

AN EVALUATION OF THE POTENTIAL FOR

PEACE CORPS/AID/HOST COUNTRY

COOPERATION IN

SOCIAL FORESTRY PROJECTS

J A M A I C A

prepared by

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EXECUTIVE SUMMARY

J A M A I C A P A S A R E P O R T

I. HOST COUNTRY GOVERNMENT/MINISTRIES

In an effort to increase the volume of forestry products, the Jamaican government has created the Forest Industries Development Company (FIDCO). The Forest Department, the Forest Research Office and the Soil Conservation Division are other government institutions involved in forestry. At present, government efforts to improve forest management and appropriate land use are fragmented.

II. PEACE CORPS

Peace Corps/Jamaica has had limited involvement in forestry projects. PCVs have worked in the Forestry Department and with an AID-funded integrated rural development project (IRD). PC/Jamaica is interested in developing a program in environmental education and research. The Soil Conservation Service would support PC efforts to improve extension techniques and training.

III. AID

Although AID has received increased funding since the recent election in Jamaica, no specific resources have been directed to forestry or natural resource projects. Currently, AID is implementing an integrated rural development project in two watersheds. While the Jamaican Soil Conservation Service has been satisfied with the results, AID is hesitant to become directly involved in similar projects in the future. PCVs have been involved in the AID/IRD project and an AID fisheries project. AID staff, which includes a forester, were supportive of increased use of PCVs in AID projects, providing that the PCVs receive

first-rate training.

IV. FAO

FAO has submitted a project proposal for community forestry to the Jamaican Government and anticipates approval in the near future. FAO is interested in working with both AID and Peace Corps in this project.

V. TRAINING

PC/Jamaica and some Jamaican agencies have utilized and are supportive of skill-trained volunteers. Because there is no language barrier, in-service training that includes counterparts could be an effective method of increasing both PCV and host country staff effectiveness. There are limited but adequate training facilities in country.

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LIST OF ACRONYMS

ABD	All But Dissertation
AID	US Agency for International Development
AID/J	AID/Jamaica
FAO	U.N. Food and Agricultural Organization
FIDCO	Forest Industries Development Company
IDB	Inter-American Development Bank
IRDP	Integrated Rural Development Project
ODA	Overseas Development Agency
PASA	Participating Agencies Service Agreement
PC	Peace Corps
PCD	Peace Corps Director
PCV	Peace Corps Volunteer
USDA	United States Department of Agriculture

INTRODUCTION

This report has been prepared for the Forestry Sector in the Office of Programming and Training Coordination of Peace Corps in conjunction with the PC/AID Forestry PASA (#936-5519). The report presents a brief overview of the institutions and activities concerned with forestry and natural resource projects in Jamaica. The information will assist Peace Corps and AID Washington staff in designing and implementing future forestry PASA activities through a better understanding of field operations and needs. Also, it is hoped that this report will provide in-country donor agency staff and government officials with an objective perception of current environmental projects, institutional capabilities and relationships, and possible areas for expansion.

The issues presented correspond to an outline (Appendix A) that Peace Corps/Washington provided each assessment team. We suggest that the reader review this outline of issues prior to reading the report to facilitate understanding the format and content. The issues were chosen because they will influence future Peace Corps, AID, and host country agency collaborative forestry efforts.

During the 8-day assessment visit to Jamaica, interviews were conducted with key personnel from Peace Corps, AID, and host country ministry institutions involved in forestry and natural resource activities. Site visits were also made to representative project areas and institutional facilities within the country.

The content of the report represents the authors' viewpoint resulting from the interviews, site visits, and review of available documents. The authors wish to express their

appreciation to all who contributed time and energy to making the visit complete. It is hoped that the results represent a balanced and objective analysis of a complex series of activities.

SUMMARY

The recent election of Edward Seaga as Prime Minister of Jamaica could signal a period of growth and increased efficiency in the use of forest resources. Deforestation is not a burning issue in Jamaica. However, forestry is an area which, if given stimulus, might help address the high unemployment problem.

Jamaican government forestry efforts are complicated by the existence of two agencies, the Forest Department and the Forestry Industry Development Company (FIDCO) which divide limited financial and technical (personnel) resources. The major share of these resources go to FIDCO, which is a public corporation with the mandate to generate capital through development and utilization of Jamaican Pine Forests. The Forest Department, operating with limited funds and personnel, concentrates its efforts on extension forestry, research and management of public hardwood forests.

Peace Corps, currently undergoing staff changes, is attempting to solidify existing programs and also explore future programming possibilities in natural resource management. Recent PCV experiences in forestry have been limited to 2 PCVs working with the research arm of the Forest Department. Work with the Soil Conservation Division and Henry Stennett, its director, has been marked by mutual respect and hopes that future programming will more effectively utilize the extension skills of PCVs. Increased government support of the Forestry Department could lead to PCV placements in program development (1 volunteer) and extension (5 to 10 in the beginning). This, however, can only be programmed when the Forestry Department can provide good

counterparts in rural areas--something that could take a while.

AID/Jamaica's efforts in natural resources management have focused on soil conservation rather than forestry. Recent experience in an integrated rural development project with Peace Corps involvement has been bittersweet. The project, fairly capital intensive, has proven difficult to evaluate and frustrating for some PCVs. Out of an initial 20 volunteers, there are now only 6. The two major lessons from this experience seem to be that private consultants from AID should be matched with PCVs and that PCVs must receive high quality training. AID/Jamaica favors the use of skill-trained volunteers and would welcome the input of PC/Jamaica in future forestry programming.

Natural resource development in Jamaica is at a point where Peace Corps efforts in forestry programming could catalyze and unify the programs of diverse aid agencies such as FAO, World Bank, and USAID. The focus should be on soil conservation, agro-forestry (as tested by the Soil Conservation Division) and labor-intensive wood industries.

PREFACE

Jamaica needs forestry development more because of deficiencies in raw materials and employment than because of a deteriorating environment. The high humidity and rainfall on the island generally insure the natural revegetation of areas deforested of the original hardwood cover. Consequently water quality and site productivity remain fairly good. However, soil loss from poorly designed farm fields on steep ground becomes more serious each year. The expansion of these agricultural practices could pose serious problems in the near future. The existing forest on most of the island is multistoried scrub and non-commercial tree species, with little value to be obtained from extraction. Land with any productive capacity is continually kept in agricultural production.

Jamaica hopes to escape the current economic stagnation by utilizing all of its available natural resources, including its forests. With almost 95% of all wood products imported to meet local demand, the development of local forests would have favorable economic consequences. The development of sound forest management systems would also insure long-range protection of the environment. The development of forestry programs in Jamaica is impaired by the basic lack of technical expertise and funds to implement programs. The distribution of land in Jamaica is also an impediment to forestry development. The more productive agricultural land is controlled by relatively few owners and the less fertile, steeper land distributed among many poor owners. "Squatting" is a common phenomenon in Jamaica.

To become widely accepted, forest management practices would

have to demonstrate to land owners, particularly small owners, that forestry and agro-forestry are profitable. This would require the extension of environmental and technical education to people in all segments of society.

Jamaica is divided into two different geographical areas, eastern and western. The eastern end of the island with the Blue Mountains is generally composed of fertile, deep soils from shale parent material. The potential for growing crops is good, although short-rotation agricultural crops require soil conservation measures because of excessive slope. The western area of the island contains a large area of harsh topography with poor limestone soils and limited potential for forest production. The second-growth cover on this end of the island is much less dense than that of the eastern area. Many varieties of native tropical hardwood tree species grow throughout the island.

Introduced trees species fall into two groups, pines for lumber production and food trees (such as breadfruit and citrus fruits) which have been planted throughout Jamaica.

I. HOST COUNTRY GOVERNMENT COMMITMENT/EXPERIENCE

The priorities for Jamaica's development have yet to be clearly defined since the election of Edward Seaga as Prime Minister in October, 1980. Development is needed in almost all areas and some inferences can be made as to areas of concentration.

The government's main thrust will be attracting new investments in Jamaica to bolster the economy and reduce unemployment. New industries and increased agricultural development are to receive strong emphasis. Because of the current government's political ideology, the potential for increased foreign investment and loans is very good.

Forestry, particularly timber production and agro-forestry, could receive increased support as a corollary to increased agricultural production. Large-scale governmental efforts in community woodlots are doubtful, as there is not currently a scarcity of fuelwood. Jamaicans cook with kerosene in the rural areas, but its increasing cost may cause increased substitution with fuelwood.

The widespread availability of fuelwood does not make its increased production an important issue, with the possible exception of energy plantations for electricity generation. However, this idea is still very much in the nascent stage. The major area of growth in the near future in Jamaican forestry is most likely the growing and utilization of pine sawtimber.

A change in the government's forestry agency in 1979 demonstrates the emphasis of pine sawtimber production. The government established a new public corporation, the Forest

Industries Development Company (FIDCO). FIDCO, acting like a commodity board, assumed principal responsibility for the production and marketing of pine forest crops on the island. FIDCO's duties are to take over and make cost effective the existing pine plantations, nurseries, and sawmills; FIDCO is also charged with the construction of a new sawmill capable of handling 30,000 bd. ft. of wood per day, and a small pulp and paper mill. The financing for the formation and the initial operation of FIDCO came from a joint World Bank and Commonwealth Development Corporation loan of \$10 million.

Before the establishment of FIDCO, the Ministry of Agriculture's Forestry Department had full jurisdiction over government-owned forest land and forestry projects. The Forestry Department lost most of its productive land base and top personnel to FIDCO.

Consequently, the Forest Department was left with only a shell of its original talent and influence, and with a budget which is insufficient for new forestry development projects. The duties of the Forest Department are in research, recreation, training, and hardwood plantations. Although these activities draw less attention than FIDCO's work, they are recognized even by the head of FIDCO, Guy Symes, as important and necessary facets of forestry work in Jamaica. FIDCO cannot grow and be highly productive without a degree of stability and strength in the Forest Department.

The Forestry Department has the government mandate to supervise extension work and provide for small community forest projects, which makes it the logical choice for linkage with PC forestry projects. FIDCO's profit and production orientation does

not put it in direct association with villagers who face the problems of fulfilling their basic human needs. Currently the Forest Department's permanent staff is 255 people spread over 25 forest districts in 4 administrative regions. The vast majority of these employees act as custodians to the public lands, providing little direct management. The employees are stratified into different groups: wardens, headmen, foresters I and II and supervisors I and II. Few have any formalized training in forestry.

The Forest Department wishes to develop a two-year technical training program, but there has been a lack of both available candidates and trainers.

The Forestry Department funds three of the nation's seven nurseries, while FIDCO administers four pine nurseries. More detailed information about the Forest Department can be found in Appendix B.

The head of the Forest Department, Roy Jones, identified training as one of his highest priorities. Three of the four head regional supervisors have two years of technical training in agronomy rather than forestry. The improvement of the technical capabilities of the Forestry Department staff is considered critical to the growth and effectiveness of the organization. Unfortunately, there are almost no technical resources available to the Forest Department aside from its small library and the information produced by its research branch.

The Forest Research Office is one of the few agencies which works with both FIDCO and the Forestry Department. The Forest Research Office works on species trials (both hardwoods and softwoods, with the focus on pine), genetic tree improvement

programs, seed production, and insect and disease investigations. Bruce Follensby and Paul Ban, both forestry PCVs, work in the research department. The emphasis of the research sector is to determine the most appropriate tree species to plant, dependent on site specific parameters, to gain the greatest wood production.

The Forest Research Office is supervised by a British forester, Dr. Don Thompson, under an Overseas Development Agency (ODA) contract. In addition, there are five other ODA people working with the World Bank loan of \$900,000 to promote research and training.

The Jamaican Soil Conservation Division is another agency which works in conjunction with the other government forestry agencies. Its highly motivated director, Henry Stennett, recognizes how soil conservation must be integrated with an economic crop acceptable to the Jamaican farmer. For this reason, the Soil Conservation Division is also the vanguard for rural extension work, maintaining Jamaica's only functioning extension training center, the Smithfield Experimental Station. This facility provides both long-term training for agricultural technicians and short courses for Jamaican farmers. There are two-week and four-week courses offering 50% theory and 50% practical techniques. Each training period has a capacity for 20 students. However, Stennett is aware that it will take time before enough Jamaicans will be adequately trained to fill all the technical positions needed in soil conservation. For this reason, he sees PCVs as an excellent resource to fill middle management roles and extension positions. The Soil conservation Division has worked with PCVs in the Christiana IRD project and Stennett feels that the two groups have a good working relationship.

The Soil Conservation Division is described further in Appendix C.

There has been a great deal of international participation with Jamaica in the area of natural resource development and research. Beside the ODA and World Bank, the FAO has been particularly active in Jamaica.

Other extra-national groups working in Jamaica include the following: Inter-American Institute of Agricultural Sciences, which has provided 3 technical staff and \$400,000 through the Simon Bolivar fund to work on multiple crop planting and other agricultural projects; the IDB, which has provided \$2.5 million to continue the Allsides development project; the government of Norway, which has allocated \$945,000 through FAO for staff training and agricultural projects (and which is also considering a large loan of approximately \$20 million for another IRD project); and the UNDP, which has provided staff resources for various projects including the development of the Smithfield Soil Conservation Training Center. Many of these groups will probably provide additional support at the requests of the new Seaga government.

Government agencies such as the Forest Department feel that Peace Corps involvement could help to upgrade personnel technically and also to work with Jamaicans in identifying effective strategies for rural development. Agency leaders would like to create an "esprit de corps" and to capitalize on successful projects to show that Jamaicans can deal with their own problems. Training of host country personnel along with PCVs is regarded most favorably, especially in extension. Because Jamaicans speak English, joint training can occur at early stages in any programs. In-country training would help to reinforce

Jamaican training institutions.

Creating confidence is seen as a major task. After years of colonial and semi-colonial rule, initiative is difficult to find. The question is whether or not there exists the administrative capability for adequately supervising and assisting PCVs and their counterparts. In the immediate future, the Soil Conservation Division could do so; whether the Forest Department could is doubtful.

II. PEACE CORPS COMMITMENT/EXPERIENCE

Peace Corps has been involved in Jamaica for a number of years with a relatively large number of volunteers for the size of the country and population. Currently, there are approximately 150 PCVs in Jamaica, with most working agriculture, health, nutrition and education. There are three program managers in Jamaica, with a fourth scheduled to arrive at the end of January, 1981. The PC Director, John Gist, assumed the position in late 1980. He has a strong philosophy of staff responsibility and the volunteer's role in the development of Jamaica. His arrival is viewed as a positive step toward team-building and volunteer support. Previously, volunteer attrition stood at 30% and only 20% of volunteers finished their term of service in the same project in which they started. The conversion of the program staff to Gist's approach has not been as easy as the development of the good relationship with the volunteers, but time and patient management should allow programming and administrative direction to come together.

Peace Corps has been only slightly involved in forestry projects in Jamaica because of division in the government's forestry sector and the lack of programming capabilities. However, two well-trained and competent PCV foresters, Paul Ban and Bruce Follensby, have worked for the Forest Department for almost two years. Most of their work has been in field data collection and research. The relationship between PC and FIDCO, Forest Department, and the Soil Conservation Service has been enhanced by the efforts of FCVs Ban and Follensby. With little technical or material support from PC or the Forest Department, they have managed to weather changing roles and duties enabling

them to contribute important work in genetic tree improvement programs, seed collection and species trials. They have not, however, had counterparts available to whom training and technology transfer could be offered. The PC program in forestry has had no particular geographic focus.

Peace Corps/Jamaica sees the immediate expansion of the forestry program occurring in two areas - environmental education and further forestry research. There are problems, however, in providing proper program support with the existing training facilities and program staff. One of the best possibilities in this area lies with the Smithfield Center of the Soil Conservation Service, or the Mount Eri FIDCO forest development project. Both facilities could provide a measure of technical pre-service training opportunities for PC volunteers and their counterparts, but extra accommodation facilities and training staff would be required.

The program manager of the agricultural programs, Hugh Shaw, knows the intricacies of the Jamaican government and if the forestry program is given impetus, he could guide it through the administrative process. However, his experience in forestry is limited. Jamaica is a country that would strongly benefit from programming workshops done on a regional basis. They would like to see those countries who have experience attend the workshop also. Jamaicans would also benefit from a regional forestry training center. Both of the current forestry volunteers feel that any pre-service training should take place in the tropics.

The recent change of administration in PC/Jamaica necessitates a gradual approach in terms of forestry programming. Clearly, the new director supports the philosophy of community

forestry as expressed in the PASA. His forestry experience is limited and any programming assistance the PASA could provide to the PC staff would be valuable.

III. AID/JAMAICA COMMITMENT/EXPERIENCE

The assessment teams's two principal AID contacts were Bob Maubry and Don Yeaman. Mr. Maubry was a PC staff member in Paraguay. He has a MS in forestry and a BA in forest ecology. Mr. Yeaman has a long track record in agricultural matters in developing countries. He has a positive attitude about PCV input to AID projects and sees forestry as a new area of project development.

AID resources for any future programs are divided between short-term and long-term resources. On-going projects in energy, agricultural planning, agricultural education and health management use a number of short-term consultants. In addition to in-country expertise, the consultants also produce documents which could be of assistance. Other resources include a library, special development funds and possible support from central funds. AID/Jamaica is willing to discuss PC programming ideas and could help locate technical material and personnel resources.

The AID mission in Jamaica has received a large increase in support since the election of the Seaga government. At this time, no specific resources have been devoted to direct aid for forestry projects. The major focus of AID funds in the natural resources area has been in an integrated rural development project (IRDP) which is being carried out in two watersheds, Pindares River and Two Meetings. This is a five-year project including soil conservation and reforestation activities. It was developed with the help of Henry Stennett at the Soil Conservation Division.

The IRDP has included work on roads, housing and electricity along with forestry and soil conservation. The AID financial contribution began with a \$2 million grant and another \$13 million

in loans. The project is directed towards increasing agricultural production for roughly 4,000 farmers located in an area characterized by small hillside farms. Credit is being offered to farmers in return for guarantees that certain soil conservation techniques are used (e.g., terracing and contour ditches).

The project has actively involved Peace Corps volunteers and Pacific Consultants, Inc., a consulting firm., hired by AID. Initial difficulties between PCVs and the consultant group resulted in high PCV attrition rates. Despite this problem, AID is basically satisfied with the work of Pacific Consultants. AID reactions to the input of the PCVs in the IRD project are varied. The volunteers still working in the two watersheds are regarded favorably. The problems that have occurred are not felt to be conceptual but the results of certain personalities. The initial relationship between Peace Corps and Pacific Consultants, Inc. seems to have been poorly planned. The consultant group did not feel that Peace Corps should be so intimately involved in the field. AID feels that this could be corrected in the planning stage. AID would also like to see the training of the PCVs improved and believes that this should be done by evaluating the needs and expectations of PCVs in given projects.

The success of the IRDP itself is more difficult to assess. Expenditures are running behind schedule on the project. This might be an indication of over-budgeting or incorrect gauging of the ability of local institutions to absorb and utilize large amounts of capital. The Soil Conservation Division feels the project has been successful and they would like to expand the methodology to other areas of the country. AID/Jamaica, however, will be hesitant to become directly involved in similar Jamaican

projects in the future. More substantial information concerning the relative success of the project and AID's interest in future efforts will be available in the coming months, as a team is currently setting up a system for monitoring and evaluating the IRDP.

There are two observations concerning the integrated rural development project that are relevant to forestry and AID's future plans. First, replicability of the IRDP is questionable due to the very high cost and the difficulty in evaluating the project. The cost aspect has forced the Jamaican government to seek funding from other organizations for IRDPs planned in the future. AID itself is concerned that after AID's contribution to the IRDP in the Pindares River and the Two Meetings end, the government of Jamaica will be unable to continue the project.

The AID fisheries project is another project which uses PCVs. In this case, the integration of the PCVs into the project occurred during the initial planning stages. From an AID viewpoint, the fisheries project, including the performance of the PCVs have been quite successful. The optimism regarding the fisheries project stems from good planning in the initial stages, clear definition of PCV inputs and good skill-training for the PCVs themselves. At least in this case, organizational issues between PC and AID have not diverted energy from the main goal of assisting the Jamaican Government. More complete analysis of the fisheries project and interactions between PC and AID seems necessary for these kinds of projects to continue improving. A list of Forest Department requests for AID funding is included as appendix D.

A future AID project will attempt to address agricultural

marketing in Jamaica. The large potential for commercial forestry could be tapped if new facilities (e.g., sawmills) and markets are developed. Commercial forestry on a small scale could provide sources of employment and long-term ecological benefits. AID will attempt to address overall agricultural marketing through a refinement of the marketing system. Though still in the initial planning stages, this would include institutional reinforcement and the strengthening of regional wholesale markets and collection systems. As Mr. Maubry and Mr. Yeaman will be in Jamaica until January 1983 and summer 1982 respectively, current programming priorities will probably remain consistent for the next 2 years, with little additional support for forestry programming. However, AID/Jamaica would welcome and assist in the distribution of funds for forestry from central AID sources (such as the Development Support Bureau). There is also the possibility that certain energy-related activities could benefit the forestry sector. Because of time limitations the assessment team was not able to visit Jerry Houlihan, who is the energy specialist at AID. The assessment team would recommend that any future programming visits include his input. Mr. Houlihan is expected to be in Jamaica until January 1982.

AID/Jamaica is unusual in having a forester with Peace Corps experience, Mr. Maubry, who will be in-country until 1983. AID/Jamaica is interested in working on the development of a PASA forestry program but has made it clear that it plans no forestry programs in the near future. However, forestry is an integral part of its soil conservation programs. AID/J has two main concerns regarding the development of the PASA. The first is whether PC is willing to support a first-rate pre-service

skill-training program. Mr. Maubry strongly favors the use of skill-trained volunteers provided the training is first-rate. He also feels some jobs require BS foresters. The second concern is whether the USDA, or the Forest Service in this case, will be able to provide technical personnel as implied by the project documents. The second question was raised because various personnel at AID/Jamaica have had problems in the past with USDA's ability to fulfill its obligations in PASA agreements regarding technical personnel. These are issues that would need to be resolved with AID/Jamaica for the PASA to be effective, were it implemented in Jamaica.

AID/Jamaica would assist in program development for forestry and feels that a Peace Corps forestry program could be a catalyst for more assistance to the Jamaican Forestry Department. They share the concern that the present Department needs improvement.

IV. FAO/JAMAICA COMMITMENT/EXPERIENCE

FAO forestry activities in Jamaica focus on both the community level and the national planning level. The office is headed by Campbell McCulloch, a New Zealander. FAO personnel working directly in the forestry sector are Tom Allen, at the Forest Department and Eric Garnum, at FIDCO.

The Jamaican government is reviewing a community forestry project proposal prepared by the FAO. The proposal, developed by Tom Allen, describes activities for the first 2 years of a five-year project. Allen was working with FIDCO but is now working with the Forest Department in an effort to bolster their overall development. The community forestry project has four activities selected.

1. Carry out species trial for fast growing trees on different sites in the country.
2. Through the trials and other research, select optimum species and develop continuing seed services.
3. Develop pilot plantations using proven seed stock.
4. Systematize criteria for the further establishment of forest plantations throughout Jamaica.

FAO has set aside funds for this project and is only awaiting host-country approval to begin. Preliminary planning included possible inputs from AID. However, AID's specific role in the project should be clarified because both AID and FAO told the assessment team that they felt out of touch regarding specific project plans for the forestry area.

FAO would also like to use its experience with coconut utilization in the Philippines to take advantage of the large number of trees damaged by two hurricanes which hit Jamaica last

summer. The project in the Philippines developed methods for making wood products from coconut palms on a fairly large scale. Products made include parquet flooring, billy-clubs, kitchen utensils and tool-handles. FAO is currently deciding which agency it should work with on the project.

Other FAO inputs into Jamaican forestry include financial assistance to the Ministry of Agriculture for personnel costs, assisting in the rehabilitation of forests in eastern Jamaica, and Eric Garnum's services in the financial management of FIDCO. Future projects could include financial support for technical training for Forest Department personnel and possibly the development of a project that would employ youth from the Kingston area in reforestation activities. The latter is only at the discussion stage but it is representative of the diverse thinking going on at the FAO.

Campbell McCulloch and other FAO personnel feel that the two major problems in Jamaica are the lack of locally trained personnel and the lack of coordination by development agencies. Mr. McCulloch is concerned that there is a lack of information-sharing and collaborative planning, which if improved, could contribute to greater efficiency.

FAO is interested in working with AID and Peace Corps in community forestry. They feel that PCVs have made a fine contribution in the past and can in the future. FAO is particularly interested in coordinating the allocation of its human resources with AID's financial resources. FAO technical personnel could help with PCV counterpart training and could provide technical advice.

V. FORESTRY TRAINING

Training for forestry/natural resources programs in Jamaica will basically be a new experience. PC/Jamaica is particularly favorable to the use of skill-trained volunteers in forestry and soil conservation. This is also true of the Soil Conservation Division. This agency has requested 4 PCVs for the summer of '81 to help orient farmers in techniques which have been developed in demonstration centers. These techniques include terracing, planting of different grass-types, contour planting and intercropping. The agency would specifically like PCVs to have a background in physical sciences and soils management. Mr. Stennett has been particularly happy with the work of skill-trained volunteers in the integrated rural development projects of central Jamaica funded by AID. These PCVs were trained in Jamaica.

The Forest Department at the Ministry of Agriculture has had virtually no experience with skill-trained PCVs. Because of the diverse ecology in Jamaica, whether the trainees are BS foresters, forest technicians, or environmental science generalists, they will have to receive intensive training in tropical ecology. It is also clear that they will need training in extension techniques. Extension training is also needed by Forest Department personnel. The Forest Department was also very responsive to the training of host country personnel with PCVs.

In-service training for PCVs could be conducted in several possible areas. Soil conservation training could be done for volunteers in a number of different technical areas. Facilities at the Smithfield Demonstration Center could be used. The Center has accommodation for 20 people and has a variety of forestry and

soil conservation demonstration sites. It is a valuable resource and the director of the Soil Conservation Division would like to see it used for such a purpose. The Division holds training courses there continually. There are also 3 other less well-equipped centers in the country. They are located near Spanish Town, Oracabessa and Caanaa.

In-service forestry training might also be conducted at the Clydesdale Estate in the Blue Mountains. This old coffee plantation has been converted to a nursery and demonstration center for a number of forestry methods. It is located in dense forest and would be a very interesting place for short-term training. It is also near areas which are being worked by the Forest Industry Development Company (FIDCO). Cable logging, replanting and small sawmills are all nearby.

PCVs in Jamaica are usually placed on a one-to-one basis with host country nationals. The Forest Department would have a difficult task locating many counterparts if the PCVs were to start work now. There are numerous plans to remedy this situation through training. However, it is not clear what professional level within the Department would be best for matching up with the PCV. Suggestions by Roy Jones, Department Head, are that the PCVs in the field be paired with foresters on levels 1, 2, or 3. He would also like to see a master's level (B.S. with experience) forest management specialistt placed as a councerpant to a program development officer at the Department office in Kingston. This program development office position has gone unfilled for the last 6 months. This is an indication of the lack of skilled personnel in the forestry field. Considering these shortages, it is no surprise that all parties concerned would like to see both

pre-service and in-service training develop. As mentioned before, the Forest Department would like to see extension taught in such a fashion. As this type of training is new in Jamaica, they feel they would benefit from other countries' experiences in training.

Since language is not a barrier, joint host country/FC training could take place during pre-service or in-service. It could be particularly helpful in developing a "team" approach if it occurred before the trainees began their service. Topical areas could include agro-forestry, techniques such as inter-cropping, nursery and plantation management and extension.

Both the Forestry Department and the Soil Conservation Division are anxious for counterpart training. Large projects may be funded for both agencies in the future and both are short of qualified personnel.

As part of the AID project in Central Jamaica, a small training center is being established in Christiana. All of these facilities, however, would be strained if forced to deal with a 3-month training program. The Institute of Tropical Forestry in Puerto Rico was the center most often mentioned as a training resource.

APPENDICES

- A. Assessment Team Briefing Issues
- B. Functions of the Forest Department
- C. Role and Function of the Soil Conservation Division
- D. AID/Jamaica Forestry Development Projects

APPENDIX A

ASSESSMENT TEAM BRIEFING ISSUES
TO BE DISCUSSED
WITH
PEACE CORPS, AID AND HOST COUNTRY MINISTRY STAFF

The following topics should be discussed with Peace Corps staff and volunteers, AID mission staff and Host Country Ministry staff. The discussion on the topics should follow the outlines as closely as possible in order to obtain comparable data from each country. All information obtained should be cross referenced as much as possible from other sources for an objective viewpoint.

I. HOST COUNTRY MINISTRY COMMITMENT/EXPERIENCE

A. Host Country Government's priorities in development programs

1. What have been Host Country Government's development priorities in the past 3 - 5 years: Forestry/Natural Resources, Education, Health, etc?
2. What types of programs (Education, Health, Water, etc.) has Host Country Government most actively pursued from donor agencies in the last 3 -5 years?
3. What are the current developmental priorities of the Host country Government? Give examples.
4. What are projected needs as perceived by Host Country Ministry?
5. What are the projected developmental priorities for the Host Country Government in the near future (1 - 3 years)? Give examples. To what extent are donor agencies involved in accomplishing those priorities?
6. If answer to 5 is different than 1 or 2, why?

B. Forestry Department or other Government supported forestry efforts

1. What is the institutional structure of the Department of Forestry? (Include an organizational chart.)
2. What type of support does the Forestry Department receive from the parent ministry and the Host Country Government in general?
3. What are the staff/material resources of the current Forestry Department?
 - o budget
 - o education of employees
 - o training of employees
 - o forestry schools in the country
 - o research capabilities/current research activities (involving whom, what is major thrust of research)?
 - o staff stability
 - o audio-visual, technical files/library, forestry equipment
4. What types of forestry programs and projects has the Department of Forestry focused on in the past 3 years? Currently involved in? (Anticipate next 3- 5 years.) Where are these located? List examples, e.g., village woodlots, watershed management.
5. How is the Forestry Department perceived by the general public? e.g., tax collector, enforcement officer, public servant?
6. Future plans.

- C. Host Country Department of Forestry past/current experience in forestry projects with PC or AID (Separate response for each agency)
1. What type of forestry programs/projects has this arrangement usually entailed? Examples.
 2. Is there a geographical focus/distribution of these projects?
 3. What segment of society (ethnic, social, sex) have these programs/projects benefited the most? Is this going to change to any degree?
 4. What type of support has the HCM provided PCVs in these projects?
 - o material
 - o labor
 - o office space/support
 - o technical support (use of labs, etc.)
 - o dollars
 - o transportation
 - o training
 5. What are Host Country Department of Forestry's attitude and actual resource capability toward providing counterparts for PCVs?
 6. Have PCV counterparts been used? Seldom, usually, almost always?
 7. What is the institutional level of the PCVs' counterparts?
 8. What type of qualifications does the Department of Forestry require of its PCV counterpart?
- D. Host Country Department of Forestry past/current experience with private voluntary organizations and other international donor agencies
1. What are the organizations and key personnel that have been involved (past 3 years)?
 2. What type of programs/projects have taken place/are taking place?
 3. What are future expectations for programs/projects (within 5 years)?

II. PEACE CORPS INTEREST/EXPERIENCE

A. Personnel Resources

1. Are there currently staff members involved in forestry and/or related projects?
 2. If so, what are their backgrounds and terms of service?
 3. What plans exist for replacing them?
 4. If there currently are no such staff members, what, if any, plans exist for responsibility for a forestry project?
- 

5. What are the names and numbers of volunteers, by project, and their completion of service dates and replacement plans?

B. Material Resources

1. What type of project material support is available to volunteers from Peace Corps?
2. What type of audio-visual, technical files, library, support is easily accessible to PCVs from the Peace Corps office?

C. Peace Corps experience in forestry/natural resources projects

1. What types of forestry projects has Peace Corps been involved in in the last 3 years? Examples.
2. What are the current projects Peace Corps is involved in?
 - o are they progressing as planned? If not, what changes have been necessary?
 - o how many volunteers are involved in these projects?
 - o what degree of counterpart participation exists?
 - o what level of technical support do the PCVs/counterparts receive from PC/HCM?
3. Is there a geographical focus to PC forestry projects? If so, why?
4. To what degree does PC-in-country see itself capable of programming/support for new project development or expansion of old projects?
5. What constraints do they see? What PC/Washington support will they need?

D. Peace Corps experience in collaborative projects, of any kind, with AID

1. Within the last 3 years, what type of programs/projects have been developed jointly by PC and AID?
2. Who initiated this activity and at what level (central, regional, local)?
3. What degree of involvement (money, labor, material) has existed from both parties?
4. What is Peace Corps' general perception of this type of activity?

E. Peace Corps' relationship with Host Country Ministry and AID

1. What has been Peace Corps' relationship with Host Country Ministry and AID in general?
2. Are there foreseeable changes in this relationship due to changes in budget, staff, or program priorities by any entity?

3. Are there specific issues in common/different?
- F. Peace Corps' relationship with PVOs, NGOs, and other donor agencies.
1. What is Peace Corps' current relationship and past experience with PVOs, NGOs, and other donor agencies (including key personnel)?
 2. Has Peace Corps been able to effectively utilize PVOs, NGOs, and other donor agency personnel/material resources?
 3. What is future potential for material/technical support from these agencies?

III. AID INTEREST/EXPERIENCE

A. Staff Resources

1. Does AID currently have staff dealing with forestry?
2. If so, what is their background and terms of service?
3. What, if any, plans for replacing or adding forestry related staff exist?

B. Technical Resources

1. What technical resources (e.g., libraries, connections with research organizations, private consultant resources) does AID have that could assist PASA related activities?
2. Who has or does not have access to these technical resources?

C. AID experience in forestry/natural resources projects

1. What types for forestry/natural resources related programs/projects has AID been involved in in the last 3 years?
 - o degree of involvement
 - money
 - labor
 - material
 - o principle beneficiaries in society
 - o most important outcome
2. What type of forestry/natural resources related programs/projects is AID currently involved in?
 - o degree of involvement
 - money
 - labor
 - material
 - o principle beneficiaries in society
 - o anticipated outcomes

3. Is there a general philosophical orientation of these programs/projects?
 4. Is there a common development strategy to these programs/projects (e.g., institution building)? Give examples.
 5. Who is primarily undertaking program/project activities? Give examples.
 6. What is AID's philosophical orientation toward the use of counterparts?
 7. Is the orientation reflected in the actual projects?
 8. With what priority does AID view future/expanded efforts in the forestry area? How is that commitment evidenced?
 9. Is there a geographical focus to AID activities?
- D. AID experience in collaborative projects, of any kind, with PC, PVOs, and NGOs
1. What types of programs/projects have taken place?
 2. What organization initiated this collaborative effort and at what level (i.e., central, regional, mission)?
 3. What was the degree of involvement by each participating organization (i.e., money, labor, material)?
 4. What were/are the outcomes of these activities (e.g., primary beneficiaries in society)?
 5. What is AID general perception of this type of activity?
- E. AID's relationship with HCM and Peace Corps
1. What has been AID's relationship with PC and HCM in general (e.g., assess AID's attitude and understanding of 3 goals of Peace Corps)?
 2. Are there foreseeable changes in this relationship due to change in budget, staff, or program priorities by any entity?
 3. Are there specific issues in common/disagreement?
- F. AID's relationship with PVOs
1. What is AID's current relationship and past experience with PVOs, NGOs and other donor agencies?
 2. What type of contributions have existed in these efforts (e.g., key personnel, material, dollars, technical resources)?

IV. TRAINING

A. Peace Corps Volunteer Training

1. What is the attitude of PC, HCM, and AID staff toward skill trained volunteers in Forestry/Natural Resources programs/projects?

2. Have PC, HCM, and AID worked with trained volunteers? If yes, what type of project, if no, why not?
3. If Peace Corps has used skill-trained volunteers in any sector, where has the skill-training taken place (i.e., SST or in-country)?
4. What suggestions do PC staff and volunteers, HCM and AID have for pre-service and in-service PCV training (especially skill training) for forestry programs/projects (e.g., skill areas)?
5. What type of in-service forestry training could be provided for PCVs currently working in other programs?

B. Peace Corps volunteer counterpart training

1. What degree of involvement do counterparts have in current or projected PC, AID, or other PVO or donor agency forestry projects?
2. What is the attitude of PC, HCM, and AID toward PCV counterpart involvement in PCV pre-service and in-service training?
3. What are each entity's principal concerns about this issue, such as financial, support, technical material presented, language, travel, time away from work, etc.?
4. Are there appropriate training facilities, either Peace Corps, AID, HCM, or private, in-country or within the geographical region?

V. FORESTRY PROJECT PROGRAMMING

1. What are the tentative forestry programming issues that PC, HCM, and AID perceive as needing to be addressed before an actual new or expanded project could be implemented?
2. Which entities need to address which of these issues?
3. What further information does each of these entities feel it needs from Peace Corps/Washington, in order to determine the feasibility of further participation in the PASA?

APPENDIX B

F U N C T I O N S O F T H E F O R E S T D E P A R T M E N T

FOREST DEPARTMENT

MINISTRY OF AGRICULTURE

FOREST DEPARTMENT

The Forest Department is the principal Government agency concerned with the management of Jamaica's 274,000 acres Forest Estate for the production of native and exotic hardwood timber and wood products to meet local demands, and for the conservation of soil and water resources of the island. Of the existing total Forest Estate 24,430 acres are now on lease to the Government owned Forest Industries Development Company Limited (FIDCO) for a period of 49 years commencing April 1, 1979. The formation of FIDCO and the lease came about as a result of a World Bank IBRD/CDC Loan No. 1716-JM to the Government of Jamaica for Forestry Development.

PROJECT AREA FOR FIDCO

The main project area for FIDCO's operations and activities lies between the Junction Road (which connects Kingston and Annotto Bay) and the ridge east of Newcastle-Buff Bay Road encompassing a total of 145,789 acres.

Existing plantations in the main project are includes:

Spring Hill, Lancaster, Oatley, Chepstowe, Shemtamee
all in Portland; and Fort George, Grays Inn and
Cape Clear in St. Mary.

In addition, the pine plantations in Mount James Forest District, most of those in Mavis Bank Forest District in St. Andrew; and Serge Island, Ben Lomond, (Trinityville) Spring Dunrobin, Wind Hill and Cave Bottom (Sunning Hill) in St. Thomas will be transferred to FIDCO at a book value.

FOREST DEPARTMENT

The Forest Department will continue to manage and develop the remaining 250,000 acres of the Government Forest Estate mainly for the production of hardwood timber and wood products to meet local demands. At the same time the Department will be responsible for the conservation of soil and water resources of the island.

Therefore the main objectives of the Forest Department are:

1. Protection and development of the Forest Estate while conserving soil and water resources
2. Afforestation of suitable and accessible areas with a view of increasing timber production and reducing importation of wood and wood products
3. Encouragement of afforestation and sound forest management on private lands
4. Research work on silvicultural and utilization problems
5. Stabilization of rural communities by providing training and employment opportunities

In order to achieve the objectives successfully the Ministry of Agriculture has taken the following steps:

- (i) commenced a review of the organizational structure and staff development needs of the Forest Department aimed at increasing its technical capability and efficiency
- (ii) the Soil Conservation Unit of the Ministry of Agriculture is now a joint part of the Forest Department
- (iii) government has signed a three-year agreement with UNDP/FAO for technical assistance in the development of forestry and forest industries.

- (iv) government has also established a Forest Industries Development Organization with the primary purpose of establishing new industries such as the Cement Bonded Particleboard Project and modernizing the existing ones based on wood raw materials.

AREAS OF ACTIVITIES

The Forest Department will operate in the following major areas of activities:

- a) Plantations Development - Mainly Hardwood Plantations
- b) Forest Management - Plantations and Natural Forests
- c) Research - Including Energy Substitution
- d) Training - Professional, Technical and Administrative
- e) Soil Conservation and Watershed Management
- f) Forest Extension and Development
- g) Forest Administration Work

PLANTATION DEVELOPMENT

The plantation development activities will include the following major targets:

- a) establishment of approximately 1,500 acres of new hardwood forest annually
- b) production of approximately 3.0 million seedlings annually; seedlings will be sold to FIDCO for their project
- c) construction of approximately 10 - 15 miles of new roadways; additionally roadways will be constructed for the harvesting and extraction of hardwoods from natural and plantation forests
- d) harvesting of 50 acres or more of hardwood plantations annually on a sustained yield basis
- e) maintaining approximately 150 miles of access roads to existing and new forest plantations.

FOREST MANAGEMENT

There are approximately 8,000 acres of existing hardwood plantations and 7,000 acres of pine plantations scattered on Forest Reserves and presently being managed by the Forest Department. These plantations will be given the necessary silvicultural treatments as required from time to time.

The major targets included here are:

- a) weeding 10, 000 acres of plantations annually
- b) thinning and pruning approximately 2,000 acres; this area will increase as we develop the capability for additional use of the products from the thinnings
- c) selection felling and stand improvement of about 2,000 acres of our natural hardwood forests, and
- d) fire protection work for existing and new forest plantations.

Forest Management will also include the necessary Forest Surveys and Inventory Work for the preparation of long term Management and Implementation Plans for our hardwood plantations and natural forests.

FOREST RESEARCH

The Forest Department is committed under the terms of the World Bank IERD/CDC, Forestry Development Project Loan to do all the research work necessary for the development and conservation of forestry in Jamaica. Funds are provided by this loan to accommodate the foreign exchange costs of this research.

A new research policy was prepared and is now being studied for implementation.

The major areas of research includes:

- a) tree improvement and seed production mainly of Pinus caribaea, but includes other tree species
- b) silvicultural treatments and practices to be applied to existing and new forest plantations, and natural forests

- c) fire, pests and diseases protection studies for all types of forest plantations
- d) growth studies of all major economic species
- e) studies on fast growing hardwood species for the production of fuel wood, charcoal, nectar for honey and other raw materials for other wood based industries
- f) species adaptation and provenance trials on limestone and other areas with the view of establishing economic forest plantations in these areas
- g) agro-forestry trials with the view of maximizing the production from the land using both forestry and agricultural crops e.g. coffee under pine.

The present staff in research is insufficient and not fully trained, therefore new staff will be recruited to initiate the research programme. Steps have been taken to recruit a Senior Research Officer under ODM Technical Assistance Programme to assist in developing our research programme. This officer will be here for a period of 3 - 5 years.

TRAINING

The Forest Department is committed under the terms and conditions of the World Bank IBRD/CDC Loan to carry out all the work necessary to provide training for the forestry sector as a whole. Funds are provided in this loan to cover foreign exchange costs of all the training required. A training programme and policy statement is being prepared for submission to the Ministries of Agriculture and Public Services, and also to the Chief Personnel Officer.

We have recognized the need for training at all levels in the sector. To achieve the targets identified, steps have been taken to recruit a Senior Training Officer and Training Officer under ODM Technical Assistance Programme to assist in developing career paths for individuals recruited. Presently, we now have a Training Officer at the Technical level.

SOIL CONSERVATION AND WATERSHED MANAGEMENT

The Soil Conservation Unit of the Forest Department will be responsible for the following activities:

- a) Identify, plan and implement major soil and water conservation projects, and then hand these over to the Regions for the production and maintenance aspects
- b) advise on policy and legislation on land use and all matters related to soil and water conservation
- c) conduct and/or coordinate national surveys on conservation needs, land capability and land use
- d) formulate a national programme in soil and water conservation on agricultural lands
- e) undertake demonstrations and research in soil and water conservation within the total research organization of the Department and the Ministry of Agriculture as a whole
- f) provide technical assistance and direction to the regions Agricultural Commodity Boards and other organizations concerned in carrying out soil and water conservation work on Agricultural lands
- g) provide personnel training in soil and water conservation locally and identify scholarships and training opportunities abroad
- h) identify training needs and requirements in soil and water conservation at all levels
- i) act as agent responsible to develop, monitor and coordinate all matters related to Watershed Management, protection of natural resources and environmental control with regard to other Ministries and Departments.

As the Unit develops its functions will be expanded to include other relevant areas of activities.

FOREST EXTENSION AND DEVELOPMENT

Jamaica has 600,000 acres of forest or 24% of the land area. This 24% is distributed as follows: 10% Government Forest Estate and 14% privately owned. Of the area privately owned the Bauxite Companies and some private farmers have established an estimated 5,000 acres of plantation forests.

The Department now undertakes to emphasize more of its efforts to get private landowners to extend existing forest plantations and to establish new acreages where there is none. To this end the annual target for private afforestation will be 2,000 acres with the view of establishing plantations for fuelwood and charcoal, timber and nectar for producing honey.

Other activities included here are:

- a) Forest Recreation and Tourism - develop and improve recreation areas in the forests to encourage more visitors both foreign and local
- b) Land Acquisition - for forestry development
- c) Community Forestry - providing advice and much needed raw materials for cottage based industries and agricultural activities
- d) Timber Utilization and Sales - harvesting of hardwood plantations and natural forests to produce railway sleepers, utility poles, fence posts, charcoal and other forest produce. The estimated revenue targets when all the resources required are in operation is \$400,000 or more annually
- e) Integrated Rural Development Projects - provide advice and planting materials required for these projects. Also to identify staff for the forestry components of these projects
- Urban Forestry - advice on timber trees in urban areas.

The activities of the Forest Administration section will include the following:

- a) accounting and finance
- b) personnel - staff, industrial relations, leave, salaries, records
- c) registry and
- d) property management including equipment, vehicles, buildings, stores and conservation

CONCLUSION

To achieve all that we are set to accomplish there is a very urgent and significant need for the recruitment and training of professional and technical staff. The formation of FIDCO has reduced the Department's complement of staff at all levels. In the short term efforts are being made to recruit qualified foresters through UNDP/FAO and ODM, but every effort will be made to have qualified Jamaicans filling the vacant posts within five years.

There is also the outstanding need for the completion of the Department's Headquarters building so that the Research and Soil Conservation Units will be stationed on the Headquarters compound. These units are at present away from the Headquarters and this makes coordination difficult and creates problems for the management process.

Finally efforts are being made to have a new organization chart prepared and submitted for approval and to have staff now in acting positions to be appointed.

October 18, 1979

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A P P E N D I X C

ROLE AND FUNCTION OF THE SOIL
CONSERVATION DIVISION

The overall role of the Soil Conservation is to promote the science and art of good and profitable land use in Jamaica. The specific role and functions are as follows:

- (a) National responsibility for soil conservation and watershed management activities particularly on agricultural lands.
- (b) Providing training in Soil and Water Conservation
- (c) Advising on the organization and staffing of a Soil Conservation Service within the regions.
- (d) Providing technical support guidance and assistance regarding soil conservation and watershed management activities in the regions and all major rural development projects.
- (e) Planning and directing research studies in soil conservation
- (f) Formulating a national programme in soil conservation and watershed management.
- (g) Undertaking and or co-ordinating surveys on conservation needs, land capability and land use.
- (h) Representing the Ministry in matters of Soil Conservation and Watershed Management and protection of natural resources involving other Ministries and Departments.
- (i) Advising the Ministry on policy and legislation connected to soil conservation.
- (j) Monitoring of soil conservation activities in the regions.
- (k) Representing the Ministry of Agriculture on matters of soil conservation and watershed management and involving such International Agencies as FAO, IICA, USAID, UNDP, IFAD and the IDB.
- (l) Establish and maintain soil conservation demonstration plots.
- (m) Assist in the identification and planning of integrated rural development projects.

EXISTING PROJECTS OF THE SOIL CONSERVATION
DIVISION

(a) Maintenance of Demonstration Plots

1. Objectives The main objectives of maintaining demonstration plots are to provide learning opportunities for farmers and officers alike; to test new soil conservation techniques and develop cost figures for various soil conservation activities; provide opportunities for undertaking research in the area of soil and water conservation and to test new and improved plant varieties.

Six demonstration centres are currently maintained as follows:

<u>11. Location/Parish</u>	<u>Plot</u>	<u>Areaage</u>
St. James	Sweetwater	12.5 acres
Trelawny	Warsop	12.00 acres
Trelawny	Allsides/ Olive River	6.00 acres
St. Mary	Cape Clear	30.00 acres
St. Thomas	Sarge Island	30.00 acres
St. Andrew	Top Mountain	13.00 acres

111. Allocation

Allocation requested for the financial year 1980/81 for demonstrations including operations of the Soil Conservation Head Office = \$400,000

Expenditure to 31st October, 1980.

(b) Soil Conservation Work in the Parishes

1. Main Objectives

- To assist private farmers to conserve their land and increase farm production.
- To undertake certain protective works such as gully control, protection land slides, revegetation of bare and eroded lands etc.

11. Consequently there are two types of programmes in operation as follows:

- Farmers Assisted Projects where a farmer can benefit up to 75% of the cost of undertaking soil conservation works confined to their individual farms.
- Authorised Projects which are funded 100% by the Ministry and involve works which affect a number of different farmers or is confined to Government lands.

111. Allocations and Expenditure in respect of the above activities will be furnished by the Department of Production and Extension.

(c) Allsides Pilot Development Project

1. Objectives

- (a) To develop a new system of production based on multiple cropping and efficient utilization of land on a group of small hill farmers.
- (b) To increase the productivity and production of certain food crops (yams, beans, potatoes, cassava and sweet potatoes).
- (c) To increase food production, incomes, nutrition and improve the standard of living of approximately 300 farm families occupying 622 acres of hilly lands in the project area.
- (d) To develop an institutional framework capable of implementing similar changes in other areas of Jamaica.
- (e) Gather accurate production figures for crops grown by the small hill farmer.
- (f) To provide training for local professionals and technicians.

11. Location of Project

The project is located near Wait-a-Bit in the parish of Trelawny and comprises the local communities of Drylands, Big Bottom, and Allsides.

The size of the project area is 622 acres and comprises 300 farm families.

111. Cost of Project and Sources of Funding

The total cost of the first phase of the Project January, 1977 to July, 1980 was as follows:

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Government of Jamaica	J\$ 322,840
Simon Bolivar Fund	US\$ 346,200

NB The Ministry has requested an extension of the project to December 1981. Expenditure to March 1980 was as follows:

GOJ	J\$ 382,393.98
Simon Bolivar Fund	US\$ 290,000

IV. Executing Agencies for the Project

These are the Ministry of Agriculture and the O Inter-American Institute of Agricultural Sciences.

(d) The GOJ/FAO/UNDP/NORWAY - National Soil Conservation Programme

1. Objectives

The main objectives of this project are to strengthen the capabilities of the Ministry of Agriculture to plan, implement and co-ordinate large-scale field operations in Integrated Watershed (Rural) Development.

Consequently there are two separate but closely related sets of immediate objectives to be achieved.

(a) Institution Strengthening: This will be done through concentrated in-service training locally, and supplemented by overseas training to increase the operational capacity of the Soil Conservation Division of the Ministry of Agriculture. Training will be provided in the seven (7) key areas considered necessary for any integrated watershed development. These are:

- Appropriate Soil Conservation measures
- Watershed forest management
- Agronomy including non-forest tree crops
- Extension methods including the involvement of the rural farmers in the development process, utilizing the bottom-up approach.
- Applied watershed economics
- Planning and managing Integrated Watershed Development Projects.

(b) Preparation of Detailed costed work plan:

These plans will be prepared for nine (9) watersheds stretching from Mt. Industry in St. Catherine to Bethel Gap in St. Thomas and encompassing the southern slopes of the Blue Mountain Range. These plans will be submitted to Government for decision on their implementation.

Cost of Project and Sources of Funding

The project is being supported financially by the Government of Jamaica, the United Nations Development Programme and the Kingdom of Norway. The Executing Agency is the Food and Agriculture Organisation of the United Nations (FAO) while the Government Implementing Agency is the Ministry of Agriculture.

The cost sharing is as follows:

(a) Government of Jamaica	J\$ 2,076,290 (latest estimate)
(b) UNDP Inputs	US\$ 954,635
(c) Government of Norway	US\$ 1,049,484

Allocations to Date

	<u>1979/80</u>	<u>1980/81</u>
Government of Jamaica	J\$ 590,000	634,000
UNDP	US\$ 549,425	406,210
Norway	US\$ 676,294	373,190

Expenditure to Date

	<u>1979/80</u>	<u>1980/81</u>
Government of Jamaica	J\$ 222,837	303,552.05
UNDP	US\$ 200,379	145,355
Norway	US\$ 98,672	199,010

Note: The Smithfield Demonstration Plot of 110 acres in Hanover is now operated as a part of this project.

PROJECTS OF IN THE PIPELINE

The GOJ/IDB Pilot Hillside Agricultural Project

Following the researching, testing and development of relevant technologies in profitable Hillside Farming at the Allsides Pilot Project the Inter-American Development Bank after reviewing the work at Allsides signed a non-reimbursable Technical Co-operation agreement with the Government of Jamaica to provide US \$49,500 to be used exclusively in the financing of expenses incurred for preparation of the above project for an area of approximately 1200 acres.

Conditions were that the project area be occupied by small farmers and that the project should result in the improvement of agricultural production in the mountainous areas of Jamaica. There was specific reference to Soil Conservation activities.

Present Status

The draft project document was cleared by the Ministry of Agriculture during the last week of October, 1980 and has now been submitted to the Inter-American Development Bank for consideration.

Cost of the Draft Project

The cost of the project over the 3-year implementation period is estimated to be approximately US\$4,042,000 (=J\$7,194,760), using a conservation rate of 1 US\$ = 1.78J\$, made up as follows:

Soil Conservation Measures	US\$ 1,394,062
Technical Assistance, Vehicles)	
TRAINING Equipment	1,027,500
Support Services & Facilities	692,400
Contingencies & Escalation costs	927,960
	<hr/>
	US \$ 4,041,922

In addition there are costs of production for crops which have been estimated at US\$4,436,000 (=J\$7,896,000). The Inter-American Development Bank (IDB) will provide:

(1) Grant - 75% of Soil Conservation costs	US\$ 1,045,546
- 100% costs for Technical Assistance Vehicles, Training etc.	1,027,500
Contingencies & Escalation 29.8%	721,625
	<hr/>
	US\$2,794,671

(2) Loans - Production Credit	US\$ 4,236,000
Loan to farmers to meet 25% Soil Conservation Costs	<u>848,515</u>
	US\$ 4,784,515

The GOJ will provide support services US\$ 692,400. The foreign exchange component of the project cost will be US\$ 3,657,800 (or 43%), all of which the IDB is being requested to provide. The remainder of its provision will be paid in local currency.

A P P E N D I X D

FORESTRY DEVELOPMENT PROJECTS

USAID ASSISTANCE

There is a growing demand for Forestry and Forest Products to meet the basic needs of the country's development. In 1978 alone, we imported \$61.0 million worth of timber and wood products, mainly paper materials and sawn timber for the construction sector. This raw material is vital to our housing programmes, for the furniture industry, for utility poles and railway sleepers, in packaging, for newsprint and paper for educational purposes - all essential items if we are to maintain and increase our present standard of living. The demand for these items is expected to increase as the population increases, and indications are that in the case of Pulp and Paper by 1990 the demand will reach four to five times the present figure.

Forestry development in Jamaica is now entering a very important phase where increasing investments will take place, both in Pinus caribaea plantations and the industries based on the raw materials they produce. There is the need for the development of hardwood plantations along similar lines, plantations for fuel, fodder and nectar for producing honey; and for soil and water conservation. Development along these lines will involve the important elements of training and research. Therefore there is a strong need for technical assistance in the following areas:

1. Hardwood Plantations: (a) There is the need to establish hardwood plantations to satisfy the demand of the furniture industry for both the local and export market. This venture will both earn and save the much needed foreign exchange. It is estimated that the establishment of 1,000 acres per annum on a 25-30 year rotation period will satisfy these demands. Presently, there is approximately 8,000 acres of hardwood plantations in the island mainly of mango, Hibiscus elatus, Honduras mahogany, Swietenia macrophylla, Jamaica mahogany, Swietenia mahagoni, and cedar, Cedrella odorana.

There are also small scattered stands of Eucalyptus and mixed native species.

- (b) The need exists for the establishment of fast growing species for soil and water conservation, for the production of fuel, fodder and nectar for honey and agro-forestry on a community forestry basis. Some research and planning will be required to identify the adaptable species and to develop a meaningful project on Forestry for Rural Community Development. The Forest Department has recently started trials on the Leucaena leucocephala, the giant Ipil Ipil, but this need to be expanded.

Plantations of 5,000 acres of fast growing species may prove capable of sustaining a wood-burning power station of the order of 50Mw.

2. Conservation and Recreation

Forest recreation in the island if properly developed and managed has the potential of earning much needed foreign exchange from tourism. The potential for development exists in the Blue Mountains, the Bull Head Mountains, the Cockpit Country, Lovers Leap and on the rivers and streams in Portland. Technical assistance is requested to prepare feasibility studies and implementing a project for forest recreation.

The existing recreation areas in the Blue Mountains are over utilized therefore there is the need for expansion and conservation of these areas.

3. Training

- (a) Professional training opportunities are requested for existing members of staff and new recruits.

The need exists to train 30 professional foresters in various forestry disciplines over the next four-year period. These foresters will satisfy the needs of both the Forest Department and Forest Industries Development Company.

- (b) The need exists for the training of 42 foresters at the technical level over the same four-year period to satisfy the requirements of both organizations. This training should be in general forestry so as to equip the foresters for general district forestry management.
- (c) In addition, training for both professional and technical foresters will be required in areas of logging, sawmilling, research, utilization, forest extension work, forest recreation and agro-forestry.

4. Wood Technology Studies

The Forest Department is planning to increase its existing hardwood plantations and the output of forest products from these plantations. For the marketing of these products wood technology studies must be undertaken. A fact finding mission could be undertaken with the view of preparing a plan of work. It is foreseen that some wood testing equipment will have to be purchased abroad. The Bureau of Standards has expressed interest in conducting the tests and the detailed need for equipment will be determined in collaboration with the Forest Department, Forest Industries Development Company and the Consultant.

5. Energy Substitution:

It is estimated that over 4.5 million mature Coconut trees primarily of the "Jamaica Tall" variety were mortally stricken by 1976. The Coconut Industry Board estimates that, of the residue of "Jamaica Tall" trees still bearing nuts, as much as 0.18 million are now dying annually. Over the next fifteen years an average

death rate of 65,000 to 100,000 trees per annum is expected for this and other less important varieties. There is also waste from natural forests cleared for new forest plantations. These raw materials can be used for the production of charcoal so as to satisfy the local demand, and for export. The present local demand is estimated as 15,000 tons per annum and is expected to increase with increasing fuel costs.

The Forest Department has done work along with the Tropical Products Institute in perfecting the production techniques using native hardwood species and the Mark V portable steel kiln. Very little work has been done by the Forest Department on the production of charcoal from dead coconut palm stems. Therefore, the need exists for the acquisition of additional technology and the expansion of charcoal production as a whole. Plantations of fast growing species of 5,000 acres on a 2 - 5 year rotation period, on a sustain yield basis will provide sufficient raw material to satisfy the local demand for charcoal and provide some for export.

There will be local costs involved, in all these requests, for providing for counterpart staff, transportation, office facilities and staff, local training; identifying, collecting preparing test material and for carrying out the required tests. Funds will have to be provided, where necessary, for subsistence expenses of the foreign experts and for other field operations to be identified at the time of detailed planning. All these local costs will have to be provided from our national budget. Detailed proposals identifying costs will be done at the time of project preparation.

MAY 12, 1980

FOREST DEPARTMENT