective "green belt" around the natural forest of Nyurgwe, primarily to prevent further encroachment from adjacent farmers, remains one of the project's main thrusts. Six project nurseries provide plants for the green belt component; production in 1983 was almost one million seedlings.

Related project activities include:

- maintenance of some six kilometers of newly created forestry access roads;
- charcoal production;
- furniture-making by 15 project carpenters;
- animal traction for transport of road materials, forage, firewood, and fertilizer; and
- the protection of wild animals, elephants in particular, within the forest.

The project is collaborating with other donors in establishing guidelines for the uses of the forest's 100,000 hectares. Other donors involved in the protective band around the forest include the Canadians, Belgians, IFAD, the World Bank, and the EEC.

In 1982, a project management committee--composed of local administrative authorities from the two prefectures, and representatives from the Ministry of Agriculture and the Swiss Technical Cooperation--was formed to coordinate the project's activities with those of other rural development projects in the area, not only to strengthen the impact on the local beneficiaries, but also to increase local participation in project

planning and management. The committee also cooperates with the ISAR in Butare, as well as with the Swiss Training Development Office in Kigali. The current 1983-1985 phase aims at integrating the various project activities into the government forestry infrastructure. The project will be evaluated in 1985.

E. GOR/German Agro-Pastoral Project

The Agro-Pastoral Project at Nyabisindu, which like the Swiss project does not use food aid, began in 1969 as a joint effort by the GOR and the Federal Republic of Germany to improve financial and management practices at the country's only dairy plant. Shortly thereafter, in 1970, veterinary services and improved forage plants were introduced, followed by the establishment of a three-hectare research center on severely degraded and abandoned land. With the research center, the project moved more toward an integrated approach to agroforestry and livestock production. More than twenty communes were being reached by 1980 - 1981 (or about one-sixth of Rwanda) in three different prefectures - Gikongoro, Gitarama, and Butare. In 1981, however, the number of communes was reduced to seven to better concentrate on those areas that had proven particularly receptive to new farming methods.

The project is scheduled to end in 1987 (after a total of 18 years), but according to project staff, there may be a two to three year phase-out period. The specific components of the project are:

- to improve farming and land use systems by integrating agriculture, animal husbandry, and forestry;
- to align research with extension services;
- to develop ecologically appropriate farming methods that require minimum inputs to stabilize and increase soil productivity;
- to install veterinary infrastructures for both curative and preventative services; and
- to improve processing and marketing of farm products.

Project Components

Project activities fall into five categories: seed multiplication; tree planting; animal production; agricultural extension services; and food processing and marketing.

Seed multiplication and tree planting activities have included the following:

- the establishment of 170 nurseries in 23 communes;
- the annual distribution to farmers of 15 million tree seedlings for erosion control and soil conservation measures, fuelwood supply, and fodder (70% of the trees are forest species, while the remaining 30% are fruit species);

- the reforestation of 1,500 hectares annually;
- over 400 kilometers of roadside tree planting; and
- seed multiplication of improved plant varieties for forage, food crops, and cash crops at 116 centers.

The project's agricultural extension service is currently in its first year. Farmer training is done in each of 195 "cells" in 74 sectors of the seven communes. It is planned that five to seven technical packages will be developed and disseminated per year. One to two months are spent on each topic. Through group extension facilitated by "Umuganda," the project's 90 extension agents reach a target group of 50,000 families. The German director of the extension service claims that these agents are "the best extension agents in all of Rwanda, even though they are at a technical level which is only about 50% effective. Much more training--including intensive training workshops--is needed," he said. Fifteen of these agents are on the project's payroll, while the others are paid by the government or by the commune.

Evaluations of the technical packages and the dissemination process are conducted three times a year by three literate farmers per cell (nominated by other farmers). They contact farmers in their cell to record on project-specific survey forms what the farmer claims to have learned from the extension service over the year.

A principal concern raised by project management is that farmers "may have become dependent" on services provided by the long-running project. Because the project is scheduled to end soon, ways to gradually transfer project responsibilities to existing local and regional government infrastructures are being explored. Priority over the next two years, according to project staff, will also be given to a broader application of positive research and extension results through more intensive training programs for both subject matter specialists and extension workers.

F. The World Bank Reforestation Project

The World Bank Reforestation Project was implemented in 1981. Two phases are planned. Phase I, scheduled to run through 1986, has three components: large-scale reforestation; protection of the Kishueti National Forest; and seedling distribution. Phase II will continue reforestation activities, further training of forestry personnel, and will introduce more efficient charcoal production methods.

The major problem facing the project is that land previously designated for project reforestation is now being invaded by squatters for farming. The result, according to the project director, is that there will be insufficient land available to meet the project's reforestation goals. Consequently, project

momentum has been stepped up so that all targeted Phase I planting will be finished by the end of this year (1984), two years ahead of the designated project end-date. "It is a race to keep ahead of the people," he said. "We need to recognize that the best solution for Rwanda is not to plant in large blocks, but rather to use an agroforestry approach: besides, agroforestry has a higher economic rate of return."

The objectives of the large-scale reforestation component is to reforest 8,000 hectares--3,000 ha in Butare and 5,000 ha in Kigali--to help meet the increased demand for fuelwood. Through 1983 a total of 5,231 hectares was planted in the two prefectures, using only E. cumallulensis, E. saligna, and E. tereticornis. Seedling survival, after replanting, ranged between 65 and 94 percent; the lower survival rates occurred on those sites where there was a high incidence of termite attacks. In one case, however, the low survival rate was attributed to the debarking of the seedlings by rats. Plantation growth rates ranged from six cubic meters per hectare per year on the poor sites to over ten cubic meters per hectare per year on better sites.

The second component of the project, to protect the Kishuete National Forest from encroachment by small farmers and to prevent further degradation of the natural resources in the project area, includes the following activities:

- a training program for forest guards to police the national forest;
- the reforestation of 1,400 hectares with pine and cypress to provide wood for furniture-making enterprises; and
- a breeding program and a pasture improvement program to increase animal and dairy production.

G. USAID/GOR Community Afforestation Project

The Rwanda Community Afforestation Project is a sub-project of USAID's Energy Initiatives for Africa Project. It is in the beginning phase of implementation (April 1984), and is programmed for a period of four years. The project has a total budget of US\$835,000 of which US\$500,000 is contributed by USAID and US\$335,000 by the Government of Rwanda. After four years, it is anticipated that the project will be fully taken over by the GOR.

USAID, according to the project director, is considering a food-for-work component. "It could potentially be very beneficial to the project; we would have to identify what size the ration would need to be to interest people in the project area." The GOR, however, does not consider the project area--the Ruhengeri Prefecture--as food deficient.

The goal of the project is to promote reforestation for firewood and other purposes in the communes of Cyeru, Butaro, and

Nyamugali in the Ruhengeri Prefecture in northwestern Rwanda. The project proposes to encourage farmers to plant more trees through the training and installation of 37 extension workers, the improvement of existing tree nurseries, and the provision of courses and demonstrations for farmers and wood users. In addition, the project will expand the plantings of communal forests by 400 hectares.

The project design is based primarily on the Swiss and German projects, both of which are considered very successful in their approaches to reforestation and agroforestry extension in Rwanda. Also, the experiences of the Rwandan Research Institute (ISAR) in Butare which has an experimental station in the Cyeru commune, will be used to guide the project.

The project staff has been contracted and includes an American project director, a Rwandan project manager, a Peace Corps forester (who has since been medically terminated), and three Rwandan forestry technicians. The project staff will instruct the 37 extension agents, both men and women, in basic forestry practices. There will be one extension agent assigned to each of the 37 sectors in the three communes.

Two other AID projects which will have a direct bearing on the reforestation project are in the process of being formulated. These are the Environmental Training and Management in Africa Project (ETMA) and the Cropping Systems Improvement Project.

The ETMA project will be organizing courses on environmental management, some of which all staff members from the reforestation project will attend. The project extension workers in particular will be able to assist ETMA in monitoring erosion and farm practices, which in turn could be used to plan a tree planting strategy. The Cropping Systems Improvement Project--also in the project paper stage--is a multi-million dollar project geared to improve crop production. It is planned that cooperation and appropriate coordination will be sought among all three projects at an early stage in project implementation.

CLOSING DEBRIEFING

On April 19, 1984, to conclude the ten-day mission in Rwanda, the team held a debriefing for the following people: Ambassador John Blane; OAR Representative Eugene Chiavaroli; PL 480 staff Françoise Bernadet and Alan Getson; OAR Agricultural Officer David Dupras; and Deputy Chief of Mission and Peace Corps Director, Donald Hester. The following outline was presented and discussed.

- A. Pre-Rwanda Overview
- B. Observations from Rwanda

Country Situation:

- Rapid population growth; need for increased food production and greater demand for forest products. At this time, only one area of the country is described as "food deficient," due to poor soils, and hence low agricultural output (Gikongoro Prefecture). Other food deficient pockets exist, especially in areas of dense population.
- High awareness within the GOR and among local population of wood shortage.
- Impressive large-scale reforestation (GOR and donor agencies), although seeming lack of cooperation and sharing of project experience.
- Trend in agroforestry programming is toward the small-holder, because of decreasing land availability.

FFW Projects:

- WFP-assisted UNDP/FAO Agricultural Intensification Project in Gikongoro. Two reforestation components: agroforestry extension and erosion control on individual and communal holdings; and large-scale tree planting (800 hectares/year) on abandoned and degraded hillsides, now under state control. Food rations equal 50% of the wage for hired labor.
- ADRA FFW. Two communal woodlot projects in Gitesi (15 has) and Gisovu (45 has). Food ration is 100% wage for planting; maintenance carried out through "Umuganda." Woodlots controlled at community level.

General FFW/forestry conclusions:

- The GOR is concerned with dependency issues, resulting in FFW sites in nutritionally-deficient, low agricultural-producing areas. GOR is not

interested in FFW projects in other areas of the country.

- WFP and ADRA FFW projects are developmental (reforestation) and economic (wages). The nutritional consideration enters in with site selection.
- Financial assistance in the form of PL 480 (WFP and FFW) commodities assures the project of a labor force.
- When FFW is seen as wages and linked to units of work done ("piece work"), more reforestation can occur.
- Umuganda, by general consensus, has been a positive reinforcement for reforestation goals, including attitude changes.
- The antagonistic PVO-USAID relationship described in other countries does not hold true in Rwanda; the relationship is described as excellent. Reason: AID role is more advisory than controlling. PVOs view this as serving well their need for autonomy and latitude.

C. Post-Rwanda Food for Thought

- o Should the AID-WFP relationship serve as a model for AID's relationship with PVOs? This might ensure that the "advisory" role of AID towards PVOs becomes institutionalized.
- o Should AID/W approve of a policy change that would recognize the workers' right to monetize their rations, or dispose of them as they see fit?
- o Should AID/W restrict PL 480 assistance to areas where:
 - there is insufficient agricultural production;
 - there is a recognized nutritional deficiency;
 - the Host Country recognizes a need; and
 - the project will have a long-term developmental impact?

At the conclusion of the debriefing, the U.S. Ambassador commented that he would like to see the Peace Corps presence in Rwanda upgraded, both in staff and Volunteer numbers. "Behind every good development project," he said, "there is a Peace Corps Volunteer."

INTERVIEWS

The following individuals in Rwanda contributed to this report.

GOR Officials

1. Phineas Biroli, Director, Forest Division, Ministry of Agriculture, Livestock, and Forestry
2. Kayjamahaye Athanase, Director of Planning, National Revolutionary Movement for Development
3. Joseph Butare, Project Forester, The Gikongoro Project
4. Etienne Nzeyimana, Food and Warehouse Manager, The Gikongoro Project
5. Ahiman Celestin, Assistant Project Director, The World Bank Project
6. Evariste Duserge, Project Manager, The USAID Project

USG Officials

7. John Blane, US Ambassador
8. Don Hester, Country Director, Peace Corps, and Deputy Chief of Mission
9. Eugene Chiavaroli, Representative, USAID/OAR
10. Alan Getson, Nutrition, Population and PL 480 Officer, USAID/OAR
11. Ed Robins, Project Officer, USAID/OAR
12. David Dupras, Agriculture Office, USAID/OAR
13. Francoise Bernadel, PL 480 Officer, USAID/OAR
14. Kathleen Austin, Administrative Officer, US Embassy

Private Voluntary Organizations

15. Steven Browne, Director, Catholic Relief Services
16. Burton Wendell, Acting Director, ADRA
17. Gerome Nayigiziki, Treasurer, ADRA
18. Nicodeme Kamanutsi, End-Use Supervisor, ADRA
19. Witt Garberson, Director, OXFAM

Other

20. Mark Buccovich, PCV
21. Jacques Selosse, Director, World Bank Reforestation Project
22. Jacques Turin, Project Manager and Technical Advisor, Swiss Pilot Forestry Project
23. Vianney Murekegi, Forester, Swiss Pilot Forestry Project
24. Loik Rumias, Representative, World Food Programme
25. Kurt Roquet, Agriculturalist, German Agro-Pastoral Project
26. Carl-Heinz Vogel, Training and Extension Director,

- German Agro-Pastoral Project
27. Pere Savre, Director, Bureau of Episcopal Development
 28. Raymond Delhaye, Project Director, The Gikongoro Rural Development Project
 29. Father De Veca, CARITAS

ANNEX 5: KENYA

COUNTRY SUMMARY

The PL 480 assessment team visited Kenya from April 20-May 3, 1984. During this period of time the team interviewed 46 individuals representing 20 different organizations and groups. Information from those interviewed, as well as observations from in-country site visits, is included in this country report. The following is a listing of this team's learnings, conclusions, and recommendations drawn from the individual interviews and site visits.

Learnings

- As in the WFP Baringo Fuelwood/Afforestation Project, food-for-work (FFW) can be an effective development tool in those areas facing an impending fuelwood crisis where the local population does not yet see forestation activities as an immediate priority.
- Community-initiated food-for-work projects, such as the CRS Makindu tree planting project, become "make work" schemes when the project is poorly conceived and designed, and receives inadequate technical assistance--regardless of initial intentions.
- In food deficient areas where there are few employment opportunities, such as Baringo and Bura, food-for-work projects can attract quality laborers and experience very little labor turnover, which enables skill development to occur.
- In the Baringo project, women said they preferred food rations as wages over money whereas men said they would prefer money. The project management said they preferred women over men as laborers because the women completed work tasks more responsibly.
- In the Baringo project, the communities decided that the nursery seedlings should be sold, even if at a token price; to give seedlings away free, they said, conveys that they are unwanted and without value.
- In the Baringo project, the question of who will benefit from the community woodlots is unclear or unknown to people; in the project-sponsored private woodlots, however, the question of who will benefit is not an issue.

Conclusions

- With declining per capita food production and an increasing percentage of the population (some say 50%)

classified as in poverty or close to it, Kenya will continue to require food assistance for the foreseeable future.

- Government of Kenya (GOK) forestry efforts are doing little to address the country's fuelwood crisis; nearly 80% of all the wood fuels consumed in Kenya come from private farms and woodlots, and demand for fuelwood and charcoal is growing at an annual rate of 3.6% and 6.7% respectively; the Forestry Department's high rate of reforestation, however, continues to be primarily directed at commercial, institutional and industrial sectors.
- In Kenya, plantation forestry cannot successfully compete with agriculture for land use. The critical problem of land availability will make it increasingly more difficult for the government--with its present approach--to maintain a high rate of reforestation.
- The Forestry Department, according to the Chief Conservator of Forests, is not interested in implementing FFW/community forestry projects. Nevertheless, they are cooperating with the WFP Baringo and Bura projects.
- The USAID-funded GOK Renewable Energy Sector, which has been assisted by 7 Peace Corps forestry Volunteers working in community nursery establishment and agro-forestry extension training of Ministry of Agriculture extensionists, is interested in exploring the possibility of a FFW program. The Sector, however, has experienced serious management problems over the last year and a half, and it is uncertain whether USAID funding--which was scheduled to end in September 1984--will be extended.
- CRS, the only recipient of PL 480 Title II in Kenya, is very interested in expanding its FFW/forestry-related activities, which currently include nine soil conservation projects, and two tree planting projects.
- The WFP-sponsored Baringo Fuelwood/Afforestation Extension Project is very interested in collaboration with Peace Corps, and in fact, has requested 3 Peace Corps forestry Volunteers.
- Although some USAID officials see food assistance projects as "a bottom priority"--as complicated and time-consuming for staff--the AID mission is interested in exploring PL 480 Title II programming and collaboration possibilities.

Recommendations

- ° A PL 480 community forestry pilot project(s) should be implemented in Kenya, contingent on the following conditions:
 - that the AID mission is prepared to commit staff time and funding to the initiative;
 - that CRS and/or WFP* are/is prepared to sponsor at least the food-for-work component of the pilot project(s);
 - that the GOK Forestry Department and/or the Renewable Energy Sector commit staff and resources to the initiative; and
 - that Peace Corps/Kenya agree to commit Peace Corps foresters to the initiative.

- ° If these conditions are met the pilot project(s) should be a collaborative initiative among the following entities:
 - the AID mission;
 - Peace Corps/Kenya;
 - the GOK Forestry Department;
 - the GOK Renewable Energy Sector;
 - CRS;
 - WFP; and
 - the National Council of Women.

- ° If the above entities agree to collaborate on the community forestry initiative, the following issues will need to be addressed:
 - technical site considerations;
 - socio-economic site considerations;
 - organization and management, i.e. role clarification; and
 - scale of pilot sites, including staffing and funding requirements.

*Three Peace Corps forestry Volunteers should be assigned to the WFP Baringo Project, as requested, to promote agroforestry extension and woodlot establishment.

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COUNTRY ASSESSMENT

A. The Food Situation

At the end of the 1970s, food production per capita in Kenya was on the average only 92% of that at the beginning of the decade, showing a decline of about 1% annually. Food imports, both purchases and acceptances of food grants, are consequently on the rise. There are two principal reasons for this decline in per capita food availability:

- The growth of production of cash crops, mainly for export, has been much greater over the last decade than that of food crops; resources allocated to cash crops have increased proportionally as well.
- Food production has not kept pace with the population growth rate, which is now estimated at 4% per annum.

The problem of nutritional deficiency is of course closely related to the general problem of poverty. Nearly half the population, by some accounts, is either in poverty or close to it. The country's poorest 25% receive only 6% of the total national income.

When the population growth rate, income distribution, and the trend in food production are all considered, it is not difficult to conclude that the need for nutritional assistance will increase over the next few years. The people most probably at risk, according to most accounts, are families on small farm plots, the landless and the pastoralists.

B. Food Aid

Currently in Kenya, PL 480 assistance is channelled through both Title I and Title II. The Title I program, which began in 1980 in response to the serious decline in cereal production, has been supplying about \$15 million per year in wheat, maize and rice. Maize was eliminated after 1982 following two good local harvests; and no further importation of rice is being considered because of USAID fears that the provision of rice by donors is creating excessive demand for the high-cost imported grain.

Because Kenyan food production has returned to levels existing prior to the initiation of the US food credit program, USAID proposed in 1983 that the Title I arrangement be discontinued. There was concern that large quantities of donor-financed wheat would serve as a disincentive to local wheat production. In spite of continued GOK incentives to farmers, however, there still appears to be a 140,000 MT shortage of wheat in the near term. To help meet this shortage, an annual program of \$10 million in wheat (65,000 MT for FY 1985) was proposed as appropriate for Kenya.

The Title II planning levels, according to the FY 1986 CDSS, are currently steady at \$5 million per annum, but are budgeted to increase at 10% per year, assuming no major emergency feeding program becomes necessary. CRS is the sole recipient of the Title II food grant program; at this time, PL 480 commodities are not part of the WFP/Kenya ration basket.

In discussing food aid assistance in general, one senior AID/REDSO Food for Peace officer said that food-for-work programs don't have the clout of a direct assistance program. "Mission people are scared of these programs; they involve complicated procedures, and they tie up a lot of time. The net result," he said, "is that food programs receive bottom priority." "Food-for-work has been around for a long time," another FFP official said, "and there's still the question, 'if food-for-work is so good, why hasn't it worked?'"

C. The Forestry Situation

Less than 3% of the total land area of Kenya is forested, representing approximately 2.4 million hectares. Of this, 1.5 million hectares are on gazetted land, land designated as forest land by the GOK, and managed by the Forestry Department--principally for industrial forest production. Indigenous forests cover 0.94 million hectares of the gazetted forest lands and plantation forests represent 0.15 million hectares. The production potential of the indigenous forest on a sustained yield basis is 130,000 m³/year, while that of the plantation forests is 1.7 million m³/year.

The Forestry Department and the Renewable Energy Sector are the major government entities addressing forestation in Kenya.

1. The Forestry Department: Currently operates over 300 nurseries with an annual production of 87 million seedlings, and reforests each year 7,000-8,000 hectares. Most of this reforestation is directed primarily at supplying the pulpwood industry and other commercial needs. Located in the Ministry of Environment and Natural Resources, the Department administers 8 provincial forest conservancies, consisting of 39 forest districts and 185 forest stations. It operates on a 12 million shilling annual budget, most of which comes from the World Bank, and employs a permanent staff of over 10,000. These presently include 350 foresters and 598 forest assistants. Most of the Forestry Department's new plantation sites are being established through what is termed locally as the shamba system (taungya system), in which farmers rent government forest land and plant trees and food crops. In 2-4 years, when the tree growth makes crop production no longer economical, the site is abandoned, and the trees are allowed to grow. The farmers then move to new areas to repeat the process. Farmers participating in the program total almost 9,000.

2. The Renewable Energy Sector: Instituted by the Ministry of Energy and Regional Development to promote fuelwood plantations, efficient cookstoves and agroforestry. Seven nurseries have been established, with an annual production of 3 million seedlings. The major source of funding for the Sector has been a USAID grant, which ended in September (USAID is considering an extension). The Dutch and the Germans are also providing funding. Its total headquarters staff of 27 include 2 foresters and 1 Peace Corps forestry Volunteer. Six other forestry PCVs, who were assigned to the Sector in 1982 have been primarily involved in nursery establishment and extension in different areas throughout the country. The Sector in cooperation with the International Council for Research in Agroforestry (ICRAF) has regularly conducted agroforestry workshops for Ministry of Agriculture extension agents.

Other ministries and organizations involved in forestry-related activities would include:

- ° the Permanent Presidential Commission on Soil Conservation and Afforestation, which dictates forest policy (a unique organization in that it is the only permanent presidential commission);
- ° the Ministry of Economic Planning and Development, responsible for overall coordination of government forestry policy and planning;
- ° the Ministry of Agriculture and Livestock, which produces seedlings in rural nurseries for soil conservation projects and agro-industry wood plantations (and operates a well-developed rural extension service);
- ° the Ministry of Industry, which provides assistance to private wood-based industry;
- ° the Ministry of Science and Technology, which conducts forestry research through the Kenya Agricultural Research Institute;
- ° the National Council of Women, which has established green belts around 50 communities throughout Kenya; and
- ° the Boy Scouts of Kenya, which carries out community tree planting activities.

The GOK Five Year Plan: 1983-1988 outlines targets to be reached by 1988 in the Forestry Sector as:

- ° an annual seedling production of 200 million seedlings;
- ° a total plantation area of 181,500 hectares;
- ° a total of 600 chief nurseries; and
- ° an additional 145 foresters and 559 forest assistants.

Reforestation is to be maintained at an annual level of 8,500 hectares of which 5,500 will be new plantations.

D. Forestry Issues and Problems

A recent FAO report* concluded that in Kenya:

- ° "Wood demand will increasingly exceed sustained supply...The gap between supply and demand by the year 2000 can be about 30 million tonnes if the prevailing conditions and practices remain unaltered. This would cause reduction of standing stock by about 20 percent during the 1980-2000 period--indicating a deepening of the energy crisis."
- ° "Eighty percent of all the wood fuels consumed...comes from private farms, woodlots, or trust lands, while only 13 percent comes from government-controlled forests and 7 percent from county council lands."
- ° "The energy options...weigh heavily in favour of a major emphasis on fuelwood development [on private lands] through agro-forestry, extension forestry, peri-urban plantations and intensive forest management."

The Forestry Department's high rate of reforestation, however, is primarily directed at commercial, institutional and industrial sectors.

The principal constraints hindering government reforestation efforts in Kenya, according to government officials, can be itemized under three categories: land availability, funding, and technical personnel.

Land Availability. There are two distinct ways in which land availability impacts on forestry in Kenya. The first is that forestry must compete with agriculture for land; because food production is seen as a more immediate priority, agriculture takes precedence. Forest plantations, therefore, are usually relegated to areas where establishment is difficult and costly, and where favorable growth conditions are minimal. Because of this land use competition, the Forest Department will find it increasingly more difficult to find land suitable to carry out successful reforestation on a large scale. The second way land availability impacts on forestry is that small farmers in high population density areas have illegally cleared land within forests to plant subsistence crops. This encroachment has resulted in a steady loss of natural forests, especially in western Kenya.

*Report on a Forestry Subsector Review and Programming Mission to the Republic of Kenya. C. Chondrasekharan. FAO. June, 1982.

Funding. According to the Chief Conservator of Forests, the most pressing problem of the forestry department is "simply the lack of money, not just for specific projects, but also for day to day operations of the Department." When asked if food aid assistance in the form of a food-for-work program would help the Department's reforestation efforts, he responded that it would not. "Food-for-work is something that doesn't have any future impact," he said. "I prefer money. Besides," he added, "the food given in these programs is not always food people like: there is too great a variety of eating habits in Kenya." The GOK, it was reported by other officials, is currently having difficulty meeting financial commitments to some of its bilateral forestry projects.

Technical Personnel. Staff shortages "are especially critical at the field level," the Chief Conservator of Forests noted. Foresters and forest assistants are being trained in donor-assisted programs at the University of Nairobi, Londiani College, Egerton College, and the Forestry Industrial Training Center. By 1988, as mentioned previously, the GOK hopes to add 145 foresters and 559 forestry assistants to the government payroll.

PROGRAMS, PROJECTS AND CASE STUDIES

A. The World Food Programme

The World Food Programme (WFP) began its assistance operations in Kenya in 1980. Over the last four years, commitments made by WFP in support of projects for famine relief, school feedings, rural development and rehabilitation activities have amounted to some 112,000 MT of wheat and 5,100 MT of edible oil. A small amount of dried skimmed milk and butter oil was also imported. The US FY 1983 wheat contribution to this figure was 9,000 MT, and was used only for emergency feeding programs. According to the WFP/Kenya Representative, WFP's involvement in Kenya is more than a response to the food deficit; its programs are also addressing the inequitable distribution of foodstuffs in the country. By importing wheat and exchanging it for locally-grown maize and beans through the National Cereals and Produce Board, WFP is able to provide Kenya-produced commodities to projects in food deficient, semi-arid and remote areas of the country.

"Problems inherent in the WFP/Kenya operation," explained the WFP Representative, "include many of the familiar ones: management, warehousing, financing, and most of all, transport. I often have to ask the question: will the impact of the project justify the cost in moving the food?"

WFP currently supplies US \$57,492,400 worth of commodities to four main programs.

- Project #1261 Drought-Effectuated People, which distributes 5,000 MT of wheat and maize at a U.S. dollar value (including international transport) of \$1,346,000.
- Project #2502 Pre-Primary and Primary School Feeding, which distributes 45,000 MT of wheat and oil valued at \$14,037,000.
- Project #2589 and #2669 Rural Development and Settlement in Arid and Semi-Arid Areas, which distributes a total of 33,000 MT of wheat and oil worth \$9,513,000.
- Project #2590 Dairy Development, which includes 18,500 MT of DSM and butter oil valued at \$23,116,000.

Within WFP Project 2589, Rural Development and Settlement in Arid and Semi-Arid Areas, there are two sub-projects with forestry-related components:

- Bura Irrigation and Resettlement Project. FFW compensates recently resettled farmers until their first harvest, and laborers working in the project's nurseries and community fuelwood plantation.

Baringo Fuelwood/Afforestation Extension Project. Workers receive FFW rations for nursery, woodlot, and erosion control activities.

The WFP Project 2669, Rehabilitation Activities in the Turkana District, is an extension of emergency relief activities begun in Turkana following the drought of 1979/80. Some 18,000 families are receiving food assistance by working in a variety of FFW activities, including tree planting.

Case Study - Bura Irrigation and Resettlement Project

The Bura Irrigation and Resettlement Project is located along Kenya's largest river, the Tana, in the sparsely populated northeastern part of the country. Its primary long-term goals are to resettle 36,000 landless and/or unemployed people (5,000 families) from every district of Kenya, and to put 6,700 hectares of arid land into cotton production. Although initiated in 1976, the project did not receive its first settler-tenants until 1981.

The total budgeted cost of the 13-year project is US \$177 million, the majority of which is being financed by the World Bank. Other donors include the European Economic Community, the British, the Dutch, the Finns (forestry consultants), the Kuwait Development Fund, and the Kenya Development Fund.

When the project is completed, it will double Kenya's cotton production; the 2,100 hectares now in production can produce three tons of export quality cotton per hectare worth some ten million shillings (US \$762,000). "These farmers will earn twice the income of cotton farmers in other parts of the country," the project director said. The total investment cost of US \$35,000 per family is considered high, but project officials point out that this figure includes the social as well as the agricultural infrastructure necessary to implement a project of such magnitude in an underdeveloped area. The project includes a FFW forestry component, the goal of which is fuelwood self-sufficiency for the settlement.

The specific objectives of the forestry component are:

- to afforest 4,500 hectares for fuelwood and building poles;
- to establish forest nurseries for every two settlement villages;
- to strengthen the extension service;
- to protect the natural forest along the Tana River; and
- to establish a forest research station.

There are currently two nurseries in the project area, both managed by a Forestry Department forester seconded to the project. The largest is the National Irrigation Board nursery,

which produces 12,600 seedlings with ten workers and one supervisor, all of whom are paid with food rations. The second is the Forestry Department nursery; it produces 10,000 seedlings with eight ministry nurserymen, who receive wages, and four FFW laborers.

Both nurseries produce seedlings with standard procedures: direct seeding in plastic bags; watering "when needed"; grown under shade for the first three weeks; and root-pruned. Seedlings are in continuous production. "We always have water from the canals for the nurseries," the project forester said, "and whatever month we outplant the seedlings, we can water them by flood irrigation."

Although seedlings were being given away when the team visited the nurseries--during National Tree Planting Week--the seedlings from both nurseries are normally used for urban planting around buildings or along roads, or sold to the local people for 25 Kenyan cents per fuelwood tree and one shilling per fruit tree. "The people want fruit trees," explained the project forester, "and I could easily grow them, but the Ministry of Agriculture (MOA) claims they are the only ones entitled to grow them; I'm going to push the issue with them." There are no MOA fruit tree nurseries in the area.

Besides mangos and papayas, other species grown included Prosopis juliflora, Casuarina equisetifolia, Terminalia spp., E. camaldulensis, E. microtheca, Parkinsonia aculeata, and Azadirachta indica.

Plans call for establishing one forest nursery for every two villages. The WFP Representative, who visits the project every one to two months, said that additional FFW rations have been approved for establishing and maintaining these nurseries.

In April 1983, twenty hectares of Prosopis juliflora were direct-seeded every twelve inches in rows four feet apart, after which they were irrigated every two weeks. The plantation has been weeded and pruned regularly--the prunings being left as mulch in every other row; the weeds are often taken away by workers to use as feed for their animals. The trees are now up to three meters tall; the last irrigation took place four months ago (in January 1984). A final weeding was underway during the team's visit.

Plans call for harvesting fuelwood every five years, allowing the stumps to coppice three times before replanting. No decision has been made yet as to how the fuelwood will be allocated or sold. Additional plantations will be established not only through broadcast seeding and direct seeding, but also by planting seedlings of mesquite and other species, notably eucalyptus.

The fifty-eight plantation laborers, about a third of whom are women, and their two supervisors work six hours a day, six

days a week; they are all paid entirely with food rations. There has been very little turnover of laborers: most are nomadic pastoralists, whose livelihoods have been severely affected by the drought. If a laborer does miss four or five days during the month without sending a replacement, "he simply has no work next month," explained the project forester. Workers range from fifteen to thirty-five years old. "Above or below that age," the forester said, "they just don't produce." The project tried to establish work norms on the basis of piecework, but the quality was very poor. "Now, I just tell the supervisor to keep them working until they finish a certain section," the forester explained.

Estimates of man-days per hectare for plantation establishment are:

-- Digging holes and planting:	90
-- Maintenance:	35
-- Irrigation (establishment):	20
-- Supplemental irrigation:	<u>10</u>

Total: 155 man-days per hectare

The forester would like to see the plantation workers eventually paid with 50% food and 50% wages, "because they are not settlers and certainly could use the cash." However, he would continue to pay the nursery workers and urban tree planters 100% food, because they are mostly the sons and daughters of settlers.

The major problems encountered by the forestry component to date have been:

- Lack of materials: plastic bags, hand tools and watering cans.
- Transport of food: food arrives every three months from Nairobi by contract truckers, but it is often late.
- Roaming animals: even though it is required that animals be tied up, they often are left free to wander into the crops and the tree plantation.
- Theft: people are beginning to cut trees and steal wood from the plantation.
- Irrigation: irrigating helps the trees grow, but also produces an excessive competitive weed growth, which requires constant weeding.

Because of recent financial problems, the project has been scaled down to targets of 3,900 hectares of cotton and 2,500 hectares of forest plantation establishment over the next two years. Although 6,700 hectares of cotton plantation was set as the original goal, the project could easily expand with good financing to 14,000 hectares, according to the project director. Stage II of the project calls for initiating a similarly-sized project on the north side of the Tana River.

Case Study - The Baringo Fuelwood/Afforestation Extension Project

The Baringo Fuelwood/Afforestation Extension Project, now in its third year, is located near Lake Baringo in the Rift Valley. The project area covers two ecological zones: the flat bottom land around the lake, inhabited largely by pastoralists living in small scattered villages of loosely organized family units; and the plateau, inhabited by small farmers. In recent years, the region has been hard hit by drought. "The books say there is an average annual rainfall of 600 mm per year," the project director, an FAO forester, said. "But we have not seen more than 300 mm per year since the project started."

Deforestation of the area's sizeable stands of natural acacia forests is occurring at a rapid rate, primarily due to the illegal production of charcoal, sold openly in abundant supply along the roadsides. And heavy grazing pressure and drought, in addition to causing severe erosion problems, has allowed for little natural forest regeneration. "Two to five years from now," the project director said, "the region will be facing an acute fuelwood shortage."

To address this pending fuelwood crisis, the project has set three goals:

- to reforest at the rate of 200 hectares per year;
- to strengthen forestry extension services; and
- to introduce more efficient charcoal production methods.

The Australian government is the project's primary donor, providing funds through the monetization of wheat in a program similar to the PL 480 Title III program. The GOK Forest Department is the implementing agency, with FAO and WFP providing project support in the form of technical staff and consultants. Originally proposed for 18 months, the project is now in a four-year extension, with a third extension planned for 1987. Six million Kenyan shillings have been budgeted for the present extension.

Food-for-work was introduced into the project as an afterthought, the project director said, "when budgeted funds for labor suddenly became unavailable." There are currently 680 FFW laborers working at nurseries, woodlots, and soil conservation sites. "FFW has been essential to the project," he said. "Without it, we could not have operated."

Both FAO and Forestry Department officials point out, however, that the local food situation is an important factor in the success of a FFW program. "Baringo is a food deficient area," the project director said. "People are willing to work for food rations. The program is working well." Monthly rations are transported from Nakuru, 90 kms away, at the project's expense. Due to a lack of storage facilities, they are distributed immediately.

The monthly ration consists of 8 kilos of maize and 12 kilos of beans, both Kenyan produced, and 2 kilos of imported edible oil. To receive the full ration, laborers must work 20 days/month. Each ration is considered a five member family ration; yet, according to project staff, five members of one family could all work for the project and each receive a family ration. Laborers who work more than the 20 days per month are compensated on a daily ration basis.

When asked, the women said they preferred working for food, because it helps feed their families. If they received money they said, their husbands would demand it from them to buy beer. The men, on the other hand, said they would prefer cash for work, because they needed money to buy clothes for their children and pay school fees. Project staff noted that FFW maize sometimes gets diverted to beer-making.

The project has one central nursery, five satellite nurseries, and three chief's nurseries. All are maintained by twelve project nurserymen and 35 FFW laborers, most of whom are women.

The central nursery has a targeted production of 365,000 seedlings; current production is 180,000 seedlings, which includes 58 different species and provenances, most of which are eucalyptus. Seeds are directly sown in plastic sleeves, with the exception of the eucalyptus, which are germinated in beds, and later transplanted into plastic sleeves.

The five satellite nurseries operate similarly to the central nursery, although on a much smaller scale. They are located near the more isolated soil conservation and woodlot sites.

The three chief's nurseries are small, each producing between 200 and 300 seedlings. They are used primarily in conjunction with the extension program.

Nursery piece-work norms have been established at the following rates:

	<u>Project Nurserymen</u> <u>(8-hour day, receive wages)</u>	<u>FFW Workers</u> <u>(5-hour day)</u>
Filling bags	400 bags	200 bags
Root pruning	1,000 seedlings	500 seedlings
Transplanting	1,000 seedlings	500 seedlings
Watering	10,000 seedlings	5,000 seedlings
Canal cleaning	100 meters	50 meters

This year, 22 soil conservation and woodlot sites have been selected and prepared for planting--perimeters fenced, holes dug

and water catchments constructed. Four of the demonstration sites are approximately 20 hectares in size; the other 18 are ten hectares or less. Two sites, two hectares and three hectares in size, are located on private small farmer holdings on the plateau, while the others are on community or state lands. "We still have not worked out who will benefit from the woodlots, and how," the project director said. "We have been trying to work it out equitably, so that the people who have worked in the project benefit from the results. However, the local chiefs will have a big say in how things get resolved."

One 8-hectare community woodlot visited had contour catchments 30 to 40 centimeters deep, constructed across a 1-2% slope. The catchments were dammed every five meters with soil dug from the bottom of the trench, which created a slight depression at the end of each segment. Two planting holes 0.5 meters from the segment ends were dug in these depressions, and brush from clearing was burned over the holes to provide a source of potash for the eucalyptus and mesquite seedlings.

These two species had been planted in random blocks, to observe the responses of the different species and provenances. The site was protected by a 4-strand electric fence operated by a photovoltaic cell. Plans call for harvesting fuelwood every two to three years.

The second site visited was 23 hectares of steeply sloped County Council land with poor, rocky soil. It had been abandoned several years ago because it was considered infertile. Contour catchments were built across the slope by constructing rock terraces 30 to 40 centimeters high, and, where possible, trenching to a depth of 20 to 30 centimeters on the uphill side of each terrace. Planting holes were dug every four meters in the bottoms of the trenches. Prosopis juliflora, Melia sp., Cassia siamea, and Casuarina equisetifolia were planted in April 1984, but with little rainfall, only the prosopis (80% survival) and a few melia (20% survival) are still alive. Drip irrigation was tried on some of the seedlings; however, there was no observed difference in the height growth between the irrigated and the non-irrigated seedlings.

Thorn bush fencing was protecting the site. "Not only was it expensive to build," the project director commented, "but it also requires constant maintenance."

At both sites, the work was being carried out by teams of 20 to 40 laborers, each with one supervisor; in addition, on the larger work sites, there is a group supervisor for every two or three teams. Although 60% of the workers observed were women, all the supervisors were men.

Piece-work norms for some activities have been established:

	<u>Regular Workers</u> (8-hour day, receive wages)	<u>FFW Workers</u> (5-hour day)
Stone terracing	15 meters	7 meters
Digging planting holes	200 holes	100 holes

"Piece-work," said the project forester, "to ensure quality, requires close supervision. The supervisor must also be ready to adjust piece-work norms according to the difficulty of the digging or the terracing."

A recently-initiated extension program will eventually be staffed by 40 extensionists, selected by 20 local farmer groups from their own membership. They will be trained by the project in nursery management and tree planting.

Other components of the program will be directed at women's groups and schools. A female agriculturalist has recently been hired by the project to work specifically with women's groups.

Problems hindering the implementation of the project, in addition to drought, according to project staff include:

Land Availability. "The pastoralists resist giving up land for tree planting," the project director said, "even if it's degraded and virtually useless for grazing. We try to come to an agreement with them, but it's gotten difficult." Two woodlot sites have been established on private land this year, with more sites targeted for next year. "With private woodlots," the director said, "the question of who benefits is resolved. We're hoping that the profits these farmers realize from their woodlots will provide incentive to other farmers to establish their own woodlots." Project FFW laborers were used to establish the woodlots on private land, he said. "We see it as added incentive to the farmer to give up land for tree planting."

Shortage of Forestry Technicians. "There is no problem getting foresters," the project director said, "but what we need are technically prepared field people, which we can't find." The project has put in a request for three Peace Corps forestry Volunteers.

B. Catholic Relief Services

CRS/Kenya FY 1984 programs currently using PL 480 Title II are as follows:

<u>PROGRAM</u>	<u>METRIC TONS</u>	<u>RECIPIENTS</u>
Mother/Child Health Centers	7,894	126,500
School Feeding	337	10,000
Nursery School Feeding	232	4,000
Food-for-Work	1,904	15,000
Other	436	7,000
Totals:	10,803	162,500

The objective for the first three programs, according to the CRS director, is nutritional improvement, while the objective for the food-for-work program is "to develop communities through socio-economic projects." Overall, however, the CRS director said that their purpose in programming food aid is more humanitarian than developmental. As an economic consultant to CRS put it: "There is a conflict when donors want food aid programs to have as many as three impacts--nutritional, developmental and economic--all at the same time; the food should be used as one instrument to support one policy."

CRS/Kenya is interested in monetizing Title II commodities on a pilot basis. This monetization, according to the director, would provide resource support to projects, as well as help finance inland transportation of the food commodities. "Food-for-work is a hassle," he said, "there are no funds to move the food."

According to the director, the basic aim of their FFW programs is to support those community development projects that are initiated at the grassroots level by those segments of the community in greatest need. FFW activities must:

- provide income and employment, especially in rural settings, to the maximum extent possible;
- attempt to develop a productive infrastructure in the target areas;
- enhance the development of technical skills for future employment; and
- strengthen community organizations.

Moreover, he said, FFW projects in Kenya should be targeted more toward women's groups to promote awareness of development issues, since women represent nearly 80% of the work force.

Allocations of sorghum grits and vegetable oil were first provided to FFW projects in early 1979. A major difficulty encountered at that time was the lack of financial resources to meet the inland transportation costs of the commodities. Late in 1979, CRS/Kenya received an Outreach Grant from USAID to help meet these costs. CRS is now also encouraging projects receiving FFW sponsorship to make a contribution that will cover at least 25% of the costs involved in off-loading and transporting the

commodities to the project receiving point. In spite of these contributions, expenses of moving the food are substantial: "The government could help by providing funding to move the food from point A to point B," the CRS director said. "If a mechanism for funding transport and material inputs could be institutionalized, we would be able to think more of long-term human resource development."

Currently, there are 9,000 laborers working in 90 small, short-term (e.g., three to nine months) FFW projects in four provinces (Nairobi, Coast, Rift Valley and Eastern), all addressing agricultural, environmental, educational, community development and health needs. The environmental FFW activities include nine soil conservation projects and two tree-planting projects. CRS would like to expand its reforestation and afforestation activities. However, according to CRS officials, the lack of in-house capability to address technical and design issues is a main constraint to this expansion.

Although currently bulgar and vegetable oil are the two commodities supplied to the FFW projects, the director indicated a desire to change the cereal commodity in arid areas to sorghum, to promote its production.

There are two types of commodity sponsorship to projects that CRS has used in the past several years:

- compensation, where laborers receive food commodities in exchange for forfeiting up to 50% of their wage, which is used to establish a development fund for other project activities; and
- incentive, the most common form of sponsorship, where laborers receive the standardized FFW family ration.

In June of 1983, CRS published a 32-page leaflet, Food for Work Operation Manual, in which all of its policies and procedures are outlined.

In working with Public Law 480 Regulation 11 and Handbook 9 for twenty years, the CRS director said, he has seen it "change for the worse," despite numerous efforts to creatively amend its statutes. "It is the biggest impediment to effective food aid programs," he said, referring to Regulation 11. The cost and staff time involved in meeting AID's stringent accountability requirements, he added, are "an incredible administrative burden on us PVOs. I think we've cut down as much as we can on our part without sacrificing accountability. If AID would pay for monitoring costs (petrol, staff, supervising expenses) of FFW projects, that would help us immensely." In addition, he would like to see a substantial change in PVO liability for losses. "AID should lighten up on PVOs, like they do with WFP," he said. When asked if a greater share of the monitoring responsibilities could

be assumed by the FFW projects themselves, what others have referred to as "self-monitoring," he answered, "It (self-monitoring) is very difficult to set up. So much depends on the rapport between groups, the differences among communities, what kind of ration/work quotas you have--there just is no standard way."

Extreme caution must be exercised in the programming of food aid as a developmental tool, the CRS director said. "First of all," he explained, "do people in the community know what FFW is? The workers must understand that food is being provided as a wage. And they should not be saying 'The Americans are giving us food for what we are already doing anyway.' Food-for-work," he continued, "should not be just a sweat-equity project with food thrown in for good measure. It should be used as an instrument of the project, and not as the core of the project. Food can destroy community motivation," he continued. "In many projects, food is just thrown in for the hell of it." Peace Corps Volunteers have come to the office, he said, asking for food aid assistance to their projects. "I turn them away empty handed," he said. "If the community wants food assistance, let them request it. My policy is to never work through a PCV on a project. I refuse to meet with PCVs; they just come here to get food for their communities to make themselves look good."

Case Study - The Makindu FFW Tree-Planting Project

Makindu is a small community in a food deficient and drought-prone area of the Eastern Province. Four years ago, its people, with the assistance of an Italian priest, initiated a FFW community development project with the following components:

- establishment of a brick-making operation;
- construction of a 21-room primary school facility, with office;
- construction of a 7-room boarding secondary school, with a dormitory and teacher's house; and
- tree planting in and around the 7-acre primary school compound.

The primary school's headmaster reported that records of work attendance were kept by "secretaries" appointed by the Council Chairman, and that distribution and management of the food was supervised by community members, and not by CRS staff. Commodities are stored at the Catholic mission compound, as requested by the Local Development Council. He considered the FFW component very effective. "It would have been a lot slower to make the bricks, to build the school and to plant trees without FFW," he said. "The people would not have responded in such large numbers."

The primary school is due to open in May, 1984, and will serve 600 students. Work on the secondary school continues, and the construction of a health clinic is planned for the near future.

In September 1983, CRS food aid was requested and granted to support the community's schoolyard tree-planting scheme. The food sponsorship, in keeping with CRS philosophy, was seen as serving as incentive for parents to participate in the tree planting activities; it was concluded six months later.

The primary reason given for the tree-planting scheme was aesthetics--"for shade, for greenery, and to help bring more rain here". There was no expressed plan to harvest the trees later for forage, construction material or firewood. Species planted were Azadirachta indica, Croton spp., Prosopis juliflora, Grevillea spp., and Parkinsonia spp. Fencing around the compound was euphorbia. Seedlings for the project were obtained from a GOK Forest Department nursery 25 kms away, and a forestry assistant at the nursery was consulted for technical advice. Tools were furnished by the workers themselves.

Three hundred trees were planted in October (September is the beginning of the long dry season); by April, some 65 percent had died. The Headmaster cited water shortages and goats as the primary reasons for the low survival. Another sixty holes had been dug in preparation for seedlings that were to be planted as soon as the long rains arrived. A small nursery had, in fact, been established on the school grounds to provide seedlings for these later plantings. Technical know-how was obviously lacking; it was in very poor condition.

Three-quarters of the 100 laborers on the tree-planting activities were women. They received daily rations of 2.2 kg. of cereal and 185 cc. of vegetable oil for their day's work (theoretically eight hours). The following tasks were remunerated with food rations: site clearing and preparation; hole digging; planting; mulching; water transport from the Kyumbu River two kilometers away; and watering.

Additional planting and maintenance are to continue with volunteer labor from the community without food assistance. According to the chairman of the Local Development Council, known to be a strong leader and organizer, there would be no problem in procuring necessary help even without food assistance from now on--the incentive had "served its purpose," he said. More food aid was being requested, however, for other components of the project.

CLOSING DEBRIEFING

The team held a debriefing on May 3, 1984, for USAID officials, in which comparisons were made among the three forestry/food-for-work projects visited. The team also summarized for mission officials its conclusions from previous countries.

The three projects visited were outlined as follows:

1. The Bura Irrigation and Resettlement Project.

Situation

- Food deficient, drought-stricken area
- Perceived fuelwood shortage

Project

- Cotton production and resettlement
- Forestry component with objective to address fuelwood needs is managed by a project forester and includes two nurseries with 15 FFW laborers and a 20 has fuelwood plantation with 60 FFW laborers. Ten year target is 2,700 hectares.

Results

- Well-maintained nurseries
- High survival rate in plantation

2. The Baringo Fuelwood/Afforestation Project.

Situation

- Food deficient, semi-arid area
- Severe soil erosion
- No perceived fuelwood shortage by local population

Project

- Soil conservation component
- Fuelwood plantation component which emphasizes community and private woodlot establishment
- Nursery component to support woodlot and soil conservation components

Results

- Too early to determine since sites established only last year

3. The Makindu Tree Planting Project.

Situation

- Food deficient, semi-arid area
- No perceived fuelwood shortage by local population

Project

- Seven acres of school yard tree planting for aesthetic purposes

- One hundred parents of school children received food ration throughout six month CRS sponsorship of the project
- Received little or no technical assistance

Results

- Less than 35% survival after eight months, because the trees were planted at the wrong time of the year.

In presenting each of the three case studies, the question was asked: "Is this type of FFW project justifiable?" It was concluded that the Baringo and Bura projects were justifiable, because the food as a resource was well-programmed, and addressed long-term developmental needs. The Makindu Project, however, was seen as poorly conceived and designed, with too intensive a labor force on too small an effort which had no long-term development goals.

INTERVIEWS

The following individuals in Kenya contributed to this report:

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3. Felix Ngunjiri, Project Forester, Bura
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7. Peter Ambudo, Forester, Forestry Department
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USG Officials

9. Dwight Walker, Agricultural Development Officer, USAID
10. Rose Britanak, Health and Population Officer, USAID
11. Maria Mullei, WID, USAID
12. Robert Kidd, Food for Peace Officer, REDSO/ESA
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20. Palmari deLucena, Country Director, CRS
21. Ezra Mbogori, Project Manager, CRS
22. Maurice Thorne, Consultant to CRS
23. Jackson Ole Kuriain, FFW Officer, CRS
24. Rudy Ramp, Country Director, CARE
25. Mike Weist, Director, CRS/Regional Office
26. Tom Roach, E. Africa Representative, Lutheran World Relief

Others

27. Alan Jones, Representative, World Food Programme
28. Khalid Adly, Program Assistant, World Food Programme
29. Harry Banks, PCV
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31. Carolyn Thorpe, PCV
32. Maggie Neff, PCV
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40. Issak Olekeben, Area Supervisor, Marigat/Baringo
41. Michael Otekoipiri, Assistant Chief, Meisiori
42. Judson Kilundo, Headmaster, Makindu
43. Philip Kimba, Local Development Council Chairman,
Makindu
44. Father Colombo, Makindu Catholic Mission
45. Father Enrico, Makindu Catholic Mission
46. Peter deWees, Fulbright Scholar, University of Nairobi

ANNEX 6: SOMALIA

COUNTRY SUMMARY

The PL 480 assessment team visited Somalia from May 12-27, 1984. During this period of time the team interviewed 66 individuals, and visited 14 project sites. Information from those interviewed, as well as observations from the site visits, is included within this country report. The following is a listing of this team's learnings, conclusions, and recommendations drawn from the individual interviews and site visit observations.

Learnings

- ° At work sites where the quality of the average FFW laborer is low, and labor turnover is frequent, closer supervision and constant training is required: not only does this situation undermine production targets, it also overtaxes project management--which most projects can ill-afford.
- ° Projects in urban areas, such as the Mogadishu nursery, or in rich agricultural areas, such as the Shalambood Dune Fixation Project, will not attract the more productive laborers until the "wage"--whether it is FFW, cash, or a combination of the two--is competitive with the going rate for paid labor.
- ° In small, rural communities with few employment opportunities, FFW projects, such as the Bulalo Woodlot, can attract a stable, productive labor force.
- ° In areas where the local population is already receiving emergency food relief, cash-for-work attracts more and better quality laborers than food-for-work.
- ° Tree planting activities can successfully incorporate both FFW laborers and community volunteers. This year, in Bulalo, a seven hectare site was prepared for planting by 15 FFW laborers, and planted by the community on National Tree Planting Day.
- ° FFW rations comprised of locally produced cereals--purchased with PL 480 derived funds--is not a viable alternative to imported FFW rations: if a country is truly food deficient, there are no surplus cereals.

Conclusions

- ° Somalia's dependence on outside food assistance is on the rise: the 1984 food deficit is projected at 100,000 MT or more of cereals.

- By 1985, it is estimated that GSDR donor-assisted reforestation efforts will be planting approximately 10,000 hectares per year for fuelwood, windbreaks, shelterbelts, and dune stabilization: a recent IBRD forestry assessment, however, suggests that 40,000 -50,000 hectares of trees need to be planted each year to meet projected wood demand.
- The National Range Agency (NRA), the GSDR implementing agency in forestry development, is committed to expanding its reforestation efforts: a major constraint to this expansion, however, is the shortage of trained staff at all levels within the forestry sector.
- The WFP Rangeland and Reforestation Project will continue to fall far short of production targets until the FFW ration and/or NRA cash supplement is increased.
- USAID supports cash-for-work forestry activities in three PVO-sponsored refugee programs. Neither USAID nor the PVOs are interested in returning to food-for-work programs.

Recommendations

- Peace Corps and USAID should explore programming possibilities for Peace Corps forestry Volunteers in Somalia: forestry PCVs could greatly enhance both USAID and WFP supported NRA forestry activities.
- The WFP proposal for a standardized food/cash wage in USAID and WFP sponsored NRA forestry activities has merit in this food deficient country: USAID should reconsider its position.

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COUNTRY ASSESSMENT

A. The Food Situation

The Somali Democratic Republic (SDR) is a vast country, comprising 637,000 square kilometers. Its population, which is estimated at 5.5 million, includes a large number of refugees who are dependent on outside food sources for their survival.

The climate of Somalia is arid to semi-arid. The country can be divided climatically into three regions: the northwest with an average annual rainfall of 400 millimeters; the northern sea coast and the northeast and central regions where average annual rainfall varies from 50 to 150 millimeters; and the inter-riverine area in the south between the Shebelle and Juba rivers, with an average annual rainfall of 600 millimeters. There are two rainy seasons--from April to June and from October to December. The rainfall pattern is similar to that of other areas in the arid, semi-arid belt, with considerable variation from year to year and droughts in two out of ten years.

The rains in the late 1983 rainy season were generally poor, and production for the last half of 1983 has suffered. This has led to serious food problems during the first six months of 1984, with a projected deficit of 100,000 MT or more of cereals. The government, in recognition of the magnitude of the food deficit faced by the country, waived all import controls for commercial imports of foods.

Exacerbating this food situation are serious distribution problems. For one, cereals from areas of excess, primarily the inter-riverine districts of the central-south, are not being evenly distributed to the pockets of serious deficits, most of which are in the north and northwest. Moreover, it has not been possible to predict the effects of the large amounts of long-term on-farm storage reserves on the total availabilities. Since sorghum is stored for periods of 5-10 years in underground silos, farmers increasing or decreasing stocks in storage could either heighten or buffer the effects of the deficit.

B. Food Aid

PL 480 has been utilized in Somalia to address immediate food requirements, as well as to fund agricultural development projects. Current PL 480 programs in Somalia are as follows:

- PL 480 Title I program, which is used to help meet the general food deficit and to fund agricultural projects for both rain-fed and irrigated lands;
- PL 480 Title II commodity assistance to the World Food Programme (WFP) to support the care and feeding of refugees; and

- a PL 480 Title II emergency grant, which was made this year in response to the GSDR appeal for emergency aid, and which provides over \$4 million worth of wheat and vegetable oil to address food shortages in urban areas. (The proceeds generated from the sale of the Title II commodities are being used to expand the agricultural credit window at the Somali Development bank.)

According to USAID officials, the PL 480 Title I program has the following objectives:

- to provide balance of payment support;
- to provide support for the government budget;
- to provide necessary foodstuffs for the Somali population; and
- to stimulate food production and agricultural development through the use of local currency proceeds.

The local currency generated by the Title I program is managed by the Ministry of Finance's CIPL Unit in accordance with the terms and conditions agreed upon by the U.S. and the GSDR as part of the PL 480 Title I Agreement.

Since 1978, the U.S. has provided over \$96 million under the Title I program. The 1984 program totals \$16 million for the purchase of over 47,000 MT of food commodities, which included wheat flour, wheat, rice and vegetable oil. It is expected that a Title II program will replace the Title I program by 1985.

C. The Forestry Situation

In Somalia, 8.8 million hectares are classified as forests, which represents 13.8% of the country's total land area. Unfortunately, the vast majority of this area, 99% of it by some accounts, is either degraded scrub or brush lands. In 1981, FAO listed 90,000 hectares as "productive forest," which was comprised of 40,000 hectares of Juniperus procera in the mountainous north and 50,000 hectares of riverine forest in the south.

The Juniperus procera and riverine forests have an estimated standing value of 2.0 million m³ (50 m³/ha) and 5.0 million m³ (100 m³/ha) respectively. Forest plantation yields as estimated by FAO are expected to be 250 m³/ha every ten years from irrigated plantations and 70 m³/ha from rain-fed plantations for the same period of time. Yields from the wooded savannah are less than 1 m³/ha of Acacia bussei, used in charcoal production, and 3 to 5 m³/ha of all other species.

Recent figures from the Forestry Department of the National Range Agency give a total of 57 nurseries in Somalia. However, many of these are small, isolated nurseries with a production of less than 10,000 seedlings per year. The observed species most commonly planted in plantations are: Casuarina equisetifolia,

Swietenia mahagoni, Eucalyptus camaldulensis, Prosopis juliflora, Sesbania sp., Conocarpus sp., and Azadirachta indica.

The present estimated annual consumption of wood in Somalia is 5.8 million m³, of which 96% or approximately 5.6 million m³ is used for fuelwood or charcoal. By year 2010, these consumption figures are expected to reach 14 million m³. A recent IBRD forestry assessment suggests that 40,000 - 50,000 hectares of trees a year need to be planted to meet projected wood demands.

The National Range Agency (NRA). The National Range Agency was established in late 1976 as a semi-autonomous body within the Ministry of Livestock, Forestry and Range. It is the lead implementing agency within the government for forestry and rangeland activities, which include:

- nursery establishment and management;
- forest plantations;
- sand dune stabilization;
- community forestry;
- soil and water conservation works; and
- establishment of grazing reserves and associations.

Through 1981, government policy and NRA goals were primarily geared towards protecting and regulating the use of the natural resources. Only approximately 300 hectares per year of reforestation was occurring, including both government (largely WFP-sponsored) and private planting.

In 1981, under the auspices of the Cooperation for Development in Africa (CDA), and with the US designated as "lead donor," Somalia began an accelerated program in forestry and fuelwood production. Four American PVOs--Save the Children, CARE, Africare, and Interchurch Response--implemented projects in reforestation, primarily in and near refugee camps and urban areas; and the German Agency of Cooperation (GTZ) and the Kuwait Fund sponsored rangeland projects in the central and northern regions of the country respectively, which include nursery, soil conservation, and agroforestry activities. By 1985, it is estimated that these projects will be planting approximately 10,000 hectares/year for fuelwood, windbreaks, shelterbelts, and dune stabilization.

In addition to the above donors, the NRA range and forestry sectors also receive technical and financial assistance from UNDP, FAO, UNCDF, UNSO and WFP. WFP food-for-work rations support most NRA activities, with the exception of those being carried out by the four American PVOs. Although these PVOs--with the exception of Interchurch Response--originally relied on WFP rations to pay laborers, they now pay cash from funds derived from the Commodity Import Program (CIP).

D. Forestry Issues and Problems

Government and donor officials in Somalia agree that a complete destruction of the forest cover within a decade or two

may be expected unless the following issues and problems are addressed.

Technical personnel. The shortage of trained staff at all levels within the forestry sector is a major constraint in forestry development in Somalia. Although many steps have been taken to increase the number of technical personnel and to improve their effectiveness, staffing remains well under proper strength.

There are currently 3 graduates with University degrees in the forestry sector and 7 technical graduates with forestry diplomas. The recently established two-year forestry training program at Afgoi, developed under the direction of the British Technical Cooperation, will eventually alleviate much of these staffing constraints. The school graduated 14 forestry technicians in 1983 and 29 in 1984. Staffing priority for these new graduates is given to those administrative regions of the country where donor-assisted development projects are being implemented. Because of the shortage of qualified and trained staff, most regional staff positions, however, are filled with secondary school graduates appointed immediately after graduation. Research and research technicians are lacking at all levels.

Forestry Data Base. According to government officials, the only forest inventory completed in Somalia was done in the juniper forests. In spite of this, there have been estimates in the literature of growth, area and standing volume that, according to the FAO foresters in-country, "have been used over and over again, but we still don't know for sure what these figures are based on."

Statistics on nursery production, hectares planted, and charcoal production all appear unreliable. The recent WFP forestry evaluation team cited this lack of data as the major hinderance in carrying out their evaluation of WFP-assisted NRA activities. As one government official said, "Somalis have taken great pride in their oral tradition--we just aren't used to keeping records."

Population Pressure. The Ogaden conflict and the refugee influx, the settlement of pastoralists, and worldwide inflation and its consequences on petroleum imports have increased fuelwood and charcoal demand, in addition to forage demand. The immediate result of these factors is greater pressure on forest and savanna woodland causing, in some places, their total devastation.

Refugee settlements have taken a toll on Somalia's forest resources. Many of these areas have been stripped of vegetation for a radius of six to ten kilometers around the camps. To deal with this problem, many relief agencies are now implementing reforestation activities.

Overgrazing. Excessive pressure is being placed on natural resources by the country's 33 million head of livestock.

Overgrazing is causing the destruction of an estimated 50,000 hectares per year of savannah.

The problem is a difficult one to address, since large herds signify wealth in the Somali culture. According to NRA officials, however, the drought over the last decade has had a significant impact on people's thinking. "Many animals have died of starvation in recent years," one NRA official said. "People are now more willing to listen to range management advice."

Deforestation. Problems which cause a continual and rapid deforestation include overcutting for fuelwood, uprooting for land clearing, excessive branch lopping for fodder and charcoal production.

Charcoal demand by the urban centers has greatly increased in the last few years, officials note. "To reach the charcoal camps," one international charcoal expert said, "I now have to travel 80 kilometers further out than I did in 1982." A considerable amount of charcoal is sold "illegally," rather than through the government marketing board, because the free market price is considerably higher than the government price.

PROGRAMS, PROJECTS AND CASE STUDIES

A. The World Food Programme

Up through 1983, Somalia had received from WFP a total of US \$171,261,000 for school feeding, emergency relief and development projects. Three feeding projects have recently been terminated, but emergency refugee relief is still underway, as is Project #719, the Rangeland Development and Reforestation Project.

Project #719, which is being implemented by the NRA, was originally approved in 1973, and is currently in its first extension; another extension is under consideration. The total cost of the project is listed at US \$34,043,000, of which 40,000 MT of WFP commodities have amounted to US \$14,390,000.

Overall responsibility for the project's execution rests with the NRA, although the Food Aid Unit in the Ministry of the Interior oversees the off-loading, storage, and transport of the commodities to regional stores. The NRA is responsible for distributing the commodities from the stores to project sites. Each WFP ration consists of 180 grams of locally-purchased maize; 200 grams of edible oil; 200 grams of DSM; 100 grams of sugar (the NRA contributes an additional 50 grams to each ration); and 30 grams of tea. The FFW laborer works 6 days a week and receives five rations (considered one family ration) for every 7 hour day. The government makes a cash contribution to each worker of one shilling per day, which over the years has decreased in value to the point of being seen merely as a token contribution. (US \$1 = 17.38 Somali shillings.) For this reason, the rations are officially viewed as compensation for work done voluntarily since the International Labor Organization requires that food rations as part payment comprise no more than 50% of the wage.

In May, a WFP evaluation team recommended a three-year extension of the program (June 1985 - May 1988) on condition that the forestry sector receive greater emphasis. Currently, the forestry sector receives 15% of the program funding, while the range sector receives 85%. The WFP team is recommending closer to a 50-50 split for the project extension.

Case Studies - WFP Assisted NRA Activities

FFW rations are being provided to 12,120 workers at over 100 NRA project sites throughout the country. These sites represent a variety of range and forestry activities, including sand dune fixation, community woodlots and soil conservation.

Sand Dune Fixation. Over 500,000 hectares of sand dunes along Somalia's coastline are moving inland at an estimated rate

of 30 meters/year, threatening agricultural areas, roads, and towns. There are presently eleven project sites where further encroachment is being prevented.

The largest of these sites is the UNDP/UNSO Shalambood Project near Merca, where an average of 600 hectares of dunes are stabilized each year. Between 1978 and 1984, 3,000 hectares of dunes were stabilized; an additional 1,200 hectares are targeted. The estimated cost of the project over a 3 year period--exclusive of WFP assistance--is US \$1.44 million.

The Shalambood Project was initiated in 1973, and relied wholly on volunteer "self-help" labor. The project was promoted by the government with the slogan "Sand dunes are the enemy of the people." Since 1978, however, the primary labor force has been 200 FFW workers, although 100 volunteers--mostly government civil servants--continue to work four days a week for 2½ hours in the late afternoon.

The FFW laborers work five hours a day, 25-26 days each month. Thirty to forty percent are women, many over 50 years old. "We don't get the best workers," the project director said. "Casual laborers can earn more money working on the irrigated farms in the valley." The project borders the richest food-producing area in the country.

During the dry season, FFW laborers construct and erect windbreak panels. Brush is cut from nearby areas, woven into 1 meter by 1 meter panels, and tied together with ¼-inch nylon cord. The panels are transported by truck to the planting site. In preparation for the panels, tractors plough 40 centimeter-deep furrows in the direction perpendicular to the wind. Once the furrows have been made, the panels are placed in the furrows upright and adjacent to each other; the furrow is then backfilled to stabilize the panels. The result is a windbreak 50-60 centimeters high. In areas with soft sand, the panel windbreaks are spaced eight meters apart; in compact sand, they are 15 meters apart.

The men primarily collect bushwood to construct the windbreak panels; the women plant seedlings and erect the panels. Most of the work is done under supervision, although a "piece-work" system is sometimes used for panel construction (20 panels per day) and for setting them into place. The project tried piece-work with planting, but found that the quality of the work was consistently poor. There is one supervisor for every 20 workers; these supervisors also receive WFP rations (plus 1 shilling per day) as payment.

The Afgoi nursery, 60 kilometers away, has supplied most of the seedlings for the project over the years. The Save the Children nursery at Qorioley, about 30 kilometers away, also provides seedlings. Transport of the seedlings has been a major project constraint. Recently, a nursery was established at

Jenale (seven kilometers away) which should facilitate planting activities considerably.

Approximately 400 seedlings are being planted per hectare at a 5 meter by 5 meter spacing: cactus and Euphorbia sp. on the steeper slopes, and Prosopis juliflora and Casuarina equisetifolia in the flatter areas. The project director estimated the survival rate at 70%, although it appeared to be closer to 30%. Generally the cactus and Prosopis juliflora had much better survival than the euphorbia and casuarina. Although there were large numbers of dead seedlings, no replanting had been undertaken prior to the team's visit.

Most of the dead seedlings observed had apparently died because they were either buried in sand or the wind had completely eroded the soil away from their roots. Best survival appeared to be where seedlings were protected by the windbreak panels, but not planted too close to them, which is where most of the duning occurred. Seedlings have also been destroyed by grazing animals brought into the plantation at night, according to the project director.

It was interesting to note that in addition to wind erosion in the dune area, there was also water erosion. The windward side--the coastal hills above Merca--have been eroded and gullied by the effects of heavy rains. Attempts to stabilize these areas apparently have not been successful.

Community Woodlots. There are four pilot WFP-assisted community woodlot sites at this time in Somalia, and additional sites are being planned. From all accounts, they are proving successful.

The first woodlot site, established in 1982, borders on the village of Bulalo (200 families), less than ten kilometers from the Afgoi nursery and the Afgci Forestry Training School. It is now 8.5 hectares in size. The chairman of the village, who receives a government salary, was instrumental in securing the land and organizing the community, according to NRA officials.

When the woodlot was first established in 1982, 1.5 hectares were planted. A year later, an additional 7 hectares were planted. The first year, the site preparation included clearing, fencing and the construction of water catchments 1 meter in diameter, which were diked to include random blocks of 4-6 catchments. The planting was done with Azadirachta indica, Casuarina equisetifolia, Swietenia mahagoni and Acacia spp., using a 2.5 meter spacing, and the site was intercropped with maize. Survival, initially only 40%, was best with Azadirachta indica, which is why this species is being used to replace seedling lost (primarily to termite attacks). Seedlings from the first planting are now up to 3 meters tall. The chairman explained that the water table is only 10 meters: once trees get started, he said, they grow well.

The 7 hectare site, established the following year, was prepared and planted differently. The site was cleared, fenced and then furrows 4 meters apart were plowed. In these plowed furrows, every 3-5 meters, small catchments were made, measuring 30-40 cms in diameter. The seedlings, principally Azadirachta indica, were planted in April; at the time of the team's visit there was a 90% survival.

The chairman pointed out that although the site was prepared for planting by FFW workers, all the planting was done by the community on April 17, National Tree Planting Day, an event which this year was attended by the governor of Merca. This approach has proven so successful that the NRA is requesting that a second tree day be instituted to coincide with the September-October rainy season.

Both the chairman and the NRA regional director stated that the woodlot would not have succeeded without the FFW rations. "Volunteer self-help is okay for projects which last a day or two, or a week," the regional director said, "but not for a project which requires two or three years of maintenance. Most people cannot afford the time, even if they realize the need."

The Bulalo woodlot is maintained by fifteen FFW laborers, each with assigned duties. They include two supervisors (who received two months' practical training in Afgoi), an assistant supervisor (a woman), guards, fence makers, several people to water and weed seedlings, and the owners of the three donkey carts which transport water. (The carts are hired for one family ration per day to haul water from 2 p.m. to 6 p.m.) The workers were hired on the basis of ability (health and strength) and willingness, according to the chairman. There is no significant turnover of workers, he said, because they are residents of the community: they are not attracted to high-paying jobs away from home when there are income opportunities in the vilalge, including FFW rations. Each month the workers go to afgoi to receive their rations.

When asked how the wood would be handled when the trees were ready to harvest, the NRA regional director said: "Our only plan now is to encourage communities to plant; we're trying to convince people that it is better to plant than to cut." NRA officials in Mogadishu acknowledge, however, that many communities would be skeptical about setting land aside for a woodlot, because to them it would be the same as turning the land over to the government. "Only when the people of Bulalo start harvesting wood from their woodlots," a senior NRA official explained, "and realize that the woodlot belongs to them, will they and others become convinced."

Soil Conservation. The Northern Rangeland Development Project (NRDP) is the largest WFP-assisted soil conservation program in Somalia. With US \$21 million from the Kuwait Fund and technical assistance from FAO, the NRDP has been in operation in four regions of northern Somalia since 1980, with the goal of

four regions of northern Somalia since 1980, with the goal of upgrading the rangelands through soil and water conservation works, grazing reserves and associations, and windbreaks and shelterbelts.

There are 2,700 FFW laborers in the project's forestry and range sectors, implementing project activities "that would never have been initiated by community self-help volunteers," as one range extensionist explained it, "because the local population does not yet fully recognize the benefits of grazing reserves, soil conservation, and woodlots." The project director agreed: "The concept of planting forage crops and trees is not traditional in the nomadic culture of northern Somalia: the project's food-for-work activities provide demonstration and technical experience."

Soil conservation FFW activities have been carried out near watershed areas adjacent to major roads and villages because these areas have high visibility and demonstration impact, as well as accessibility and an available labor force.

In the Burao region, since 1981, 1,500 hectares have been tractor-ripped and planted with grass--Cenchrus ciliaris, Chloris gayana, and sudan grass; and this year 6,000 seedlings of Eucalyptus spp and Acacia spp were outplanted on these sites. Experimentation has also been conducted with bunds (earthen mounds constructed along the contours). The preferred size of the bunds at this time is 74 centimeters high; at one site, they were spaced 25 to 30 meters across a 1% slope. The project is attempting to demonstrate to the local population that over a short period of time the amount of grass produced on these areas will more than pay for the investment in labor and money. According to the project director, eleven private farmers in the project area have asked for technical assistance in soil conservation in the last year. "It's important that these farmers succeed," he said, "and demonstrate the benefits to others."

Nine project nurseries, averaging 8,000-19,000 seedlings supply project tree planting activities in the four regions. Project staff explained that the nurseries are small because water is a problem. Although the original project design called for many "mini-nurseries" throughout the four regions, the WFP evaluation team is now recommending that where feasible, existing nurseries should be consolidated to the extent possible to keep technical and material resources from being spread too thinly. Lack of water was also cited by project staff as the primary reason for the slow progress in tree planting activities. At one soil conservation site visited, water was being hauled in by a tank truck.

By most accounts, the greatest impact of the project has been the establishment of grazing reserves. From a total grazing area of roughly 330,000 square kilometers, close to 200,000 square kilometers, or two-thirds of the total area, now consists of

reserves. They are having a significant influence on the existing patterns of nomadism and further settlement of the nomad population.

One project official compared the situation to the Oklahoma land rush. "Families are grabbing land and trustee rights over grazing reserves through government-sanctioned 'grazing associations'" he said. "The nomads never accepted the cooperative movement which the government pushed in the 1970s," he added, "because the cooperatives were not organized along family lines. Grazing associations are, and they are proving to be a viable instrument in improving the rangeland."

The average reserve is 100 square kilometers, and has range guards, usually elders, patrolling the perimeters. The guards receive FFW rations and attend a project-sponsored 10-day training session once a year. The reserves are on a six-month rotation, closed during the rainy season to allow the grasses to seed, and opened during the dry season. Herders entering a closed reserve are subject to a government fine.

According to both NRA and FAO project officials, proper supervision at work sites has been a lingering problem since the start-up of the project. The WFP project officer, who has responsibility for monitoring and evaluating work norms and ration distribution, has never had a vehicle. As one FAO official put it, "If you're going to put an administrator out there, you've got to provide the whole package."

Given the shortage of supervisory staff, the project director sees a piece-work approach to meeting work targets as preferable; but, he said, "The problem becomes: Who determines piece-work norms, and how?" Two activities in which a piece-work system has met with success are:

- digging holes for tree planting, at a piece-work rate of fifteen 2 ft³ holes per day; and
- constructing 75 centimeter high earth bunds, at a piece-work rate of 10 meters per day for females and 15 meters per day for males.

The project director cautioned against a piece-work approach to planting seedlings, given the importance of proper handling of seedlings, and the importance of compacting the soil well around them.

To ease supervisory-level staffing shortages and to improve the quality and timeliness of project accomplishments, the project has recently upgraded several FFW laborers with good performance records to full-time, cash-paid project officers.

Problems Encountered

Major problems affecting WFP Project #719, according to WFP and government officials, have included inadequate record keeping, and ration content, size and timeliness of delivery.

Record keeping. "The lack of records and field data is one of the greatest hindrances to Project 719," one WFP program officer stated. A member of the WFP evaluation team added, "In a complex project, such as 719, with many sites and many activities, very close supervision on the part of WFP is required. But how can a project be monitored with no recording and no accounting?" Moreover, deficiencies in record keeping allow no accurate and reliable recording of achievements. As a result, FFW work norms are nearly impossible to establish.

Incomplete rations. FFW rations have been incomplete in some regions of Somalia, particularly in the north, because the purchase of locally grown maize and other cereals--with funds derived from the WFP wheat flour exchange program--has not been possible due to short supply, a result of last year's drought. For six months, in fact, the NRA regional office in Hargeisa has had one million shillings available from the wheat exchange program for maize purchases. "The money is just sitting in the bank," a regional officer said, "because there is no locally produced maize out there that we can buy." NRA officials in Berbera and Burao complained of the same problem. By most accounts, FFW laborers trust that they will eventually receive the maize due them, but their morale, nevertheless, has been affected by the problem.

As a short-term solution, the NRA general manager submitted a special request to WFP/Rome to authorize NRA regional offices to pay FFW laborers the equivalent of the 180 grams of maize per ration in cash until locally-produced maize becomes available.

Insufficient Ration Size. At the start of WFP Project 719 in 1973, the value of one family ration was estimated at 7.5 Somali shillings. With the government contribution of one shilling per day, the total daily wage equalled approximately 8.5 Somali shillings, which was considerably more than the average daily wage of 5 shillings at that time for similar activities. WFP rations were thus highly instrumental in attracting the necessary supply of quality labor. Now, ten years later, the WFP ration and the one shilling government contribution is equivalent with inflation to about 15 shillings, well below the current minimum wage of 30 shillings. Not only has this resulted in an inability to recruit the desired numbers of workers, it has also reduced the quality of those recruited. "Old men, a few boys, and women make up the vast majority of the FFW workers," the WFP Deputy Representative said. "They are the only ones who will work for the food."

When the project expansion started in 1979, there were only 3,000 workers as against a target of 14,200. The number reached 5,000 in 1980, 7,000 in 1981, and 8,000 in 1982. "Either the ration size or the cash payment must be increased," the NRDP project director said, "to enable us to attract more and better quality workers. At most sites, not only is the quality of the average worker low, but we also have a quick turnover; hence the

need for close supervision and constant training." Not only does this situation greatly reduce the cost effectiveness of government reforestation activities by undermining production targets, it also overtaxes project management. Referring to one nursery, a FAO expert commented: "The seedlings are very expensive to produce with FFW--22 people paid rations for 312 days/year to produce only 10,000 seedlings."

The WFP Deputy Representative has recommended to NRA and to USAID that the WFP-supported FFW programs and the USAID-supported cash-for-work programs be pooled, paying all workers 50% cash and 50% food. USAID's response: "Then we'd have half of WFP's problems."

Ration Delay. Rations are delayed in some parts of the country for three to six months. In most cases, laborers continue to come to work sites, trusting that the rations will eventually arrive. When laborers have decided to resign because of the delays, one project officer related, he or she is told that the resignation will not be effective until signed off on in the capital. The laborer continues to work, because he or she believes it is mandatory. If the laborer asks about the resignation approval, project staff say the letter hasn't yet arrived.

B. CDA Forestry Phase I Refugee Areas Project

NRA cash-for-work forestry projects are also underway throughout Somalia, financed under the USAID bilateral CDA Forestry Phase I Refugee Areas Project. The projects with cash-for-work components include the following:

- The Africare Reforestation Project at Jalalaqsi. Targets include 44 hectares of fuelwood plantations, 160 hectares of shelterbelts, and 20,000 trees for distribution in communities, camps and villages. The project runs two main nurseries and 4 satellite nurseries.
- The CARE Reforestation Project at Belet Weyn. Targets include 770 hectares of fuelwood plantation, 32 hectares of shelterbelts, and 54,000 trees for distribution for shade and amenity plantings.
- The Save the Children Federation Reforestation at Qorioley. Targets realized are 90 hectares of fuelwood plantations, 33,000 trees distributed to communities, and the establishment and maintenance of the country's largest nursery.

The above projects were originally implemented with WFP food-for-work components, in which sugar was the FFW commodity. The primary reason given by USAID and project officials for the shift to cash-for-work was simply that the projects could not count on a regular supply of sugar. As previously mentioned, the funds for the cash-for-work program are derived from the USAID

Commodity Import Program (CIP), and administered by the CIPL Unit of the Ministry of Finance.

In the CARE project, it had been expected that labor shortages would be the greatest constraint faced in project implementation. Indeed, it was only after project labor payments were changed to cash, according to CARE officials, that the project began having good success in attracting both refugee and non-refugee labor. A report by a socio-economic consultant to CARE in 1983 notes that "having cash in hand directly rather than having to convert the sugar in the marketplace is no doubt preferred by the workers. They are saved an extra and burdensome step, plus the possibility of losing 'value' in the vagaries of the sugar market is avoided." Moreover, the FFW commodity--sugar--was already included as one item in the refugee emergency ration basket.

The minimum daily wage in the cash-for-work programs is 30 shillings, roughly twice the value of the WFP food-for-work ration.

CLOSING DEBRIEFING

On May 27, 1984, the team held a debriefing at the National Range Agency in Mogadishu to summarize its conclusions. Present at the meeting were the General Manager of the NRA, Dr. Karani; the Coordinator for CDA Forestry, Mr. Wedderburn; the Director of NRA Rangelands, Dr. Ayaan; and an NRA Field Operations Officer, Mr. Ikar. The following outline was presented and discussed.

A. Pre-Somalia Overview

B. General FFW/Forestry Conclusions

- Ration Size. The FFW ration, which is worth approximately one half of minimum wage, does not attract a quality labor force near urban areas and in rural areas where there are other employment opportunities. Project officers believe very strongly that ration size should be set in-country, after considering the specific situation.
- Self-help Versus Food-as-Wage. In Somalia, successful woodlots have been established by community volunteers on "Tree Day" and maintained by FFW laborers.
- Soil and Water Conservation. Labor-intensive activities such as bunding, trenching, digging reservoirs, and tree planting, supported with FFW, serve as demonstration sites for individual farmers, who should be encouraged and assisted in carrying out similar work.

INTERVIEWS

GDSR Officials

1. Dr. Abdullahi Ahmed Karani, General Manager, NRA
2. M. A. Ikar, Field Operations Officer, NRA
3. Abdullahi Hadulan, Forester, NRA
4. Mahamed A. Jumaale, Director, Forestry Department, NRA
5. Ibrahim Ahmed Ismail, WFP Director of NRA
6. Maio Sheikh Osman, NRA District Officer, Afgoi
7. Sheikh Halow Maio, NRA Assistant District Officer, Afgoi
8. Abdi Hilani, NRA Regional Officer, Shalambood
9. Salad Ahmed Omar, NRA Assistant Regional Officer, Shalambood
10. Ghedi Shegow Ali, Project Manager, NRA Sand Dune Fixation Project, Merka
11. Mazahar Ali Kassimani, Project Technical Advisor, Gedo Community Forestry Project
12. Abdirahim Muse Abshu, Deputy Governor, Burao
13. Abbas Mohamed Adow, Commander of the Militia, Burao
14. Musa Hassan Mohamed, NRA Regional Director, Hargeisa
15. Abdi Abdullahi, NRA Range Officer, Burao
16. Ahmed Jamaa Sarr, NRA Regional Director, Burao
17. Mohamed Muusa Awale, NRA Project Director, Northern Rangelands Project, Burao
18. Abdi Issa, NRA Agronomist, Northern Rangelands Project, Burao
19. Ussuf Abdillahi Hersi, NRA Acting Regional Director, Berbera
20. Mohamed Ussuf Yassein, NRA Rangelands Officer, Berbera
21. Usif Omar Alisow, Regional NRA Accountant, Jowhar
22. Abdullahi Osman Jama, District Officer, Balaad
23. Dr. Ayaan, Rangelands Director, NRA

USG Officials

24. Louis Cohen, Director, USAID
25. Frank Pavich, Chief of Rural Development/Refugee Affairs Division, USAID
26. Isabelle Blanco, Program Assistant, Rural Development/Refugee Affairs, USAID
27. Kim Martinez, Program Manager, USAID
28. Linda Hanson, Assistant FFP Officer, USAID
29. Norris Norvold, Northwest Rural Development/Refugee Affairs, USAID
30. Brenda Young, Northwest Rural Development/Refugee Affairs, USAID

Private Voluntary Organizations

31. Earl Goodyear, Director, CARE/Somalia
32. Jean Downing, Program Assistant, CARE/Somalia
33. Terry Jeggle, Director, Emergency Logistics Unit/CARE

34. Al Edgell, Director, Save the Children
35. Abdurahman Ahmed Ali, Project Assistant, Save the Children
36. Eric Landis, Forester, Inter-Church Response for the Horn of Africa
37. Hank Cauley, Director, Volunteers in Technical Assistance
38. Jim Billings, Experiment in International Living
39. Hamed Hohamud, Representative, Africare
40. Douglas Dolner, Forester, Africare
41. Usif Farah Nur, Project Director, Africare

Others

42. Bob Wedderburn, FAO Forestry Coordinator at NRA
43. Abenezer A. Ngowi, WFP Assistant Project Officer
44. K.B. Raif, Deputy Representative, WFP
45. Oscar Fugalli, WFP Senior Evaluator/Rome
46. Faduma Mohamed, Nurseryworker, Afgoi
47. Shaarifa Osman Hussein, Nurseryworker, Afgoi
48. Aanib Yussuf, Nurseryworker, Afgoi
49. Shari Berenbach, Partnership for Productivity/Washington
50. Obe Okafu, FAO Forester to NRA Northern Rangelands Project, Burao
51. Abow Maio Hussein, Town Mayor, Bulalo
52. Shariff Gudlow Ado, Woodlot Supervisor, Bulalo
53. Hassan Yussuf Osman, Woodlot Supervisor, Bulalo
54. Ibrahim Wayess Idli, Nurseryman, Hargeisa
55. Iman Hashi Hersi, Assistant Nurseryman, Hargeisa
56. Jim Mower, Team Leader, FAO to Northern Rangelands Project
57. Yussuf Musa, Supervisor, Qoita Soil and Water Conservation Project, Burao
58. Yussuf Ismail, forestry District Coordinator, Berbera
59. John Blumgart, Consultant to USAID
60. Mohammed Ali, Nursery Manager, Afgoi
61. Yussuf Aden, Leferuq Plantation FFW Laborer
62. Hassan Saleh Ateyeh, District Forestry Officer, Sheikh
63. Ibrahim Musa Tirir, Assistant District Forestry Officer, Sheikh
64. Artan Osman, Assistant District Commissioner, Sheikh
65. Mohamed Omar Ali, Forest Guard, Gutari Plantations
66. Mohamed Abdullah, Assistant Nursery Manager, Mogadishu

ANNEX 7: LESOTHO

COUNTRY SUMMARY

The PL 480 assessment team visited Lesotho from May 29 to June 9, 1984. During this period of time, the team interviewed 66 individuals representing 19 different organizations and groups. Information from those interviewed, as well as observations from in-country site visits, is included within this country report. The following is a listing of this team's learnings, conclusions, and recommendations drawn from these individual interviews and site visits.

Learnings

- With community-initiated food-for-work (FFW) projects, such as those sponsored by the Ministry of Cooperatives and Rural Development (MINCORUDEV), community motivation and participation can become dependent on food aid.
- When selection of FFW laborers is made by local political authorities, rather than project staff, qualifications such as health and age may not be considered.
- The rotation of FFW laborers every 15 days, to maximize the number of food aid beneficiaries, adversely affects project productivity by not allowing skill development to occur.
- If FFW is seen by program managers as a free resource, its cost effectiveness will likely not be a project design and decision-making consideration.
- It is essential that government forestry agencies, such as the Lesotho Woodlot Project (LWP), work to build counterpart organizations and entrepreneurship at the community-level; few governments in the world have the staff and resources to successfully manage, harvest and market local forest products.

Conclusions

- Despite the claim by critics that Lesotho has become a food aid addict, the country is food deficient:
 - in a good year, it produces 30-40% of its food needs;
 - inadequate nutrition pervades in nearly 30% of all households; and
 - only 13% of its land area is considered arable, of which 2% is lost each year to erosion.
- Food assistance from donors will increase over the coming months due to last year's severe drought, which

reduced the grain harvest to one quarter of normal production levels.

- There is very little tradition of tree planting in Lesotho, and wood, generally, is not available as a fuel commodity.
- In Lesotho, virtually no agroforestry extension efforts to small farmers have been undertaken.
- The Ministry of Agriculture (MOA) selects sites for FFW soil conservation and tree planting activities on the basis of technical surveys and land-use plans; Ministry of Cooperatives and Rural Development (MINCORUDEV) FFW soil conservation projects, on the other hand, are approved and implemented with very little technical planning.
- The newly established Forestry Sector with the MOA will have difficulty operating beyond the capital city for several years, primarily because it lacks qualified technical personnel.
- The MOA's Lesotho Woodlot Project, which is carrying out most of the afforestation in the country, is interested in placing well-trained Peace Corps foresters at the field level to promote rural afforestation.
- CRS/Lesotho is interested in exploring ways to expand the soil conservation program to include a forestry/income generation component.

Recommendations

- A PL 480 community forestry pilot project(s) should be implemented in Lesotho, contingent on the following conditions:
 - that the AID mission is prepared to commit staff time and funding to the initiative;
 - that CRS and/or WFP are prepared to sponsor at least the food-for-work component of the pilot project(s);
 - that the MOA and/or MINCORUDEV commit staff and resources to the initiative; and
 - that Peace Corps/Lesotho agree to commit Peace Corps Volunteers to the initiative.
- If these conditions are met, the pilot project(s) should be a collaborative initiative among the following entities:
 - the AID mission;
 - Peace Corps/Lesotho;

- the Ministry of Agriculture;
- the Ministry of Cooperatives and Rural Development;
- CRS; and
- WFP.

° If the above entities agree to collaborate on the community forestry initiative, the following issues will need to be addressed:

- technical site considerations;
- socio-economic site considerations;
- organization and management, i.e. role clarification; and
- scale of pilot sites, including staffing and funding requirements.

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COUNTRY ASSESSMENT

A. The Food Situation

Considering that Lesotho produces only 30-40% of its food needs, it is hardly surprising that malnutrition pervades in nearly 30% of all households, according to official reports.

This year, officials say, this percentage will be even greater. In 1983, severe drought reduced the grain harvest to 50,000 MT, a quarter of normal production levels, which usually average 215,000 MT per year. The Prime Minister declared a national emergency in March (1984), in response to food shortages. Food imports, consequently, have been exceptionally high, particularly from neighboring South Africa. Commercial imports and donor food aid have amounted to 40% and 20% respectively of total food stores. At the time of the team's visit (June 1984), additional emergency aid from donors was expected to increase in the second half of 1984.

B. Food Aid

"Food aid distribution has a very long history in this country," the director of the GOL Food Management Unit (FMU) remarked. Imports of donated food began in colonial times as relief assistance; now, some 20-25 years later, it would not be difficult to argue that food aid has become institutionalized in Lesotho. As one visiting journalist recently put it, the high and sustained level of food aid may have rendered Lesotho an "aid addict."

Nineteen years ago, the first school feeding programs were established in Lesotho, followed by food-for-work projects, which included road construction and conservation activities. At that time, since the food commodities were essentially seen as a nutritional intervention, or as relief aid, impact studies were rarely undertaken. In the past several years, however, the major donors--EEC, USAID and WFP--have begun to insist that their food resources help achieve longer-term developmental objectives.

Yet readjusting peoples' expectations of food aid can be difficult, the director of the Food Management Unit explained. "After so many years it is extremely difficult to get the country out of a relief mentality," he said. "Everybody sees food aid as a dole-out, a welfare scheme."

FFW, MCH nutrition centers, school feeding programs, and emergency distributions, when taken as a whole, feed practically one of every two Lesotho nationals. Moreover, it was reported as a common occurrence that some families are receiving two or more forms of food assistance; the mother, for example, may be receiving family food rations from a MCH clinic, and the father

could be involved in a FFW project. A woman in one village said she received MCH rations, FFW rations and emergency feeding rations.

According to the director of CARE in Lesotho, the amount of per capita food assistance in the country is excessive. Food in such amounts, he said, "can work against your developmental objectives. It becomes harder and harder to engage people in developmental activities; they resist. Then along come more donors, all vying for the recipients and the programs, pushing their food, even forcing it in. I think it is dangerous; I really question the wisdom of such large quantities of food aid."

Others spoke of the erosion of the community self-help spirit; institutionalized food hand-outs, they say, jeopardize community initiative, and may even prove counterproductive to project attempts to foster community participation. One Peace Corps Volunteer overseeing a FFW community project described himself as having a Santa Claus image. "Pretty soon people just look at you as the one who brings everything, the one who has the hand-outs."

Overall responsibility for food aid programs in Lesotho rests with the Food Management Unit (FMU) which was established in 1978 within the Cabinet Office. In its central coordinating role, the FMU receives and processes all requests from the various ministries for food aid support to their programs. Its specific functions include the following:

- ° the administration of 10 district warehouses and 41 stores and sub-stores throughout the country for CRS and WFP commodities;
- ° the institution of management systems, such as work tickets for attendance verification, and quarterly and bi-annual project achievement reports;
- ° the issuance of a circular at the beginning of each calendar quarter, listing FFW project sites throughout the country--with the numbers of workers allocated to each; and
- ° the internal transport of all commodities, as well as end use accounting.

The FMU is currently collaborating with USAID to produce a "FFW Action Plan," which will recommend specific ways to strengthen the Unit's management of the FFW program and assure that greater developmental impact will occur. Steps that have been taken or proposed in this direction include:

- ° developing a baseline descriptive inventory of all FFW sites;
- ° reducing numbers of FFW recipients;

- formulating precise work plans;
- establishing work norms; and
- recording statistical data on physical achievements.

The World Food Programme and Catholic Relief Services are the two intermediary agencies in Lesotho receiving PL 480 Title II commodities, USAID's only PL 480 program in Lesotho. A Title II Section 206 program, in which commodities are monetized, is being considered to provide support funding to CRS--for tools, small equipment and storage facilities--and to the proposed \$3.2 million GOL/USAID LAPIS Project (Lesotho Agricultural Production and Institutional Support).

C. The Forestry Situation

The Kingdom of Lesotho, which is completely surrounded by the Republic of South Africa, has a land area of 30,344 km². The country is mountainous, with only 13% of its total area marginally suited to agriculture. Although there are 27 native tree and shrub species, none cover extensive areas; most of the natural ground cover in the country is native grasses.

Interest in the afforestation potential in Lesotho has grown in recent years, partly as a result of the activities of the Lesotho Woodlot Project (LWP). In 1983, a forestry section was established in the Soil and Water Conservation Division of the Ministry of Agriculture (MOA). Nurseries established by the British prior to independence have been rehabilitated, and additional small nurseries have been started in response to local interest, all using WFP or CRS food aid labor.

Most of the forest plantations that have been established in Lesotho have been done through the LWP. These plantations are located principally in the lowlands and foothills of western Lesotho, with a total annual wood production estimated at 93,000 cubic meters (Potter/FAO). The species usually planted are Pinus radiata, Eucalyptus robusta and Eucalyptus rubida. Growth is estimated to be between 7m³/hectare and 13m³/hectare, depending on the site. The best growth rates, however, have occurred on sites where the seedlings have been fertilized. In general, the soils in Lesotho are poor in nitrogen.

Areas along the eastern border of Lesotho, particularly around Qacha's Nek have been identified as suitable for major afforestation efforts. A feasibility study for a 2,000 ha plantation is underway. Some controversy, however, has been sparked by this study, because of the large number of farmers that the plantation would displace.

Nursery and tree planting activities are also occurring throughout the country as part of small-scale soil conservation projects. Both the Ministry of Agriculture and the Ministry of Cooperatives and Rural Development are implementing soil conservation projects, and both ministries are using WFP and CRS food

aid laborers to carry out project activities. The objective of the majority of these projects is the stabilization of eroded gullies, or "dongas", through the construction of stone silt traps. Once the dongas are silted in, they are planted with trees, mostly popular, which is the preferred fuelwood.

Wood demand in Lesotho has been estimated in a recent German energy report at 400,000 cubic meters per year, and in a recent FAO report at 900,000 cubic meters per year. The former figure is probably closer to the reality, given that energy demand in Lesotho is largely being met with dung, shrubs and imported coal and kerosine.

To demonstrate to the population the value of trees and their possible uses, the MOA plans to field a portable log processing unit. Dead and over age trees will be felled, limbs cut for firewood, and the logs sawn into timber and lumber for local use. The unit will travel the country working wherever trees ready for felling are available.

D. Forestry Issues and Problems

The major forestry related problems in Lesotho are soil erosion, overgrazing, land tenure and the lack of technical personnel and resources.

Soil Erosion. Flying over Lesotho, one of the most outstanding land features are the dongas that cut across the land surface. It is estimated that there is somewhere between 20,000 and 30,000 dongas in the country. Although the GOL is attempting to stabilize many of these gullies, an estimated 2% of the arable land is lost to soil erosion each year, primarily through gully erosion.

Overgrazing. In Lesotho, there has been serious deterioration of pasture lands caused by overgrazing; the number of livestock in the country exceeds the carrying capacity of the grazing lands. The net result is an increase in eroded areas and the lowering of soil productivity.

Control of overgrazing is difficult because fencing is not allowed under the traditional system of grazing. Even woodlots are not sacred. Herdboys are often blamed for cutting woodlot fences during the night to graze their animals. It is a problem that the authorities are having a difficult time controlling. "The best herdboys," we were told, "are the ones with the fattest animals. In times of drought, even the villagers look the other way when fences are cut."

Land Tenure. With the exception of urban areas, there is no private ownership of land in Lesotho. Since land is not owned, people are reluctant to make land improvements and long-term development investments--like planting trees--because they may never benefit from them.

Land use rights are allocated to people by local land committees, as established by the 1979 Land Act. One of the basic objectives of the 1979 act is to provide a mechanism by which existing land allocations could be converted to leaseholds. Such leaseholds, officials explained, will provide farmers security of tenure, as well as an 'asset' which could be used as collateral for land improvement loans. It is expected, however, that full implementation of the Land Act will require a substantial period of time. Surveying and preparing the legal description required, officials say, is itself a time consuming process; yet an even greater hinderance cited is the unwillingness of the chiefs, who have had land allocation powers, to establish local land committees to which the allocation powers have been transferred.

The average size of a plot of land allocated to families is 4.9 acres. According to officials, however, there are growing numbers of landless people, who for one reason or another (i.e. political) have been unsuccessful in their request for land. Generally, those with allocated land continue to have use of it year after year.

Lack of Technical Personnel and Resources. There is only one Masotho degreed forester in the MOA's Lesotho Woodlot Project. The project director and the other project foresters are all expatriates. Even though there are several Basotho studying forestry overseas, and a few technical forestry graduates from the Lesotho Agricultural College in Roma, most officials agree that the MOA will have difficulty staffing its new forestry sector beyond the capital city for several years.

Technical resource support to soil conservation and tree planting activities is also a major problem faced by the GOL, particularly by the Ministry of Cooperatives and Rural Development (MINCORUDEV). Technical assistance and material assistance has been so lacking on MINCORUDEV food-for-work projects, critics claim, that the projects are no more than "make work" schemes: they are serving political objectives, rather than developmental ones. MINCORUDEV-sponsored FFW projects, it should be noted, are community-initiated; they are approved for ministry sponsorship by the Cabinet Office.

At one site visited, the lack of planning was evident. Silt traps were constructed with cut sandstone blocks, and backfilled with 4" minus gravel. In most cases, the traps were too close together. Moreover, small reservoirs rather than silt traps would have been a better alternative at some sites. Reservoirs, in providing irrigation to gardens, have an income generation potential; silt traps do not. The ministry extension agent overseeing the project was responsible, she said, for 28 other projects.

The cost effectiveness of MINCORUDEV food-for-work projects has also become an issue. Unlike MOA soil conservation food-for-work projects, where bulldozers are used for most of the major

earth moving, MINCORUDEV has no heavy equipment. It takes weeks for MINCORUDEV food-for-work laborers to accomplish what a MOA bulldozer can do in one afternoon.

Because of these criticisms, and a recent evaluation, CRS is seriously considering withdrawing its food-for-work support from MINCORUDEV projects. MINCORUDEV has 130 FFW/soil conservation projects in 6 districts; the Ministry of Agriculture has 31 FFW/soil conservation sites. WFP and CRS, through the Food Management Unit, sponsor projects in both ministries.

PROGRAMS, PROJECTS AND CASE STUDIES

A. The World Food Programme

The World Food Programme has been operational in Lesotho for almost twenty years. It currently sponsors five programs.

- ° Project #352, Soil and Water Conservation and Road Improvement. The sixth phase of this project began in April 1984, and will continue for three years. The project provides the Ministry of Agriculture and the Ministry of Cooperatives and Rural Development with a total of 5,600 casual laborers, primarily engaged in soil conservation activities, woodlot establishment, forestry plantation development and the construction of water reservoirs, roads and footbridges.
- ° Project #544, Food Assistance to Post-Primary Educational and Training Institutions. The third phase of this project began in November 1983, and will continue through November 1986. Approximately 32,000 people benefit from the project each year.
- ° Project #230, Primary School Feeding. First implemented in 1965, this project each year benefits 280,000 children in 110 schools. The Save the Children Fund oversees the program's logistical and administrative operations.
- ° Project #24010, Mountain Emergency Food Reserve. This project was designed to help the GOL establish a grain reserve in the mountain areas to offset food shortages. Some 5,000 MT of maize are held in stores and silos throughout the country.
- ° Project #1335, Emergency Food Aid for Drought-Effectuated Persons. This project will assist 200,000 people with over 6,000 MT of wheat flour and pulses.

Total cost of these projects amounts to over US \$600 million, which includes external transport costs as well as approximately 54,000 MT of food commodities over a 3 year period. Additionally, WFP supports these projects with a \$1.8 million cash subsidy for internal transport, storage and handling.

Case Study - The Lesotho Woodlot Project

The Lesotho Woodlot Project (LWP), in operation since 1973, is establishing fuelwood plantations of principally pine and eucalyptus at the rate of 400 hectares per year. A total of 4,800 hectares at 250 woodlot sites have been established, all in three districts of the western lowlands and foothills. Woodlot

sites range from 2 to 400 hectares in size. Nearly 200 of these sites have been gazetted as forest reserves. An additional 1,100 hectares are projected for completion in 1984.

The project is financed by the British Overseas Development Agency (50%), the Anglo de Beers Forest Service Ltd. (30%), and the GOL (20%). The World Food Programme Project #352 supports the project's labor force. The project is due to terminate next year after twelve years of activity, although a two to three year extension is envisioned.

According to the director, the project's objectives are as follows:

- ° the establishment of woodlots throughout the country for production of fuel and small building materials (project management estimates that 132,000 has will need to be extant before the year 2,000 if the country's needs are to be met);
- ° the provision of seedlings for GOL soil conservation activities;
- ° the development of woodlot and nursery planning and management capability at the national and community level; and
- ° the training of Lesotho nationals.

While the project is recognized as having achieved good results, it has nonetheless received a cross-fire of criticism in recent years. "The LWP has been the most successful project in Lesotho," one senior official said, "but then, the way hasn't been easy for them: the project's land acquisition policy has not won it many friends in the rural areas, and its track record on community participation in project activities has been a poor one."

WFP commodities remunerate laborers in the project's 6 nurseries, 250 plantations and 12 experimental stations. "WFP commodities have been a key factor in most of our accomplishments," the project director said. "Food aid laborers have carried out the bulk of the project's labor-intensive work," he added. Approximately 500 FFW laborers are engaged by the project at any given time.

FFW laborers are selected by the Village Development Committees, with the village chief usually having the final say. Although the system is designed to rotate as many beneficiaries as possible into the 16 work periods per year, the chiefs often give preferential treatment to some villagers, according to project staff, while others are rarely, if ever, selected. As one project forester said, "The selection of FFW laborers is really manipulated by local politics. And we have no voice in the

matter. Mostly, old women are selected. Actually," he added, "I prefer women. They are the best workers. We get women that are too old, though."

The rotation system has also been controversial. "With this system," the research forester said, "there is just no point in training the FFW laborers; they're gone in three weeks anyway. FFW laborers would be as good as cash-paid laborers, if we could select them ourselves and train them." The director of the Food Management Unit agreed. "The system should be changed," he said, "to avoid the constant training of new workers. It adversely affects productivity." A senior ministry official disagreed. "The rotation system allows for flexibility: for example, people are freed up during harvest time to tend to their agricultural work."

Nurseries. The largest LWP nursery is located on the outskirts of Maseru. Although it has a production capacity of 1 million seedlings, only 700,000 seedlings are being produced at this time.

On the day of the team's visit, 14 FFW laborers--all women--were filling sleeves at a piece work rate of 1,000 sleeves per day. Before the piece work rates were established, FFW laborers averaged 300-400 sleeves per day. The value of the daily ration received by the workers is equivalent to 2.10 Rand. Cash-paid nursery workers, on the other hand, receive 3.40 Rand per day. Project staff noted that the cash-paid laborers (also women) "were the best workers."

Species observed at the nursery included Pinus radiata, Pinus patula, Pinus halepensis, Eucalyptus meartherii, Eucalyptus Rubida, and Cedrus deodara.

In producing Pinus radiata seedlings, locally collected seeds are sown in 6 cm diameter plastic sleeves cut to the length of 11 cm. Sowing is done at the rate of 1 1/3 seeds per sleeve (2 seeds every third sleeve). The one extra seedling in each third sleeve is transplanted to a sleeve where the seed did not germinate. Seedlings are watered "frequently several times a day", and 5-0-2 fertilizer is applied twice a week. Dampening off disease, which has been a problem, is controlled by an application of thiram-pomsol. All seedlings are grown under netting, not only to give them shade and to protect them from the wind, but also to protect them from hail damage. The seedlings are ready for outplanting in 4 to 6 months; there is no "hardening off" period. Before shipment to planting sites, the seedlings are top pruned to reduce evapotranspiration and to discourage animal browsing. This system is also used with Pinus patula, Pinus halepensis and Cedrus deodora.

Production of eucalyptus seedlings are done in a similar manner, except that the seeds are first germinated in styro-foam trays filled with a milled pine bark medium. Once germinated,

the seedlings are transplanted to the plastic sleeves. The eucalyptus seedlings are produced twice a year; they take 8 to 9 weeks to produce.

Experiments are being carried out at the nursery in an attempt to determine the best potting mix, the effects of water pH on seedlings, and the effects of different fertilizers and their application on seedling growth. Provenance tests of eucalyptus are also being carried out.

Plantations. In establishing woodlots, the project prefers sites of at least 10 hectares in size, and no further than 1-2 kms from the village. "Our policy," the director explained, "has been to go to the chiefs and talk to them. If their decision is to have a woodlot, we get them to suggest a site. We may suggest another site, however, if their suggestion is not appropriate for one reason or another." Once a site is selected, an agreement is signed by the project and the local and principle chiefs, and then submitted to MOA for approval. Upon approval, the agreement goes to the King, who designates the area as a forest reserve.

Responsibility for managing the country's woodlots, as stated in the GOL Forest Act, rests with LWP. According to the director, "The villagers do not participate in the management of the woodlots; however, we try to get our foresters to deal with them. I know we are criticized on this point," he added, "but in the FAO woodlot scheme, woodlots were handed back to the villages to manage, and there are not many left now."

The LWP is also responsible for harvesting and marketing the forest products from the woodlots. Eighty percent of the proceeds of these sales go into the GOL afforestation fund, and the remaining 20% go into an account for each village. No funds have been turned over to villages as yet. In the near future, however, according to the project's research forester, LWP will be sending out a statement to all villages listing out the total value of their 20% share.

With the exception of firewood that is sold to the local population at the below market price of 50¢ per 30 kg headload (which they harvest themselves), all harvesting and marketing of forest products is done by the project internally. "We would like to see Basotho contractors doing the harvesting and marketing," a project forester said, "but there appears to be little interest on their part." As another forester pointed out, "It's just not realistic to think that LWP can manage the woodlots, and also harvest and market the products; there is not a forest service in the world that is capable of effectively doing that."

One 400 hectare plantation that the team visited is located on the Lescheboro plateau, about 12 km from Maseru. The fenced plantation is actually a composite of many small plantations of eucalyptus and pine. Site preparation is done by first clearing

the land, if needed; plowing contour furrows every 3 meters; and pitting every 2 meters along the plowed furrows. During the rainy season, the seedlings are "deep" planted--to a depth of about 1 inch above the root collar--to help protect the seedlings from frost. The seedlings are fertilized with a 2-3-0 fertilizer at the rate of 25 kg/hectare. Weeding continues until the seedlings have reached a height where they would not be adversely affected by weed competition.

Of the species planted, Eucalyptus rubida, E. macarthuri, and Pinus radiata have shown the best growth--over 10m³ per year per hectare. E. viminalis and E. camuldulensis showed good initial results, but later had problems with insect and disease attacks. They are now being replaced with other species. Total cost of afforestation for the LWP woodlots has been approximately U.S. \$800 per hectare.

Most of the plantation activities, according to project staff, are done with FFW laborers from a village 1 km away. "FFW laborers are good at most tasks," the project's research forester said, "except tree planting. We need 10 times as many FFW laborers as cash-paid workers to plant a hectare; and not only that, but the quality of the planting is poor." Planting rates for a FFW laborer, he said, are 100 trees per day. "When you take into account the management, supervision, and especially the productivity rate," he concluded, "food aid labor is incredibly expensive."

This particular plantation site is also used for experimental trials. Spacing trials and trials using various planting techniques are currently being undertaken. Thus far, the latter trial has illustrated that planting by plowing, pitting and fertilizing can produce eight times more height growth than trees planted only by pitting.

Issues and Problems

Community participation. One report critical of the LWP claims: "There is virtually no community or village participation in the decision-making process of the project, other than the agreement of chiefs and community members to allocate a portion of land for the woodlot site. The project puts up fences, uses food-for-work labor to plant, manages, and is considering harvesting the woodlots with virtually no community input."

Yet, as one LWP District Officer said: "We rely on the communities to guard and protect the woodlots; if there wasn't this type of community participation, there just wouldn't be any woodlots at all." He further elaborated, "The communities had no participation in plantations established under colonial rule, so after independence the communities just went ahead and cut the trees with no regard or thought to replacing them. We really would like to see more community participation," he said.

"However, there is no doubt that we believe that a forester should be the woodlot manager; and under the Forest Act, we are responsible for management."

"The LWP might be criticized on the issue of community participation," the research forester said, "but the fact is communities have offered us more land for establishing plantations than we can cope with." Once the villages receive the statements of accrued revenues from their 20% share of sales of forest products, he speculated, they will assume a much more active role in managing and protecting their woodlot.

Lack of interest by individuals in developing lands for forestal uses, however, has mystified the project. "Through radio advertisements over the last four years," one project official said, "we have been offering to appraise an individual's land, sell him seedlings at 25% of cost, prepare the site with mechanized equipment, and give him technical assistance on tree planting--to supply everything, really--but we've had only a few inquiries, and no takers in all these years." He concluded that the problem is most certainly land tenure.

The director of the LWP, when asked if Peace Corps Volunteers could benefit the project by promoting woodlot establishment and agroforestry extension in rural areas, said: "We have had Peace Corps Volunteers in the past, and they have worked out fine. There is definitely a need for Peace Corps foresters at the field level."

Management. Critics of the LWP point to what they call the project's "top-down" management style, and challenge the project to begin moving some of its management activities outside the capital. There is no concrete plan, these critics claim, for turning the woodlots over to local organizations. "We are top-down in our management," explained one senior LWP official. "You have to be in this country."

Expense. Critics accuse the LWP of having much too high an operating cost. A GOL ministry official complained that the LWP nursery in Maseru charges 20¢ a seedling when selling to outside individuals and groups. At this same nursery, it was noted that the project uses expensive styro-foam containers and shading material, and that it supports a fleet of 27 trucks, pick-ups, tractors and lorries.

But much of the project's budget, explained the LWP research officer, goes into training--of some 40 Basotho preparing for staff positions in the proposed MOA Forestry Division. "How can you put a dollar value to the training of a forestry cadre of nationals? Sure, it's expensive," he said. "In the accounting of LWP," he added, "many unrelated expenses are charged against seedling production. The 20¢ from the sale of a seedling could be used for training costs or administrative and management costs."

B. Catholic Relief Services

CRS has been active in Lesotho for over 18 years. It supports 69 mother/child nutrition clinics, and over 200 FFW schemes implemented through the Ministry of Agriculture and the Ministry of Cooperatives and Rural Development. Per annum recipient levels are as follows:

<u>Program</u>	<u>Metric Tons</u>	<u>Recipients</u>
Mother/Child Health	9,600	144,000
FFW Rural Works	<u>6,000</u>	<u>57,000</u>
Totals:	15,600	201,000

CRS food-for-work activities are categorized in three ways:

- 150 community conservation projects which include irrigation, silt-trap construction, dam construction (and spillway repair), and catchment protection;
- 40 road improvement/construction projects; and
- 20 "special" projects through community organizations and parishes for such undertakings as airstrips, fish ponds and roads.

Although CRS sponsors no FFW/forestry projects at this time, one CRS official said that they would like to take a closer look at their soil conservation projects to see if they "could integrate some soil of forestry scheme that would include income generation."

The CRS ration basket consists of cornmeal, flour, and vegetable oil; it is worth approximately 26 Rand (\$20) per 15 day work period. This ration is supplemented in MINCORUDEV projects with 50¢/day provided by the GOL, which by most reports, makes these projects more desirable to FFW laborers than MOA projects. Moreover, FFW projects sponsored by CRS are preferred by laborers over WFP sponsored projects, ministry officials said, because the CRS ration contains flour.

CRS was awarded an Outreach Grant in May 1983 to enhance the management of its food operations and to improve its overall efficiency. The \$900,000 grant is scheduled for termination in May 1987.

Case Study - The Qacha's Nek Nursery

The tree nursery at Qacha's Nek, the largest nursery in the country developed for conservation purposes, was established in

1973 by the Lesotho Woodlot Project. The site was terraced and fenced, and a reservoir was built nearby. One year later, however, the LWP abandoned the site.

In 1983, the Ministry of Agriculture assigned an experienced nurseryman and a second year Peace Corps forester (the only Peace Corps forester in Lesotho) to Qacha's Nek to reactivate the nursery. To do the job, they were given hand tools valued at 1,000 Rands (US \$800), and ten CRS-sponsored FFW laborers.

Their goal, the PCV said, was "to show people that it can be cheap to run a do-it-yourself nursery; that as a zero-budget endeavor, it would serve as a demonstration for similar nurseries." Beer cans are used for seedling containers, and the original fence interwoven with branches has proven to be an effective animal deterrent.

The one hectare nursery is comprised of 13 terraces, each 100 feet by 3 feet. Pine, popular, willow and oak are the principal seedlings grown; the Peace Corps forester said he hopes to more than double the production next year, from 20,000 to 50,000 seedlings. "People prefer pine and popular," the MOA nurseryman said; "they don't like eucalyptus, because grass won't grow under it and because it's too hard to cut."

The ten FFW laborers, all women, work from 8 a.m. to 1 p.m. Their tasks include watering, weeding, cutting and filling beer tins with soil, and collecting seed (although it is the PCV who climbs the trees: "the ladies aren't tree climbers," he explained). At the request of the PCV, five of the workers were recently appointed as permanent employees of the nursery by the Village Development Committee (VDC). The other five laborers will continue to be hired on a rotational basis. This arrangement, the PCV believed, would allow for better continuity, skill development and management.

One of the permanent workers serves as 'secretary' for the other FFW laborers. She keeps attendance records, and assists with the food ration distribution. A ministry soil conservation district officer is responsible for the delivery and distribution of the food commodities.

Seedlings grown in the Qacha's Nek nursery serve three purposes: plantings for seven MOA soil conservation sites; amenity plantings for individual landholders; and community plantings on National Tree Day. Approximately fifty trees a week are given away free to individuals, but since there is little extension effort to accompany this component, survival is low. The Peace Corps forester noted that his PCV replacement (due in August 1984) should give priority to extension and to environmental education.

The lack of an extension program is not the only reason for the low survival rates of the outplanted seedlings, according to

the MOA nurseryman. He cites the nursery's seedling give away policy as partly to blame. His brother-in-law, he said, took home a dozen free trees on National Tree Day, left them untended in a corner of his compound, and never did get around to planting them. "If he had had to buy them," the nurseryman explained, "he would have valued them: I think seedlings should be sold."

Case Study - The Thabang Sefali Reservoir

The PCV at Thabang Sefali has been working for almost two years with the Young Farmers, a group similar to the 4-H. Their current project, a reservoir to supply water to a community garden, was begun in January, 1984.

Funds for the project were obtained through the efforts of the PCV, and included US \$2,689 from USAID and some monies from a R9,841 grant from the Unitarian Service Commission of Canada (USCC) for this project and similar projects in the district. "It took us almost two years to get organized and started on the project," the PCV said. He added, "It is not easy--donors are reluctant unless they see that there are other donors involved."

The "self-help" project is being carried out by the PCV and people from the community, most of whom are parents of the Young Farmers. They receive CRS food rations, plus 50¢ a day for the work, from the Ministry of Cooperatives and Rural Development.

The principal objective of the project is to construct an earthen dike across the lowest point of a gently sloping (3-5%) area that drains approximately 50 hectares. The dike, once completed, will be about 60 feet long and 3-5 meters high. The reservoir formed by the dike will be approximately 5 meters deep, and will have a holding capacity of 1,500 cubic meters of water, sufficient to irrigate the half hectare of garden that has been fenced on the downhill side of the dike. There is a drain pipe that runs under the dike and empties into cemented "dipping" ponds in the garden out of which the water will be dipped and carried to vegetable beds. Once the project is completed, the Young Farmers will plant and sell vegetables to finance other projects. Some vegetables will also go to families of the Young Farmers.

The work is being done by a group of 25 people--9 men and 16 women at the time of the site visit--with hand tools supplied by the Ministry of Cooperatives and Rural Development. The men do most of the work with the picks and shovels; the women do most of the transporting of the dirt in wheelbarrows. Once the dirt is transported up onto the dike and dumped, some of the older women spread the dirt out along the face of the dike.

The 25 laborers receive the equivalent of 20 days' rations from CRS for working 5 hours a day--including a 1/2 hour break--for a 15 day period. Rations are distributed at the end of each 15 day period, and in theory, the laborers are rotated so that

everyone in the community gets a chance to work. However, some of the laborers continue on working successive periods. The food comes from the government storehouse in Mafeteng, and the laborers pay for its transportation by each contributing R1.00 for each period worked. The food is stored in a locked metal storehouse that belongs to CRS (they also have a MCH clinic in the village); the food is shipped out in large quantities, enough to cover up to 5 working periods.

The foreman of the project stated that the food ration size was insufficient. "There should be more cornmeal," he said. "And the men should be paid money for their work," he added. When asked if the parents of the Young Farmers would be working on the project if they were not receiving food, he simply answered, "No, they wouldn't."

Another PCV who had worked on several similar projects was visiting the site and commented, "Using food-for-work manual labor is probably not cost effective--you could get the whole dike and reservoir done in 2 days with a bulldozer at the cost of only R2,000." The cost of the food alone for the nine month period will probably be over R9,000.

The project is to be completed in September, in time for the planting season. The PCV plans on extending several months to see the project to completion.

CLOSING DEBRIEFING

On June 9, 1984, to conclude the ten day mission in Lesotho, the team held a debriefing for members of the USAID mission and Peace Corps. The following outline was presented and discussed.

A. Observations

Fuel:

- In rural mountain areas, dung and the shalal-hala bush are the primary sources of fuel.
- In urban centers and the lowlands, coal and kerosene are the most commonly used fuel sources.
- Wood is used primarily to start up fires; generally, though, it is not available as a fuel commodity.
- Millions are spent on imports of forest products.

Trees:

- There is very little tradition of tree-planting in Lesotho.
- Virtually no forestry extension efforts have been undertaken.
- Planting takes place on individual land (on farm land); and on community land--on rocky slopes, cliffs and donga gullies.
- FFW soil conservation and tree-planting activities by the Ministry of Cooperatives and Rural Development soil conservation program tend to be a make work for FFW situation.

Food Aid:

- Only 13% of Lesotho's land is considered arable; it is a food deficient country.
- One out of every two Basotho get food assistance.
- There is little abuse of the distribution.

B. Nursery and Wood Products, Inc.: A Village Corporation

- The goals of this FFW/forestry model would be to plant trees, to make money, and to strengthen village-level management capability.
- The components of the model would be as follows:
 1. A Board, composed of three to five members of the community (e.g., the town mayor, community leaders, the extensionist).
 2. A nursery, with the objectives to provide seedlings for communal tree planting; to sell wood and

fruit tree seedlings to individuals; and to sell vegetables, flowers, and houseplants. It would operate with five to ten FFW full-time laborers, paid with 50% cash, 50% food rations as well as five to ten seasonal FFW laborers, paid with food commodities only.

3. Tree planting on communal land, with the objectives to plant and harvest trees in dongas, school yards, roadside areas, and other land not used for agriculture. It would be run by five to ten full-time FFW laborers, paid with 50% cash, 50% food; five to ten seasonal FFW laborers; and volunteers from the community who would assist on a self-help basis on Tree Day, and might include students, community groups and so forth.

- Two Peace Corps Volunteers are envisioned for the model (if HCNs are unavailable)

1. A PCV forester, who would liaise with the government ministry, and who would carry out the following functions:

- o nursery management;
- o wood management;
- o skill training to full-time FFW staff;
- o extension of tree planting to private farmers/schools; and
- o secondary projects within the nurseries and forests (e.g., beekeeping).

2. A PCV small business advisor who would work with more than one "village corporation" on the following:

- o training--standard operating procedures, record keeping, application for donor assistance;
- o marketing;
- o evaluation; and
- o liaising with government ministries.

These two PCV positions would eventually be filled by nationals. Trained FFW laborers from within the nursery and forest schemes would also eventually take over some supervisory and managerial responsibilities. It is further envisaged that a project manager, hired to direct several or all of the "corporations" within a country, would be necessary.

INTERVIEWS

The following individuals in Lesotho contributed to this report.

GOL Officials

1. Mrs. Mothepu, Conservationist, National Parks, MOA/M
2. Konesoang Motlomelo, Rural Development Officer, MINCORUDEV
3. Helen Tsoeu, Assistant Conservation Officer, MINCORUDEV
4. E.T. Lethole, Conservation Officer, MINCORUDEV
5. G.F. Masoabi, Food Aid Manager, MOA/M
6. Philip Soko, Assistant Food Aid Manager, MOA/M
7. Lerothole Qhobela, Conservation Forester, MOA/M
8. Wesley Mochochoko, MOA/M
9. M.N. Nkalai, Acting Chief Conservation Forester, MOA/M
10. M. Masero, Chief Conservation Officer, MOA/M
11. M. Ltele, Civil Engineer, MOA/M
12. M. Khasoane, Conservation Officer, MOA/M, Gidione Area
13. L.M. Khalala, Forester, MOA/M, Moriga Area
14. Putsoame Mare, District Agricultural Officers, MOA/M, Qacha's Nek
15. Rangoako Phoku, Extensionist, MOA/M, Sekamerg Aa Bagomi
16. Matthew Cabisu, Nursery Foreman, Ministry of Livestock, Qacha's Nek
17. Holdbrook Arthur, Director, Food Management Unit, Cabinet Office

USG Officials

18. Edna Boorady, Director, USAID
19. Tom Freidkin, Deputy Director, USAID
20. Barry Hill, ADO/FFP Officer, USAID
21. Jim Dunn, Soil Conservation Range Project Manager/Assistant ADO, USAID
22. Wally Fausch, Conservation Planner, USAID
23. Barry Freeman, Chief of Party for Land Conservation Program, USAID
24. Elliot Makhachane, Agricultural and PL 480 Assistant, USAID
25. Mimi Austin, Peace Corps Director
26. Tom Osborn, Associate Peace Corps Director

Private Voluntary Organization

27. Tom Mulhearn, Country Director, CRS
28. Johannes Hoffman, Outreach Manager, Rural Works Consultant, CRS
29. Ed Bucetti, Outgoing Director, CARE
30. Dan Roth, Director, CARE
31. Aubrey Springs, Volunteer, World University Service of Canada

Other

32. Adel Jalloul, Representative, World Food Programme
33. M. Murphy, Program Development Consultant to WFP, Rome
34. Peter W.T. Henry, General Manager, Lesotho Woodlot Project
35. Keith Richardson, Forestry Research Officer, Lesotho Woodlot Project
36. Tony Keating, South District Officer, Lesotho Woodlot Project
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