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UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D. C. 20523

JAMAICA

PROJECT PAPER

DEVELOPMENT OF ENVIRONMENTAL MANAGEMENT
ORGANIZATION (DEMO) PROJECT

BEST AVAILABLE DOCUMENT

AID/LAC/P-859

PROJECT NUMBER: 532-0173

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AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT DATA SHEET		1. TRANSACTION CODE <input type="checkbox"/> A = Add <input checked="" type="checkbox"/> C = Change <input type="checkbox"/> D = Delete	Amendment Number	DOCUMENT CODE 3
COUNTRY/ENTITY JAMAICA		3. PROJECT NUMBER 532-0173		
BUREAU/OFFICE Latin America and Caribbean USAID/Jamaica		5. PROJECT TITLE (maximum 40 characters) Devevelopment of Environmental Mngt. Org.		
PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY 09 3 1 97		7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4) A. Initial FY 92 B. Quarter 4 C. Final FY 97		

8. COSTS (\$000 OR EQUIVALENT \$1 =)						
A. FUNDING SOURCE	FIRST FY 92			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	700	-	700	7,750	-	7,750
(Grant)	(700)	-	(700)	(7,750)	-	(7,750)
(Loan)						
Other U.S.	1.					
	2.					
Host Country : GOI		92	92		1,012	1,012
NGO		98	98		1,638	1,638
TOTALS	700	190	890	7,750	2,650	10,400

9. SCHEDULE OF AID FUNDING (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
1) ARDN						500		3,250	
2) PSEE						200		1,500	
3) EHR								1,500	
4) HE								1,500	
TOTALS						700		7,750	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)	11. SECONDARY PURPOSE CODES
12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)	
A. Code	
B. Amount	

13. PROJECT PURPOSE (maximum 480 characters).

To strengthen the capability of public and private environmental organizations to manage Jamaica's most economically important natural resources.

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14. SCHEDULED EVALUATIONS	15. SOURCE/ORIGIN OF GOODS AND SERVICES
Interim MM YY MM YY Final MM YY 09 94 09 96	<input checked="" type="checkbox"/> 000 <input type="checkbox"/> 941 <input type="checkbox"/> Local <input checked="" type="checkbox"/> Other (Specify) 935

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment)

The Mission Acting Controller and Contracting Officer have reviewed and approved of the methods of implementation, procurement, and financing described in this Project Paper.

Raymond Dunbar
Raymond Dunbar, Contracting Officer

Marjorie Lewis 9/24
Marjorie Lewis, Controller

17. APPROVED BY	Signature <i>Robert S. Napper</i>	18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION
18. APPROVED BY	Title MARTIN F. NAPPER, RCO	MM DD YY 09 24 92
	Date Signed <i>MFN 8/21/92</i>	MM DD YY

PROJECT AUTHORIZATION

Name of Country: Jamaica
Name of Project: Development of Environmental Management Organizations (DEMO) Project
Number of Project: 532-0173

1. Pursuant to Sections 103, 104, 105 and 106 of the Foreign Assistance Act of 1961, as amended, I authorize the Development of Environmental Management Organizations Project for Jamaica, involving planned obligations not to exceed \$7,750,000 in grant funds over a five-year period from the date of authorization, subject to the availability of funds in accordance with the USAID OYB/allotment process, to help in financing foreign exchange costs and local currency costs (to the extent permitted under USAID Buy America policies) for the project. The planned life of project is five years from the date of initial obligation.

2. The purpose of the project is to strengthen the capability of public and private environmental organizations to manage Jamaica's most economically important natural resources. To accomplish the project, USAID will finance technical assistance, training, policy studies, equipment, commodities, and other costs.

3. The Agreements which may be negotiated and executed by the officer to whom such authority is delegated -- in accordance with USAID regulations and Delegations of Authority -- shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as USAID may deem appropriate.

4. Source and Origin of Commodities, Nationality of Services:

(1) Commodities financed by USAID under the Project shall have their source and origin in the United States except as USAID may agree otherwise in writing, and, except as follows:

- (a) Up to \$100,000 per transaction of U.S. origin commodities may be procured in Jamaica; and
- (b) Commodities not exceeding \$5,000 per transaction may be procured in Jamaica from USAID Geographic Code 935 sources.

(2) Except for ocean shipping, the suppliers of commodities or services shall have the United States as their place of nationality, except as USAID may agree otherwise in writing, and, except as follows:

- (a) Up to \$250,000 per each contract for professional services may be procured from Jamaican firms or individuals.

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(3) Ocean shipping financed by USAID under the Project shall, except as USAID may otherwise agree in writing, be financed only on flag vessels of the United States.

(4) Notwithstanding the foregoing source, origin, and nationality eligibility designations, USAID geographic code 935 shall be the authorized code for the following:

- (a) 50% of the component support to NEST and the NG(s);
- (b) 50% of the component support to the NRCA; and
- (c) 25% of SITE activities.

5. Conditions Precedent to Disbursement

First Disbursement. Prior to the first disbursement under the Grant, or to the issuance by A.I.D. of documentation pursuant to which disbursement will be made, the Grantee will, except as the Parties may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D.:

- (a) A statement of the name of the person holding or acting in the office of the Grantee specified in Section 8.2., and of any additional representatives, together with a specimen signature of each person specified in such statement.

Additional Disbursement.

Except as the parties may otherwise agree in writing:

- (a) Prior to commitment or disbursement of any Project funds, except for pre-implementation technical assistance, the GOJ will provide evidence in form and substance satisfactory to USAID that the DEMO Project Coordinating Committee (PCC) has been established.
- (b) Prior to commitment or disbursement of any Project funds, except for pre-implementation technical assistance, the GOJ will provide in form and substance satisfactory to USAID evidence that it has recruited and staffed the NRCA Division Heads, Financial Manager, and PMU positions.

6. Special Covenants

Project Evaluation. The Parties agree to establish an evaluation program as part of the Project. Except as the Parties otherwise agree in writing, the program will include, during the implementation of the Project and at one or more points thereafter:

- (a) evaluation of progress toward attainment of the objectives of the Project;

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- (b) identification and evaluation of problem areas or constraints which may inhibit such attainment;
- (c) assessment of how such information may be used to help overcome such problems; and
- (d) evaluation, to the degree feasible, of the overall development impact of the Project.

Memorandum of Understanding. The parties agree to establish a Memorandum of Understanding among the NRCA, NEST, and USAID under which assistance will be provided to NEST and NGOs. The Memorandum, among other matters, will provide for NGO assurances for the provision of at least 15 percent of the value from NGO resources of the assistance received under the Project. The Memorandum of Understanding must be executed before the technical assistance contractor may provide funds to NEST or the NGOs.

Maintenance Plans. Before authorizing any procurement of non-expendable property, the PMU will furnish, in form and substance satisfactory to USAID, a maintenance and use monitoring plan for equipment (including vehicles) procured under this Project.

Compensation Levels. The GOJ shall set compensation levels for PMU employees at a level that will attract and keep qualified personnel.

Schedule. The GOJ shall submit in form and substance acceptable to USAID a detailed time-phased Project schedule and implementation plan for each fiscal year no later than 60 days before the beginning of the GOJ fiscal year.

Environmental Assessment Requirements. If determined to be necessary by the USAID Environmental Officer, the GOJ shall perform or arrange to have performed an Environmental Assessment prior to the commitment of Project funds for a particular SITE location. Project implementation plans will be modified, as appropriate, to incorporate recommended mitigation measures developed under any assessments performed.

September 24, 1992
Date

Robert S. Queener
Robert Queener
Director

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DEVELOPMENT OF ENVIRONMENTAL MANAGEMENT ORGANIZATIONS

VOLUME I: PROJECT PAPER

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ACRONYMS USED IN PROJECT PAPER:

CBA	Community-based Association
CIDA	Canadian International Development Agency
DEMO	Development of Environmental Management Organizations
EAI	Enterprise for the Americas Initiative
EEC	European Economic Community
EFJ	Environmental Foundation of Jamaica
GEF	Global Environmental Facility
GOJ	Government of Jamaica
IDB	Inter-American Development Bank
IEE	Initial Environmental Examination
JANEAP	Jamaica National Environmental Plan
JCDT	Jamaica Conservation and Development Trust
JEF	Jamaica Environmental Fund
JES	Jamaica Environmental Strategy (USAID)
JHTA	Jamaica Hotel and Tourism Association
MTE	Ministry of Tourism and Environment
NEST	National Environmental Societies Trust
NGO	Non-governmental Organization
NRCA	Natural Resources Conservation Authority
NRM	Natural Resources Management
OECF	Overseas Economic Cooperation Fund (Japan)
PARC	Protected Area Resource Conservation Project
PCC	Project Coordinating Committee
PIOJ	Planning Institute of Jamaica
PACD	Project Assistance Completion Date
PII	Project Implementation Letter
PMU	Project Management Unit
PP	Project Paper
PVO	Private Voluntary Organization
RFTP	Request for Technical Proposals
SITE	Strategic Interventions in the Environment
SOW	Scope of Work
TA	Technical Assistance
TOR	Terms of Reference
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
UWI	University of the West Indies

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SUMMARY AND CONCLUSIONS

A. PROJECT SUMMARY

Jamaica has been known as "the land of wood and water," but this reputation is clearly threatened. Human development in Jamaica has diminished the island's rich biodiversity and depleted the environmental resources on which stable and sustainable long term development depends. Unmanaged growth and natural resource consumption have created environmental problems that exceed the present capacity of institutions to control.

The Development of Environmental Management Organizations (DEMO) Project Paper contained herein provides a framework for USAID collaboration with a wide range of interested parties--the Government of Jamaica, non-government organizations (NGOs), and selected public action groups--to better manage the natural resource base. A key DEMO Project theme is the need to focus priority attention on the management of the natural resource base which preconditions the trajectory of tomorrow's economic growth, including tourism. It is intended that this alignment of environmental concerns with those of national economic development will be a powerful tool in convincing those who are at the heart of Jamaica's environmental degradation problem to become part of the solution of tomorrow.

To make this transition, Jamaica will need to be endowed with strong environmental institutions. The DEMO Project will support the evolution of two key nascent organizations: the Natural Resources Conservation Authority (NRCA) and the National Environmental Societies Trust (NEST), an umbrella NGO group.

The Project targets four geographic areas where environmental management activities will be promoted to protect economically important natural resources and ecological systems and to resolve critical environmental issues. These activities will serve as a laboratory for strengthening NRCA by enabling collaborative work with NGOs and other GOJ agencies to define management responsibilities; develop model resource conservation programs; and apply knowledge gained from these activities to formulating national environmental policies and standards.

The Project will also build on the initiatives of the Protected Areas Resource Conservation (PARC) Project. New parks will be identified, related institutions will be strengthened, and measures will be taken to establish the long-term sustainability of the National Park system. *(Note: Phase II of the PARC Project is discussed for purposes of provisional planning only. It is expected that funding for this activity will be added to the DEMO Project, but subject to satisfactory design of a DEMO PP supplement and availability of funds at that time. No description of the PARC II component is contained herein.)*

The DEMO Project is conceived as a continuation of a long-term USAID commitment to assist Jamaica in the management of its natural resources. Earlier USAID-financed projects, including the Jamaica Country Environmental Profile (1987) and the Jamaica Environmental Strategy (1991), have emphasized the need for improved environmental management. The PARC project has been an important first step to protect resource values of national significance and other USAID technical assistance related to urban and natural resource management has provided the building blocks for a new effort to strengthen environmental management in Jamaica. The DEMO Project will complement the Environmental Foundation of Jamaica (EFJ) grant program activities by strengthening the technical and administrative abilities of participating organizations and improving their capacities to use EFJ funds effectively.

B. PROJECT PAPER ORGANIZATION

The DEMO Project Paper is articulated in two separate volumes: the body of the document (Volume I) contains the basic project description and specific implementation guidelines, and the PP Annexes (Volume II) contain the background materials and specific analysis generated during PP design. (Volume II is available upon request at the USAID/Jamaica office.)

C. PROJECT PAPER DESIGN TEAM

The Development of Environmental Management Organizations Project was designed by the following USAID/Jamaica staff:

Mr. Stephen Szadek, Project Coordinator
Mr. Stephen Reeve, Environmental Advisor
Mr. Christopher Brown, Program and Policy Support
Mr. Mark Nolan, PARC Project Officer

working in collaboration with the following contracted expertise:

Mr. James Tolisano, Ecologist
Mr. Bruce Bayle, Natural Resource Management Specialist
Dr. Jeff Brokaw, USAID LA/C, Environmental Specialist
Dr. Winston McCalla, Attorney/Institutional Specialist
Mr. Charles Stathacos, Economist/Financial Analyst
Dr. Gene Wilken, USAID Environmental Advisor/Caribbean
Dr. Pamela Stanbury, Social Scientist, USAID R&D
Mr. Alan Randall, The Nature Conservancy

and with the assistance of members of the Government of Jamaica, the NGO community, and the USAID/Jamaica Environment Committee.

I. BACKGROUND AND PROJECT APPROACH

A. COUNTRY SETTING

The island of Jamaica is blessed with a tremendous variety of tropical forests, wetlands and marine ecosystems. This complex mixture of biotic communities contains some of the most diverse and unique plant species on the planet.

In the past century, Jamaica's landscape has been significantly altered by agriculture and urban development activities. Nearly one half of the land area is considered to be in agricultural production. As the economy has shifted from rural agricultural subsistence to modern industrial growth, movement to population and tourism centers has occurred. Especially in recent years, there has been rapid urbanization.

It is projected that Jamaica's population will grow from 2.3 to 3.3 million over the next three decades and that virtually all of that growth will occur in and around urban areas. This is inevitable since Jamaica's cities and coastal tourism developments are catalysts of economic growth and are major contributors to the output, employment and income of the nation. The unfortunate byproduct of this trend is the serious degradation of environmental systems and natural resources near these population and economic growth centers.

B. ENVIRONMENTAL ISSUES

The Jamaica Environmental Strategy, undertaken by USAID in 1991 as an analytical background to this Project Paper, identified critical environmental issues confronting the nation. These were based on a ranking of ways particular issues affect human health, economic development, monetary costs, and damages to biological systems. The most significant issues were listed as follows:

Coastal Zone Degradation: Most of Jamaica's urban development has occurred along coastal areas and this development has placed heavy demands on the very fragile coastal ecosystems. Included among the primary causes of this degradation are (1) lack of basic planning for urban development, agriculture, tourism, and industry, (2) degradation of upstream watersheds, (3) inappropriate management of liquid and solid wastes which contaminate the soils and water of estuary and near-shore marine environments, and (4) lack of enforcement of standards and guidelines for water quality, fisheries management, and zoning. Effects have included loss of important habitats, including mangroves, coral reefs, and sea-grass beds. Related effects include beach erosion, reduction in aesthetic quality, increased incidence of human health problems, and overall imbalance in the ecosystem. The location of the majority of Jamaica's tourism industry in the coastal areas points to an extremely strong

linkage between this degradation and future economic growth. Specific objectives of coastal zone management efforts should relate to the development of a comprehensive program to allow for better management of marine and near shore terrestrial environments, and to allow for sustainable exploitation of those resources in a manner that does not disrupt balanced ecosystems.

Watershed degradation: Extensive removal of vegetative cover, especially on steep hillsides, has resulted in wide fluctuations in surface flows and groundwater recharge, excessive soil loss and impaired agricultural productivity, and deposition of sediment loads in downstream coastal areas, where they degrade ecosystem conditions. Soil loss rates in excess of 50 tons per acre have been recorded in many watersheds, and siltation is eliminating the viability of both Kingston water supply reservoirs. All 33 of the designated watersheds in Jamaica have been identified to be in poor condition, and 19 are reported to need urgent rehabilitation. The causes of these hydrologic and soil conditions are the unmanaged clearing of land for agricultural production and the *ad hoc* removal of forest cover for production of fuelwood, charcoal, and construction materials. The primary objectives of watershed management and rehabilitation are to apply effective planning and management techniques, and to reduce the loss of forest and other vegetative cover.

Water pollution: Some water supply sources and downstream wetland, estuary, and marine ecosystems are being contaminated by sediments, pathogens, and chemicals. This contamination primarily results from deforestation of upper watersheds, improper disposal of liquid and solid wastes, and runoff contaminated by agrichemicals. If water quality conditions continue to degrade, restoring water resources to acceptable standards will become very costly, if not irreversible. The objectives of water quality improvements are the rational management of sewage, solid wastes, and industrial wastes essential to protect human health and the growth of the economy.

Degradation of habitat: In recent years the biological diversity of terrestrial and marine ecosystems have been adversely affected by (1) clearing or degrading of forests, (2) soil loss, (3) contamination of soil and water resources from improper disposal of liquid and solid wastes, (4) poorly planned urban development, and (5) excessive wildlife harvests. The results of these actions are now evident in the increasing number of endemic plant and animal species that are endangered and threatened with extinction. Objectives in maintaining and improving habitats should focus on identifying forest and marine ecosystems where both flora and fauna are under threat, and planning for their protection, including establishing protected areas.

The persistence of these issues is inextricably linked to institutional deficiencies which result in a lack of:

- * public awareness of the importance of environmental problems;
- * leadership within the government in establishing and promoting clearly defined environmental policies;
- * standards, regulations, and guidelines for maintaining a desired environmental quality;
- * trained personnel and funding to monitor environmental quality concerns; and
- * reliable, systematic ecological data to guide planning and decision-making.

Efforts to reverse environmental degradation in Jamaica must begin by working directly with these institutional problems.

C. INSTITUTIONAL CIRCUMSTANCES

The PP institutional analysis (Annex E) tracks the recent pattern of change of GOJ institutions as they ultimately coalesced in the early 1990s around the Jamaica National Environmental Action Plan (JANEAP) and the Natural Resources Conservation Act. This latter action laid the foundation in June, 1991 for the Natural Resources Conservation Authority (NRCA) as the primary agency for national environmental management in Jamaica. The NRCA, which is located within the newly created Ministry of Tourism and Environment, supersedes the former Natural Resources Conservation Department (NRCD) and has a broadened mandate in:

- * articulation, coordination, and implementation of a national environmental policy;
- * establishment of a regulatory, monitoring and enforcement programme; and
- * coordination with external agencies, including NGOs and private sector entities.

The ten-member NRCA Board of Directors has begun to address opportunities facing the new Authority. An Executive Director has been recently appointed and this individual, working together with the Board, has placed an early emphasis on clarifying the agency's substantive priorities, establishing administrative arrangements and developing an operational strategy for NRCA. Until this task is done, the agency has needed to operate on a firefighting basis to address emergency problems rather than implement planned activities as will be possible when the requisite staff and substantive focus are in place. NRCA has recruited and expects to fill key senior staff positions by October, 1992. The GOJ has demonstrated its commitment to NRCA's broadened mandate by the approval of a 1992-93 operating budget that will accommodate anticipated new activities.

The PP analysis concludes that the NRCA will provide, if properly organized, the critically important governmental policy and regulatory framework for sound environmental action in Jamaica.

Its location in the Ministry of Tourism and Environment will encourage more effective attention to the need for a coordinated relationship between economic and environmental development.

Non-governmental organizations (NGOs) have an important role to play in environmental education and project implementation, particularly through involvement of the general public. However, these traditionally small and heterogeneous organizations must overcome administrative and institutional deficiencies before they are technically and financially capable of shouldering a significant portion of the task before them. An important organizational innovation in this respect will come through the structuring of umbrella environmental coordination organizations, much like trade associations in the private sector, which can provide the critical mass necessary to the coordination of standards, policies, and requisite skills of member NGOs.

The Project Paper team concludes that one umbrella organization, the National Environmental Societies Trust (NEST), is currently the best equipped to represent the broader interests of environmental NGOs. Of the estimated 40 known environmental groups, 24 are already members of NEST, and contact is also maintained between NEST and a number of non-member NGOs. The stated mission of NEST is to encourage and support citizens' participation and actions for the conservation, protection, and enhancement of the natural environment. NEST is governed by a board of 12 members, seven of which are representatives of NGO member organizations and five are professionals from the environmental, business, education, and legal fields. NEST is still a relatively untested organization, however. It currently has a small office with one professional program officer. NEST's future plans include:

- * engaging government and the private sector in issues relating to national environmental policy;
- * continuing its role of assisting members obtain funding;
- * delivering member staff training and outreach services; and
- * coordinating a national public awareness campaign.

D. SOCIO-ECONOMIC CONDITIONS

The Jamaican economy has historically depended on its natural resource base, initially in agriculture (especially sugar and bananas), then as a leading world supplier of bauxite and alumina in the 1960s and 70s, and finally, in tourism. These three sectors played the lead role in moving real annual national GDP growth from negative values in the mid-1980s to a +3.8% in 1990. It is important to compare current efforts to foster economic growth on the current reality of environmental stress which has resulted from the expanding needs of the people of Jamaica. Continued economic growth will be central to Jamaica's future-- its national income, the quality of life of its people, and even its political stability. It also runs headlong into the real

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limitations placed on it by the national resource base. Attempts at prospective study of economic growth over the next decade can help to understand some of the consequences of mismanaged development, not just environmentally, but on the economic growth process, as well. For example, the Annex D illustrative analysis of the economic impact on the tourism sector of environmental inaction demonstrates the potential to lose billions of US dollars of foreign exchange over the course of the next decade.

The USAID Jamaica Environmental Strategy (JES), underscored the critical impact that sound natural resource management will have on the future of each of today's productive sectors: a quality environment for tourism, sustainable soil and water management for agriculture, and pollution control and reclamation of mined lands in the case of bauxite production.

The JES also makes clear that, of all the various aspects of natural resource management requiring attention, that of tourism is the most pressing and important of national priorities. Tourism is currently at the forefront of national economic development. Tourism foreign exchange receipts actually matched those of bauxite in 1990, and appear to be on a healthy growth track through the end of the century.

Most Jamaican environmental issues flow from the social and economic needs of the people of Jamaica, themselves closely linked with both the direction and intensity of national economic growth. National or local decision-making promoted by the DEMO Project should, therefore, systematically review the social and economic needs of the downstream populations who are impacted on by those decisions. This will prove vital to the success of DEMO actions, from policy formulation to specific field operations. It will drive the nature of Project public awareness programs and it will influence government and NGO staffing and organization.

E. FRAMEWORK FOR GOJ-DONOR COLLABORATION

Because of the nature, newness and size of the task to be addressed by the DEMO Project, official coordination between the Government of Jamaica and the donor community will be important. The GOJ will play a leadership role in this collaboration effort, however, donor expertise and resources will be indispensable to the implementation of change in this sector.

The GOJ Perspective: Discussions held with government ministers and senior officials of various GOJ agencies confirm that the momentum to address environmental issues is now evolving rapidly and the GOJ is favorably disposed to a nation-wide effort to garner consensus on environmental management issues. The establishment of the NRCA will respond to the felt need to eliminate much of the fragmentation and internal conflict that

has marked past GOJ environmental management efforts. The emergence of NRCA will also provide a data base, against which changes in the environment may be evaluated, and around which NGOs, private groups, and donors may frame their activities and expectations. The GOJ fostering of such specific framework mechanisms as the Jamaica National Environmental Action Plan (JANEAP) and the National Forestry Action Plan, represent current national efforts to reach solutions to the problems of today's Jamaica, and NRCA will be the GOJ's front-line agent in orchestrating a framework for their resolution.

The USAID Perspective: Current strategic thinking in both the Latin American Bureau and USAID/Kingston focus on natural resource management, especially in support of national economic growth, as central to the USAID mandate in Jamaica. The DEMO Project is considered "mainstream" to the approach which USAID expects to take over the next 5 years, and is specifically structured into the Mission's Action Plan Objective #2: "To Improve Environmental Management, especially as it relates to support for broad-based and sustainable economic growth."

The DEMO Project will build on past USAID/Jamaica experience in this area. Major recent activities include the Jamaica Country Environmental Profile, the Jamaica Environmental Strategy, the Protected Areas Resource Conservation Project, the Hillside Agriculture Project, the North Coast Development Project (co-financed with Japan), the Montego Bay Development Planning Project, the Tourism Action Plan, and a range of project activities supporting urban planning, shelter and environmental services and infrastructure.

In 1991, the United States and Jamaica negotiated an 80% reduction in this country's PL480 debt (from US\$271 million to US\$54 million). Agreement was also reached, as part of the U.S. Enterprise for the Americas Initiative (EAI) that the J\$ equivalent of some US\$9.2 million of remaining interest payments would be deposited into a special fund to support NGO projects in the environmental area. This fund is an important contribution to broad-based environmental management and serves as a strong parallel rationale for Project reinforcement of NGO capability.

Other Donors: A number of other foreign donors (Canada, EEC, UNDP, IDB, Japan, the Netherlands) have demonstrated an interest in fostering environmental management, both through governmental and non-governmental implementing agents. The DEMO Project expects to coordinate with these donors through the special NRCA Donor Coordination Committee (see Section II.A.2.), as well as through *ad hoc* informal discussions among technical staff.

Canada: The Canadian International Development Agency (CIDA) is currently proposing an institutional development project focused on the NRCA and NGO groups. The financing for this project is

estimated at Canadian \$25 million over ten years, with activities designed to assist in the organizational and regulatory capacities of NRCA, mobilization of community-based associations to act on identified environmental problems, and development of forestry activities emphasizing watershed management, public education, and institutional strengthening in this public sector. The proposed CIDA Project has not yet identified detailed components or activities which will be implemented, although this process is presently underway.

EEC: The European Economic Community (EEC) is active in the areas of waste water and potable water management. Their funding for Jamaica is via LOME III and IV funds. In Negril and Ocho Rios the EEC is funding sewage treatment plant developments, amounting to an estimated US\$25 million. Related developments for the future include: new road construction on the south coast near Black River, agricultural support programs, and land titling. The EEC has co-financing funds available to fund Jamaican environmental projects in which European environmental NGOs wish to participate. A small fund is available within the EEC to finance small-scale environmental projects.

UNDP: The United Nations Development Programme (UNDP) is facilitating the Town Planning Department to develop urban plans for Negril, May Pen, Ocho Rios and Mandeville. Future plans include assistance in establishing the NRCA and in strengthening the environmental management capacity of NGOs. However, there are no defined components or activities at this time, and UNDP has indicated its desire to complement DEMO Project activities.

IDB: The Inter-American Development Bank (IDB) has no on-going environmental projects at this time. The IDB is, however, providing financing for the development of infrastructure that can influence the impact of the tourism sector on the environment. IDB funds are being directed toward improved water supply systems, sewage treatment facilities, and road improvements in and around Montego Bay and Ocho Rios. Additionally, the Jamaica Trade, Finance and Divestment Sector Loan, which is presently being negotiated, has very stringent conditions requiring the GOJ to support the establishment and empowerment of the NRCA. The IDB will finance an environmental planner/resource economist to be placed within the NRCA for 18 months to provide institutional support. The Terms of Reference for this specialist are broad, and cover training and technical assistance in preparing an organizational development plan and fulfillment of the mandates of the National Environmental Action Plan which is to guide the operation of NRCA.

Japan: Japan (OECF) and USAID are co-financing major tourism infrastructure projects for the north coast. These activities are to include a sewage system improvement project for Montego Bay, a Lucea-Negril water supply system expansion, improvements

to the north coast highway, a Montego Bay drainage and flood control project, and an Ocho Rios cruise ship facility project.

Netherlands: The Government of the Netherlands is facilitating a community development project within the Rio Grande Valley in Portland Parish. These activities are occurring on the perimeter of the Blue Mountains/John Crow Mountains National Park, and are complementary to buffer zone management activities proposed as part of the eventual National Park expansion component (PARC II).

II. PROJECT DESCRIPTION

Discussions with Jamaican governmental, NGO, and private groups, and the various preparatory analyses undertaken by USAID over the last year, have led the Mission to program USG resources for the DEMO Project, starting in FY92. For purposes of clarity and up-front strategic understanding of project objectives and expectations, the DEMO Project is described here in terms of its Project Logframe, which is presented in complete form in Annex A.

A. GOAL

The project goal is the longer-term and overarching objective toward which this 5-year activity will contribute. While less measurable and less directly linked to the Project than design aspects at the lower levels of the Logframe hierarchy, this Project "vision" statement serves as the basic point of reference against which ongoing Project implementation decision-making may be carried out. Consistent with USAID/Jamaica strategy, as embodied in the Action Plan, the goal of the DEMO Project is "to promote stable, sustainable, and broad-based economic growth." The project design therefore deliberately accords priority targeting of resources against those aspects of natural resource management which best support this economic goal.

B. PURPOSE

The project purpose is a measurable statement of the strategic objectives which will be achieved by the end of the 5-year activity. The purpose of the DEMO Project is "to strengthen the capability of public and private environmental organizations to manage Jamaica's most economically important natural resources." Achievement of this goal and purpose assumes a strong national consensus which combines the best efforts of government (policy and regulation), NGOs (consumer and public awareness) and business (production and revenue generation) to rectify environmental problems in target areas. The Project will achieve two kinds of impacts. It will strengthen the lead environmental institutions so that they will continue to improve environmental management during and beyond the life of the Project. It will also achieve measurable environmental and economic benefits.

At the end of the Project, the following indicators will serve as guideposts to measure project success at the purpose level:

- * The NRCA will be providing substantive leadership on priority natural resource management policy and regulatory issues, especially in support of national economic growth;
- * The NRCA will be receiving revenues from user fees, penalties and other sources equal to at least 25% of its operating costs;
- * The NEST will be receiving revenues from membership service fees and project support funds from local and other international donors, and will have established continuity of financing recurrent expenses;
- * The NRCA and NEST will be mobilized and deploying resources more effectively for environmental management, drawing on a growing environmental network from NGOs and the informal sector, to community leaders and business people, to government agencies and donors;
- * At least ten technically and financially viable Jamaican NGOs will be engaged in environmental mitigation, including areas directly related to key issues of national economic growth (e.g., tourism);
- * SITE activities will be demonstrating the application of practical techniques to solve on-the-ground problems in such areas as waste management, watershed restoration, and reef protection;
- * Local Environmental Management Councils will have obtained experience and organizational development sufficient to become technically and financially sustainable over the long term and to provide direction and coordination for local environmental improvements; and
- * Public and private awareness of, and dialogue on, priority natural resource management issues in support of economic growth will be considered routine.

C. PROJECT OUTPUTS

The project outputs are the tangible and measurable achievements of the Project which, if fully completed, should result in attainment of the Project purpose. The DEMO Project articulates its outputs around four distinct but closely-related components:

- * institutional support to NRCA;
- * institutional support to NEST and NGOs;
- * SITE ("Strategic Interventions in the Environment") activities; and
- * PARC Phase II activities (provisional).

As noted earlier, the PARC Project Phase II is discussed here for purposes of provisional planning only. Funding for this activity will be added to the DEMO Project subject to satisfactory design of Phase II and availability of funds at that time.

Component 1. Institutional Support to NRCA

A strong and effective NRCA will provide a critically important foundation to the development of national environmental action in Jamaica. The DEMO Project will provide the necessary assistance to the NRCA to permit the generation of a comprehensive Environmental Management Program through the Year 2000. Salient specific achievements of this Program will include:

- * A participatory approach to national planning that involves stakeholders early in the process and gains their commitment to national environmental objectives;
- * Program direction for NRCA (purposes, end products and success criteria) based on inputs from its Board and the key players who can influence the success of its programs;
- * Annual action plans that coordinate the contributions of other participants and build on inputs from the public and private sector;
- * Agreement among all concerned parties on the proper role of the GOJ and the non-governmental groups in relationship to national environmental management;
- * The establishment of an environmental information system to serve as a framework for environmental quality standards and to guide natural resource use decision-making;
- * The development and agreement to use Environmental Impact Assessment for public and private projects;
- * The establishment of key environmental regulations, standards, and guidelines, including realistic provisions for their enforcement, while pursuing non-regulatory approaches for voluntary compliance; and
- * A planning and budgeting capability within NRCA that will enable it to attract other donor resources, secure additional revenues and design bankable projects, permitting NRCA to effectively function with reduced dependence on annual GOJ budget allowances.

The Project will assist the NRCA to take a lead in defining both its own mission, based on legal mandate and available resources, as well as the precise roles and responsibilities to be fulfilled by other GOJ agencies. NRCA will be assisted to develop procedures to gather and coordinate information that serves as the basis for policy as well as compliance. The activities of this component will:

i. Provide organizational development services to strengthen NRCA in the following areas:

- * Program direction
- * Human resource development
- * Financial management and physical plant
(These elements of an NRCA operational strategy are described in detail in Annex H.)

ii. Develop a participatory framework for policy development that fosters sustainable economic development.

The Project will assist the NRCA to participate in the design of national economic policy in order to assure due consideration of environmental concerns and the sustainability of growth and development over the long term. Technical assistance and training would be provided to the NRCA to analyze the relationships between economic activities and the environment and the possible impact of economic policies--both macroeconomic and structural--on the environment. Where trade-offs are identified between desired environmental policies and growth, price level, fiscal balance and other economic objectives, NRCA will be assisted to identify mitigation measures.

iii. Establish an environmental information system to serve as a framework for environmental quality standards and to guide land and resource use decision-making;

The Project will contract with local or international firms to assist the NRCA, pertinent GOJ agencies and the UWI to establish an environmental information system designed to:

- * Address needed management decisions;
- * Focus on key resources at greatest risk of destruction or degradation;
- * Enable policy makers and individuals to understand the tradeoffs involved in environmental policy;
- * Establish sound financial bases for project design and management;
- * Serve as the basis for compliance; and
- * Incorporate locally maintained information systems (initially those prepared for the SITE areas).

iv. Assist the NRCA to develop environmental protection regulations and enforcement framework;

The Project will assist the preparation of environmental regulations defining the parameters for protection of key environmental resources, including: water quality; conservation of critical terrestrial and marine habitats; sensitive lands, estuaries and marine environments; and treatment and management of liquid and solid wastes. It is intended that the regulations be developed as an outgrowth of requirements to protect resources identified in the SITE activities (see Component 3 below). The Project will provide technical assistance and commodity support for the presentation of technical training courses to NRCA staff and appropriate GOJ agencies on the prepared environmental regulations, the legislative framework guiding their enforcement, and the use of handbooks detailing their content.

It is recognized that the NRCA is only beginning its newly-defined mission. Technical assistance under this component of the DEMO will begin in earnest only after the new division heads are in place, a Project Management Unit (PMU) is established, and a Technical Assistance Contractor (TAC) is in place to carry out Project procurement, expenditure and financial reporting functions (see Part III.A.2). Project start-up technical assistance will include assistance in the preparation of the comprehensive environmental management program outlined above, creation of an action plan for staff recruitment and organizational development, development of a management information system, and targeted technical assistance to enable the agency to meet its priority commitments.

Component 2. Institutional Support to NEST and NGOs

Strong and effective NGOs will provide a critically important foundation to the development of national environmental action in Jamaica. The DEMO Project will assist the national NGO umbrella organization--the National Environmental Societies Trust (NEST)--to implement NGO training and technical assistance programs in order to enable NGOs and community-based groups to develop and sustain their environmental management missions. Under this component, the Project will accomplish the following:

- * A strong and clearly defined role for NEST based on input from Board and membership;
- * The establishment of a NEST membership services delivery system that includes focussed and germane training programs and a range of technical outreach services that expands NGOs' capacities to become self-sustaining;
- * Annual NEST action plans that coordinate the contributions of other participants and build on inputs from the public and private sector;
- * A capacity within NEST to undertake *ad hoc* policy analysis and engage the GOJ and private groups in environmental policy dialogue;
- * A financial planning and management capability within NEST that will enable it to attract other donor resources, secure additional revenues, design bankable projects, and establish continuity of financing recurrent expenses;
- * An environmental network of NGOs, community-based groups, community and business leaders, government agencies and donors exchanging ideas, information and resources;
- * Participation of at least 100 representatives of NGOs and community-based groups in training programs designed to enhance their abilities to sustain environmental management activities; and
- * At least 10 technically and financially viable NGOs will be engaged in environmental mitigation and education, including areas directly related to key issues of national economic growth (e.g., tourism).

To achieve these outcomes, the Project will:

- i. *Provide organizational development services to strengthen NEST in the following areas:*
 - * Program direction
 - * Human resource development
 - * Financial Management and Physical Plant
(These elements of a NEST operational strategy are described in Annex H.)
- ii. *Develop NEST information systems that:*
 - * Allow NGOs to share lessons learned
 - * Encourage NGOs to participate in providing better environmental data
 - * Enable individuals and communities to understand the tradeoffs involved in environmental policy
 - * Establish sound financial bases for project design and management
- iii. *Implement training programs for NGOs and Community-based groups;*

The PMU and NEST will identify NGOs and community-based associations who can benefit from organizational development and skills training. The TAC will grant funds to NEST (based on a detailed project proposal approved by the Project Coordinating Committee) to conduct a series of regional workshops for a variety of NGOs active in, or with a demonstrated mission that includes environmental concerns. These NGOs will include both those participating in SITE activities and those participating in the Environmental Foundation of Jamaica (EFJ) grant program. The workshops will be held in regional centers to minimize travel requirements for participants, and to encourage greater participation from local or regional groups. Workshops will address the following topics:

- * Administrative skills, office management, and project accounting, reporting and evaluation practices;
- * Strategies for generating sustainable revenues;
- * Proposal writing;
- * Environmental education methods;
- * Community organization and mobilization;
- * Conflict resolution and management of disputes;
- * Environmental regulations and standards--what exists and what measures are available for enforcement; and
- * Creating and implementing a local conservation strategy.

Financial support will be provided to contract additional required professional services from an established local PVO to assist NEST to fulfill its Project training obligations.

iv. Conduct technical outreach services to NGOs

Upon the recommendation of the PMU and the approval of the Project Coordinating Committee, and based on a detailed project proposal, the TAC will grant funds to NEST to provide technical assistance in response to NGO requests. These requests are expected to emerge from site-specific or group-specific issues identified in the course of the training workshops described above and are envisioned as a link to these training efforts. NEST will use in-house resources or contracted professional services to assist groups to (a) define problems, (b) compile appropriate background data or information to document a problem, (c) prepare formal proposals with potential solutions to respond to the identified problems, (d) solicit outside financial or technical assistance as needed, or (e) implement conservation strategies. This outreach service will assist preparation and implementation of environmental management activities that can be carried out under the EFJ grant program or the SITE component of the DEMO Project.

Component 3. Strategic Interventions in the Environment (SITE) Activities

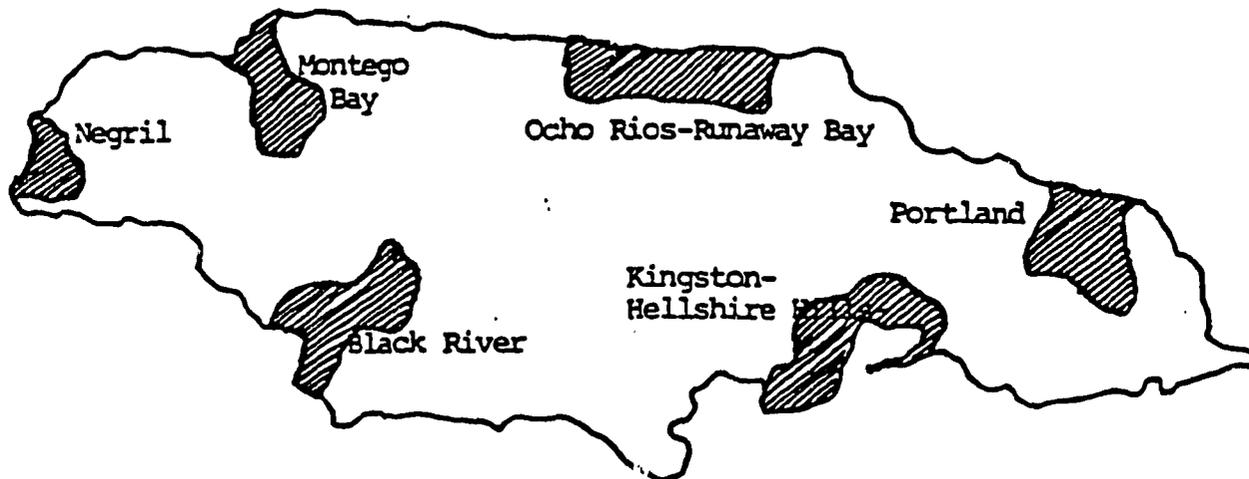
The Project will focus field activities in four selected "areas of environmental concern." The SITE activities will facilitate GOJ-NGO-private sector collaboration on actual resource management. The SITE activities will enable the lead government agency, NRCA, to work with GOJ land and resource managers and NGOs to resolve critical problems; define management responsibilities; develop model programs for data collection and management, planning, resource conservation, environmental controls, regulations and enforcement; and apply knowledge gained from these activities to formulate national policies and standards.

Six geographic areas of environmental concern were identified by the Project Paper team as those now undergoing or expected to undergo environmental stress to an extent that the national economy may be impacted or environmental resources of national significance may be threatened. The selection criteria employed to identify areas of environmental concern are as follows:

- * *An area whose tourism-based economy both makes a significant contribution to the national economic base and is threatened by environmental degradation;*
- * *An area of economically significant environmental attributes which are threatened by existing or proposed development;*
- * *A fringe area of a population growth center where residential development, farming practices and other land uses threaten to degrade significant soil, water, vegetation and other environmental resources which are crucial to the long-term sustainability of the economy.*
(The indicators of these criteria are described in Annex I.)

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Figure 2: Areas of Environmental Concern



Of the six identified areas--Negril, Montego Bay, Black River, Ocho Rios to Runaway Bay, Portland/Port Antonio, and Kingston/Hellshire Hills--it is proposed that the Project carry out activities in four. The activities would be implemented in two overlapping stages over a five-year period. During the first stage (the first 24 months), the focus will be on two areas which meet SITE area selection criteria described below. Second stage activities will be carried out in at least two additional areas to be identified by the NRCA and DEMO Project Coordinating Committee following the initial Project evaluation in Month 24 of Project implementation. The selection criteria used to identify SITE locations from selected areas of environmental concern were:

- * *High ranking in meeting the criteria for selection as an area of environmental concern;*
- * *Area is representative of social, economic and ecological conditions found elsewhere in Jamaica and thus offers opportunities for prototypical solutions to environmental problems and has applicability to policies, institutions and procedures at the national level;*
- * *Presence of opportunity for project collaboration between GOJ agencies, NGOs and/or community-based associations;*
- * *Presence of one or more active, registered NGOs with experience in project management;*
- * *Presence of demonstrated local initiative in addressing environmental problems; and*
- * *Extent to which USAID and other donor funds and activities can be leveraged.*

Weighted scores were attached to each of the above criteria and two areas were selected to be recommended for the initial phase

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of the project: the Negril area and the Montego Bay area. Both areas play vital roles in Jamaica's economy and both areas are experiencing environmental degradation that threatens their tourism-based economies. Both are among the most rapidly growing areas of the country and environmental impacts from rapid urban growth are being experienced which will require the concerted efforts of GOJ agencies and NGOs to resolve. There are active NGOs committed to environmental improvements in both areas and the local government capacities and GOJ coordination in both areas are among the most effective in Jamaica. (Illustrative SITE activities in Negril are described in Annex J.)

SITE activities in both areas will benefit from and contribute to concurrent USAID and other donor activities. USAID has active programs supporting tourism, national parks, regional planning, water and sewerage infrastructure, and environmental data collection in Montego Bay; and water supply infrastructure in Negril. UNDP is initiating a complementary planning effort in Negril and the EEC is proposing a major sewerage project there.

Institution development will be a local level feature of this component of Project implementation. In each location, "Local Environmental Management Councils" will guide SITE activities. They are to be comprised of representatives from government, NGOs and local community organizations. The Councils may serve as the implementing entity for SITE activities, or other organizations may implement activities under their guidance. The Council in each SITE area will prepare a written "Action Framework" that frames the expected course of action, identifies responsible parties, and provides a forum for citizens and the Council to:

- * identify environmental issues and opportunities;
- * determine the environmental priorities to be addressed over the course of the SITE activities;
- * identify actions to protect highest priority terrestrial and marine resources;
- * identify actions that will benefit low-income and disadvantaged citizens;
- * identify feasible activities to be undertaken right away;
- * list those SITE activities that may be initiated after further research, data collection or analysis as well as those that may be funded by EFJ or other sources;
- * prepare a work plan for all activities, including a schedule, assignment of responsibilities, budget, training and technical assistance plan, etc.; and
- * reach collaboration agreements between GOJ, NGO and other local groups to carry out identified activities.

The Action Framework is then submitted to NRCA's Project Management Unit (see Implementation Plan, Section III.A.2) for review and budget approval. Upon approval, project planning and development funds will be awarded to the implementing body, which

may be the Council, NRCA or other GOJ agency, NGOs and/or community-based organizations. The Project will finance a set of environmental management improvement activities in each SITE area as outlined below.

i. protect economically valuable lands, resources and ecological systems;

The Council, with the assistance of technical experts as necessary, will identify public interest lands and resources which may include watersheds, important agricultural and forestry areas, significant wildlife habitats, erosion-prone areas and flood plains. Under Council coordination, NGOs and government agencies will jointly develop and implement conservation strategies for their protection.

ii. establish data collection and monitoring programs;

An initial environmental information system will be established to collect, maintain and analyze data relevant to local environmental issues in a format common to all areas. The purpose is to provide a warning system for unacceptable impacts, check compliance with environmental quality objectives, identify cumulative impacts and support environmental management decisions. These systems will be structured to incorporate readily available data in a manner that is appropriate to the types of environmental management decisions needed and that focusses on the resources at greatest risk of destruction or degradation. The information will be reported at regular intervals to an NRCA environmental information system.

iii. design and implement environmental awareness programs;

The Councils and SITE activity managers will be assisted to develop and prepare environmental information and education materials related to identified environmental issues and to the promotion of conservation activities, e.g., waste recycling, coral reef preservation, environmental health and sanitation improvements, etc. Creative approaches to information dissemination will be an important element of SITE activities. NGOs, community organizations, schools and pertinent government agencies may jointly carry out awareness activities.

iv. design and implement appropriate development controls, regulations and voluntary mechanisms for compliance with environmental objectives;

The Councils and SITE activity managers will be assisted to design and implement development controls that encourage environmental protection, including land use controls, planning standards, effluent permits, pollution fees, building regulations, air and water quality standards and waste recycling

incentives. These will be tailored to local characteristics and thus vary across each SITE area.

Programs encouraging voluntary compliance with environmental quality objectives will be implemented. NGOs and public agencies will work together to induce private voluntary corrective measures to reduce pollution and other environmental impacts. "Environmental audits" will be carried out to inform owners of industries, resort hotels and housing developments of the significance of environmental impacts caused by their facilities and to suggest voluntary corrective measures.

The Project will also enhance the capacity of agencies and NGOs to enforce environmental protection regulations. Initial attention will focus on the enforcement of those development controls designed to implement SITE activities such as the conservation strategies for environmentally-sensitive areas.

v. *carry out environmental actions such as establishing a low-technology system for the collection and disposal of solid waste, a pilot constructed wetlands for wastewater treatment, a mooring buoy system for reef protection, a tree planting program for watershed restoration, etc.*

A grant program will finance priority environmental improvement projects identified by the Councils. Criteria will be established for approval of these projects by a DEMO Project Coordinating Committee (see pages 25-26), including:

- * the significance of the environmental issue addressed by the proposed project;
- * the extent to which the environmental issue will be addressed and that tangible results can be produced;
- * the demonstration that the project is within the capacity of the Council and local GOJ/NGO entities to implement;
- * the extent to which it produces tangible results for disadvantaged community groups;
- * the extent to which the project is self-sustaining; and
- * the extent to which other funds (private, USAID or other donor, GOJ, or voluntary contributions) can be leveraged.

The Manager of the Project Management Unit, in coordination with the SITE Manager, will facilitate SITE activities (refer to Implementation Plan, Section III.A.2.). The Local Environmental Management Council will guide the implementation of all SITE activities. Technical and financial assistance provided to these activities will be done through grant agreements established with the Council. Office and work facilities will be provided by local participants in the SITE activities. Land resources which may be required will also be secured and made available by the local GOJ, NGO, or CBA participants.

Grants will be made to the Councils and SITE activity managers for the purchase of local goods and services which may be used in SITE activities. These grants will be based on an approved Action Framework and detailed proposals which have been approved by the Project Coordinating Committee. The PMU SITE Manager will work directly with the Councils to assist their preparation of the Action Framework and grant proposals. Upon approval of the proposals, the Technical Assistance Contractor will grant funds to the Councils and SITE activity managers.

Technical assistance and training needed to implement SITE activities will also be financed by grants from the TAC to the Council and SITE activity managers, upon the recommendation of the PMU and the approval of the Project Coordinating Committee. Training and assistance in project management and environmental education activities are also to be provided by a Jamaican NGO contracted to provide those services (described in Section III.B.3). The Project will provide support technical assistance, training, and commodity procurement of up to US\$500,000/SITE on a 75:25 cost matching basis.

Component 4: Expansion of National Parks and Protected Areas

The purpose of the next phase of the Protected Areas Resource Conservation (PARC) Project is to build on the successes of Phase I and to expand and sustain a national parks system for Jamaica. New parks will be identified, related institutions will be strengthened, and management plans will be established for the long-term sustainability of the National Park system.

The PMU will be responsible for coordinating activities in support of the expansion of the PARC Project models developed for Montego Bay and Blue Mountain/John Crow National Parks. These models will be extended to other parks and reserves identified in the National Park Systems Plan developed by the Jamaica Conservation and Development Trust (JCDT). The implementation of management programs in new areas would be assigned to the appropriate agency, as has been done in PARC I. JCDT will continue efforts to promote sustainable development activities in the buffer areas around reserves and to encourage community environmental awareness programs. The precise implementation details of the expanded National Parks program will be defined in the forthcoming supplemental component design.

D. PROJECT INPUTS

The DEMO Project's ambitious scope requires a complex set of actors, each providing its own set of inputs. In addition to the USAID and GOJ contributions, the Project is counting on counterpart funding and in-kind support from a lead NGO (NEST), four Local Environmental Management Councils (LEMCS), a variety

of local organizations and NGOs which will receive SITE grants, and at least twenty NGOs which will get training from NEST. While the PMU will serve as the central focus for DEMO activity, NEST will also serve as a center for a large portion of the Project's activity under the NGO component.

Tables A through C below provide the financial plan. Table A (Summary Cost Estimate and Financial Plan) projects expenditures by year and by component. The Project inputs are defined according to their simplest classification (TA, Training, Commodities, Monitoring & Evaluation, Contingencies). An indication of how these inputs relate to project outputs, their chronological sequence, and the subtleties of their content is more completely presented in Annex B ("Illustrative Project Budget"). Table B (Proposed Obligation Schedule) indicates that obligations will need to be spread through FY 1997 to fully fund this Project. As the PACD is not until the end of FY 1997, it is expected that the full life of Project funding will be spent by that time.

Table C describes the methods of implementation and financing. The Project may prove difficult to manage in a time when USAID budget and staffing levels seem destined to continue declining. Furthermore, accounting and funds control requirements continue to be more stringent. Hence, the intent is to disburse most of the Project's funds through a technical assistance contract, and to expend virtually all the rest through direct USAID procurement modes. Finally, Table C identifies portions of the Project's total costs which must be left open for competition among suppliers from many nations in accordance with World Bank requirements for the Global Environmental Facility (GEF). Table C attributes discrete implementation actions for each of these two funding tranches.

The DEMO Project (excluding PARC) will cost US\$10,400,000 over the five-year LOP, including US\$7,750,000 of USAID grant funds (75%), and US\$2,650,000 equivalent in local currency (25%), to be provided by GOJ, NGO and private sector contributions. The Summary Cost Estimate and Financial Plan is presented in Table A. USAID grant funds will come from Agriculture, Rural Development and Nutrition (ARDN), Private Sector, Environment and Energy (PSEE), Education (EDUC), and Health and Nutrition (HN) functional accounts.

BEST AVAILABLE DOCUMENT

Table A: Summary Cost Estimate and Financial Plan (US\$ 000)

PROGRAM & ACTIVITY	YEAR 1			YEAR 2			YEAR 3			YEAR 4			YEAR 5			LIFE OF PROJECT			
	US\$10	GOJ	NGO/PS	US\$10	GOJ	NGO/PS	US\$10	GOJ	NGO/PS	US\$10	GOJ	NGO/PS	US\$10	GOJ	NGO/PS	US\$10	GOJ	NGO/PS	TOTAL
HRCA																			
Technical Advisor	60			200			200			200			140			800	0	0	80
Int'l Short Term	75			60			60			60			45			300	0	0	30
Local Short Term	44			40			32			32			32			180	0	0	18
Training	16			52			112			112			112			404	0	0	40
Local Travel	15			35			40			35			35			160	0	0	16
Supplies	97			10			0			0			0			123	0	0	12
Staff/Facilities		92			200			210			210			210			912	0	5
Collection/Reporting		10			20			20			20			20			90	0	9
Subtotal, HRCA	307	92	0	307	220	0	432	230	0	447	230	0	364	230	0	1967	1002	0	291
HEST and NGOs																			
ST TA (Int'l)	60			45			30			15						150	0	0	12
ST TA (Jamaican)	40			44			40			36			32			200	0	0	21
OT TA (Jamaican)	32			44			44			40			40			200	0	0	21
Training (for NGOs)	24			40			112			112			112			400	0	0	41
Supplies	37			6			3			3						49	0	0	5
Staff/Facilities		15			35			35			35			35			0	0	155
NGO Contributions		5			10			15			15			15			0	0	60
Subtotal, HEST & NGOs	193	0	20	187	0	45	237	0	50	206	0	50	184	0	50	1007	0	0	215
1. SITE Activities																			
Int'l	45			60			75			45			45			270	0	0	7
(Jamaican)	40			52			40			40			20			200	0	0	2
Supplies	54			214			402			402			402			1714	0	0	17
NG Contributions		10			30			100			100			100			0	0	340
NGO Contributions		10			150			205			205			205			0	0	775
GOJ Contributions		10			70			70			70			70			0	0	300
Subtotal, SITE	139	0	30	326	0	250	605	0	375	567	0	375	547	0	305	2184	0	0	1473
2. Other Costs																			
Monitoring and Evaluation							60	5					60	5		120	10	0	1
TAID Pers. Svc. Contr.	160			160			160			160			160			800	0	0	8
Salaries & Pin. Reviews	10			10			30			20			40			130	0	0	1
Int'l. Home Office Supt.	60			00			00			00			00			300	0	0	3
Subtotal, Other	230	0	0	230	0	0	350	5	0	260	0	0	340	5	0	1430	10	0	14
TAL (1 through 9)	869	92	50	1602	220	295	1644	235	425	1400	230	425	1435	235	435	6500	1012	1630	91
Contingency & Infl.																			
Contingency				20			115		0	150		0	176		0	461	0	0	1
Inflation				59			176		0	226		0	240		0	701	0	0	1
Subtotal, Conting. & Infl.	0	0	0	79	0	0	291	0	0	376	0	0	416	0	0	1162	0	0	1
TOTAL PROJECT COSTS	869	92	50	1239	220	295	1935	235	425	1856	230	425	1851	235	435	7750	1012	1630	10

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Table B: Proposed Obligation Schedule (US\$ 000)

	FY 92	FY 93	FY 94	FY 95	FY 96	FY 97	TOTAL
I. NRCA	200	230	450	540	540	7	1967
II. NEST and NGOs	120	130	250	250	250	7	1007
III. SITE Activities	200	250	500	600	600	34	2184
IV. Other Costs	120	180	300	375	382	73	1430
V. Conting & Inflation	60	80	240	320	330	132	1162
TOTAL PROJ OBLIGATIONS	700	870	1740	2085	2102	253	7750

Table C: Methods of Implementation and Financing (US\$ 000)

Activity	Method	Amount
A. Attributable to GEF		
1. Technical Assistance Contract	Direct AID Contr.	
a. Support to PMU & NRCA		2,337
b. Grant to NEST		1,059
c. Support to SITE Grantees		2,489
Subtotal, GEF		5,885
B. Standard AID Assistance		
1. Pre-PMU Actions	Buy-ins or IQCs	453
2. Short-Term Consultants	Buy-in or AID	176
	Direct Contr.	
3. USAID Env. Advisor	Direct AID PSC	941
4. Monitoring/Eval./Audit	IQCs or contr.	<u>294</u>
Subtotal, Standard AID		1,865
TOTAL		<u><u>7,750</u></u>

Note: The above cost estimates include inflation and contingency to assure that project funding falls within limits needed to comply with DEMO's contribution to meeting the US portion of the World Bank's Global Environmental Facility (GEF). (See Table D in Section III B below for an estimate of DEMO's GEF contribution.)

E. LONG TERM IMPLICATIONS OF PROJECT

The project will produce results that are both qualitative and quantitative. While important tangible measures will have been achieved (such as acreages of protected lands and resources, numbers of strengthened NGOs, etc.), equally important environmental management processes will have been set in motion:

- * Within the overall context of sustaining economic development in Jamaica, the Project will assist two primary institutions to effectively carry out their responsibilities with reduced reliance on GOJ budget allowances or donor financial support. The PMU, working through these organizations, will have enabled Jamaica to mobilize and deploy resources more effectively for environmental management, drawing on a growing environmental network from NGOs and the informal sector, to community leaders and business people, to government agencies and donors.
- * Jamaica will have a legal and institutional framework in place together with the requisite models and tools to carry out environmental management. A strengthened NRCA will become an articulate advocate for incorporating environmental considerations in macroeconomic decisions and for sustaining long-term growth and development.
- * An environmental information system will be operational at national and local levels. This system will be the foundation for long-term information management that can provide a warning system for unacceptable impacts, keep track of compliance with environmental quality objectives, identify cumulative impacts, support environmental management decisions and provide a framework for environmental impact assessment decisions.
- * The project will contribute to slowing down the rate of deforestation and soil loss and the rate of degradation of the coastal zone and watersheds.
- * The project will contribute to long-term growth in tourism by improving environmental management and conservation in important coastal zone areas, and stimulating new tourism development through national parks and ecotourism.
- * The project will increase the capacity and motivation of environmental NGOs and community associations to respond to environmental concerns. This institutional development is an essential prerequisite to any sustainable long-term environmental management effort within Jamaica.

- * The project will increase public awareness of environmental concerns. Experience with the tools and approaches for environmental education will have developed a cadre of experienced NGOs who can continue this work throughout Jamaica with increasing information and skill.
- * SITE activities will provide government and NGOs with experience in identifying and protecting environmentally-significant and economically valuable lands, resources and ecological systems and a framework will be in place to continue this work in other areas of environmental concern throughout Jamaica.
- * SITE activities will demonstrate the application of practical techniques to solve on-the-ground problems in the areas of waste management, watershed restoration, reef protection, etc. These activities will provide models for similar projects throughout Jamaica, including those that will be funded over the life of the EAI program.
- * SITE activities will have established Local Environmental Management Councils that are specifically organized around environmental concerns. These Councils will have obtained experience and organizational development sufficient to become technically and financially sustainable over the long term and to provide direction and coordination for local environmental improvements.

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III. IMPLEMENTATION PLAN

A. OVERALL MANAGEMENT PLAN

1. Timeframe

General scheduling of key Project events has been recapitulated in Figure 3, page 28. The dates are illustrative and will be subject to change, depending on the specific evolution of project implementation. This schedule is particularly useful, however, in describing the relationship among events and the sequence of actions, over time, that is necessary for efficient implementation.

2. Implementation Responsibilities

This section specifies the operational responsibilities and relationships intended in the Project design. A simplified representation of project operations and relationships is illustrated in Figure 4.

a) **GOJ Project Management:** Overall responsibility for Project implementation will be assigned to a *Project Management Unit* (PMU), to be located within the Natural Resources Conservation Authority (NRCA) of the Ministry of Tourism and Environment. The PMU would be directed by a Manager, and staffed with a Technical Advisor provided by a Technical Assistance Contractor (see part b. below), a SITE Manager, an Information Systems Specialist, other professional staff as appropriate, a Secretary and a Driver.

The NRCA will hire and pay the PMU staff (other than the Technical Advisor) entirely from its own budget. These costs will constitute "host country contributions" as they will not be reimbursable with USAID grant funds.

The PMU, in close coordination with the Technical Assistance Contractor (described below), will direct a variety of Project resources, including funds for short-term and long-term technical assistance services. These services could be used for specific policy or other analyses for NRCA, institutional support for NEST and the environmental NGO community, and special *ad hoc* support for the Local Environmental Management Councils which organize the SITE activities. The PMU will also be responsible for coordinating other inputs, such as training (including long and short-term training, workshops, and field visits), and the identification of needed Project commodities.

The PMU will be guided strategically by a specially established *Project Coordinating Committee* (PCC). The PCC will meet monthly around the agenda established by its chairperson, who is the

Director of the NRCA. The PCC will be composed of the NRCA Executive Director, the Chairman of the NRCA Board of Directors, the USAID DEMO Project Officer, the environmental specialist of the Planning Institute of Jamaica (PIOJ), and an NGO representative to be selected in consultation with NEST. Because of the highly integrated functions of the DEMO project and the critical need to foster consensus dialogue at all levels, the PCC will also invite the participation of special advisors on an *ad hoc* basis, including:

- * the PMU Manager and other senior staff;
- * NGO representatives;
- * private sector representation (e.g., JHTA);
- * other key GOJ ministries; and
- * relevant think-tank, media, or activist groups.

Because of overlaps in the interests of various international donors, the NRCA-led Donor Coordination Group will play an important role outside the normal DEMO Project structure. If useful, the PCC chairman may also wish to invite selected key donors to participate in its discussions, as well.

Key to Project implementation is the *Annual Workplan*, which will be generated by the PMU, in close coordination with the Technical Assistance Contractor, and under the supervision of the PCC. The Workplan will lay out the tasks to be undertaken over the upcoming year, an estimate of all funding requirements, and a clear delineation of responsibilities by individual according to pre-established deadlines.

b) **The Technical Assistance Contractor (TAC):** PMU implementation of the Project, with the strong emphasis on strengthening public and private environmental management organizations across a range of sectors, will benefit from the contributions of a long-term environmental management expert experienced with similar circumstances elsewhere in the world. In addition to this long-term Technical Advisor, the PMU will be supported by a number of short-term local and international experts who will be called upon to supplement the skill base of the PMU in specialized areas. Finally, USAID's increasingly complex funds control and accountability requirements, combined with the prospect of continued staff reductions in Kingston, require consolidating most of the Project's procurement and expenditure functions in the hands of a single contracted management entity. The Technical Assistance Contractor will serve those functions.

The long-term Technical Advisor, together with the various short-term consultants, will constitute the technical support to the PMU provided by the DEMO Project. USAID, in close coordination with the NRCA, will contract directly with the TAC to provide these services. The Technical Advisor will be responsible, along

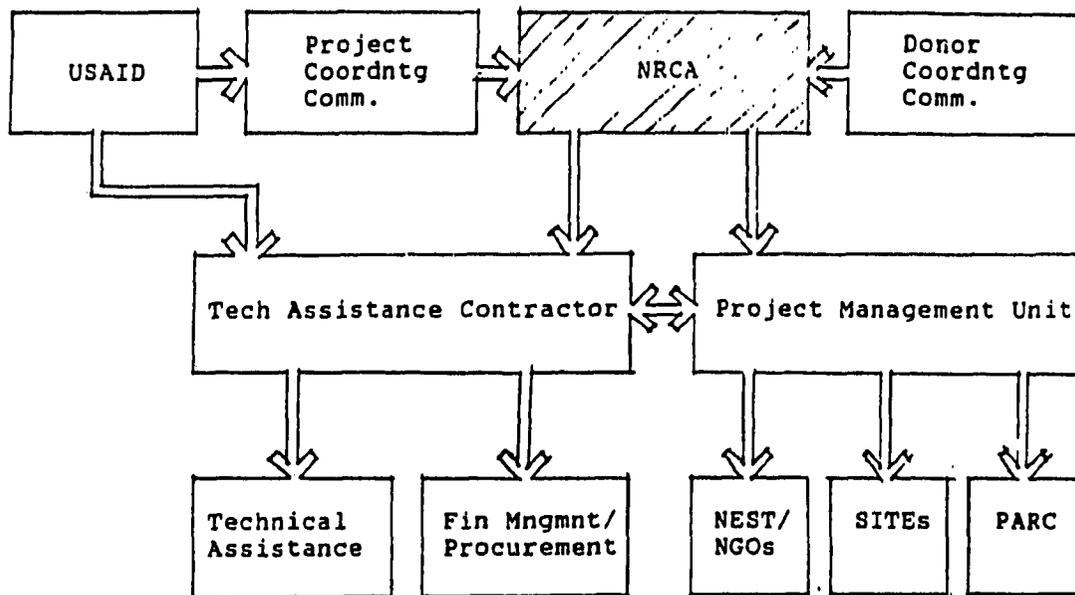
with the PMU Manager, for drafting the various Project plans and strategies for technical assistance and training to NRCA, NEST, NGOs, and Local Environmental Management Councils. In performing these functions, the Technical Advisor and PMU Manager will work closely with the NRCA Director in order to assure that plans are acceptable. The TAC will be charged with executing most direct grants and procurement envisioned under this Project, except for external evaluation teams, which USAID will manage directly.

c) **USAID Project Management:** The USAID Mission to Jamaica will oversee the Project through a *direct-hire Project Officer* in the Mission's Agriculture and Rural Development Office (ARDO). The Project Officer will be supported by an *Environmental Advisor*, who will be contracted with DEMO Project funds. The Project Officer will direct USAID project implementation responsibilities and advise the PMU and the TAC on financial transactions, procedures, and substantive issues. The Environmental Advisor or the Project Officer will attend Project Coordinating Committee meetings on behalf of USAID, and work closely with the PMU in discussions with SITE activity managers, sub-contractors, local councils, NGOs, and others. The Environmental Advisor will work closely with other members of the Agriculture and Rural Development Office, Program and Project Development Office, Controller's Office, and Contract Management Unit, as necessary. The Project Officer will draw upon the USAID/Jamaica DEMO Project Committee for support in Project implementation. From time to time, as broad environmental issues of interest to DEMO arise, USAID's Environmental Committee will meet to address them and take any required action.

d) **Local Project and NGO Management:** Critical to generation of natural resource management "Action Frameworks", and to follow through in implementation at the local level, are the *Local Environmental Management Councils*, previously discussed. These local councils will be supported, as needed, by Project resources and sub-contractors, specialized NGO groups, and the NRCA, to the extent required to insure success of the SITE activities.

Coordination of NGO needs and special activities will be led by the *NGO umbrella association(s)* ultimately retained by the Project for support. This will include, but not necessarily be limited to, the National Environmental Societies Trust (NEST).

Figure 4: Project Operational Relationships



B. PROCUREMENT PLAN

A challenge to the DEMO Project Paper design team has been to accommodate the needs for strong and coordinated project management, consolidation of Project expenditure functions, and meeting of USAID's accountability requirements. As an institution building activity, it is also clear that the young institutions with which the project is to carry out operations (e.g., NRCA, NEST, Local Environmental Management Councils) are unprepared to shoulder major procurement responsibilities which would require them to acquire new skills in the particularities of USAID procurement. In response to these objectives, all procurement (services, commodities, training) are to be folded into one umbrella contract and it will be the responsibility of the Technical Assistance Contractor to either carry out procurement or sub-contract where more appropriate. In using this approach, it will be imperative that USAID and other Project parties exercise carefully structured oversight of procurement actions and that the NRCA be vested with primary oversight and management responsibility for substantive implementation of the Project. This has been built into the Project Monitoring and Evaluation Plan noted in Section III.C.

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A percentage of DEMO Project costs is to be included as part of the US government's contribution to the Global Environmental Facility (GEF), a program providing grants and low-interest loans to developing countries to help them carry out activities to relieve pressures on global ecosystems. The GEF is a cooperative venture among national governments, the World Bank, the UN Development Programme and the UN Environment Programme. As a project accepted by the GEF, DEMO Project procurement will not be "tied" to US or host-country sources. However, US and Jamaican contractors will be fully eligible to openly compete for all procurement activities.

The US government's estimated contribution to the GEF is based on the assumption that 100% of DEMO's PARC activities, 50% of its support to NRCA and to NEST and other NGOs, and 25% of the SITE activities will directly contribute to GEF objectives. Because of this partial attribution of DEMO funds to the GEF, a portion of procurement under DEMO is limited to US and Jamaican source and origin providers, so long as their combined costs do not exceed the proportion of the budget which falls outside the GEF.

To assure the proper mix of GEF worldwide untied (USAID Code 935) and tied (USAID Code 000) procurement, USAID will provide specific instructions to the Technical Assistance Contractor. The TAC will be required to account for the source, origin and nationality of its grants and procurements, and assure that, by the end of the contract, it would have reached, but not exceeded unnecessarily, the required amount of Code 935 expenditure. Table D below indicates that a total of \$3.035 million of disbursements on an unrestricted source/origin or PVO basis would be required to meet DEMO's GEF requirements.

Table D: Cost Attribution for DEMO's Contribution to the World Bank Global Environmental Facility

Component	% GEF	Subtotal	Comb. Tot.	GEF	Non-GEF	Total
NRCA	50%	1,967	2,955	1,478	1,478	2,955
NEST	50%	1,007	1,513	757	757	1,513
SITE	25%	2,184	3,282	820	2,461	3,282
Subtotal		5,158				
Other		2,592				
Total		7,750	7,750	3,055	4,695	7,750

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10% - PSCs

Note: This calculation assumes that the project's general costs (project management, evaluations, audits, inflation, contingency, etc., which are labeled as "Other" above) can be associated roughly dollar-for-dollar with the NRCA, NEST and SITE costs.

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1. Services Procurement

All services, with the exception of PMU personnel, will be contracted for under a single umbrella contract. The TAC will grant funds or sub-contract for adjunct service requirements for the Project, whether with a private entity, government agency or PVO. The contract will be undertaken according to USAID direct contracting guidelines and pursuant to a normal Request for Proposals (RFP). This will be a major, up-front management requirement for the Mission and, in the interest of expeditious Project implementation, will be executed as soon as possible. This implies careful orchestration with NRCA and other parties so as to ensure agreement on the specifics of the contract.

One exception to this contracting package is the Environmental Advisor, who will be contracted separately by the USAID Mission. This individual will be a US national, and have project management skills, combined with strong exposure to natural resource management issues in the developing world context.

After the Project Agreement has been signed, it is anticipated that pre-implementation activities will be carried out prior to the full mobilization of the PMU and TAC expected in May, 1993. These activities will give the DEMO Project a "running start" prior to the actual deployment of the PMU team. It will enable NRCA to carry out its mandate during the critical eight months ahead and NEST to provide essential training and technical outreach services to NGOs participating in the Environmental Foundation of Jamaica (EFJ) grant program. The total cost of these pre-implementation activities is expected to be US\$385,000. Pre-implementation activities requested by NRCA and NEST include short-term Jamaican and expatriate consultancies to:

- * work with the NRCA Executive Director, Board and constituent representatives to help formulate an initial action plan for NRCA operations and organization for the next two years;
- * conduct a similar activity with the NEST Board and staff to develop an organizational strategy and action plan;
- * assist NRCA and NEST to develop management systems;
- * assist NRCA to design an environmental information system;
- * address the legal framework to guide NRCA regulatory and compliance mandates;
- * assist NEST to carry out a training needs assessment of NGOs participating in both SITE and EFJ activities;
- * assist NRCA and NEST to carry out initial organizational development initiatives emphasized in the action planning activities described above; and
- * carry out environmental baseline analyses of the two initial SITE areas--Negril and Montego Bay.

2. Commodities Procurement

As with services procurement, commodities procurement under the Project will be carried out by the TAC. The single exception is the purchase of computers for NRCA and NEST during the period prior to PMU mobilization. (The amount of this pre-implementation procurement will not exceed US\$20,000.) Commodity procurement will include the purchase of three vehicles, plus spares for the official use of the PMU team, one vehicle plus spares for the official use of Project-related NEST staff, and an average of \$400,000 per SITE for an estimated four SITES of yet unspecified items. SITE procurement is to be simplified to the extent feasible by avoiding numerous, small value procurements.

3. Training Procurement

Again, in the interest of consolidated management, all training procurement will also be the responsibility of the TAC in response to needs determined by the PMU. Training will include local workshops, international field trips, long-term Jamaican and international studies, and on-the-job opportunities. Training arrangements for the United States may be sub-contracted to an appropriate specialty firm on a fee basis. Local training may be handled by the TAC or a local agent. Annex E provides additional detail on the nature of training envisaged.

C. AUDIT, MONITORING AND EVALUATION PLAN

The fundamental objective of this Project monitoring and evaluation plan is to provide feedback for informed management decision-making at least cost to all parties. Revisions and additions to this plan will be the responsibility of the Project Coordinating Committee. Figure 5 provides an illustration of the overall flow and linkage of information generated by the Project monitoring and evaluation process.

1. Monitoring of Implementation Progress

Both USAID and the GOJ wish to track the Project's ongoing performance, including progress in relationship to planned events, financial benchmarks, and adequacy of contractor output, in order to regularly adjust the direction of implementation in line with overarching Project objectives. To minimize management requirements of USAID and the GOJ, the basic data needed for the monitoring of implementation progress will be the responsibility of the Technical Assistance Contractor. The following "self-monitoring" requirements will be integral parts of the Technical Assistance Contractor's terms of reference and will be subject to periodic review by USAID to ensure accuracy:

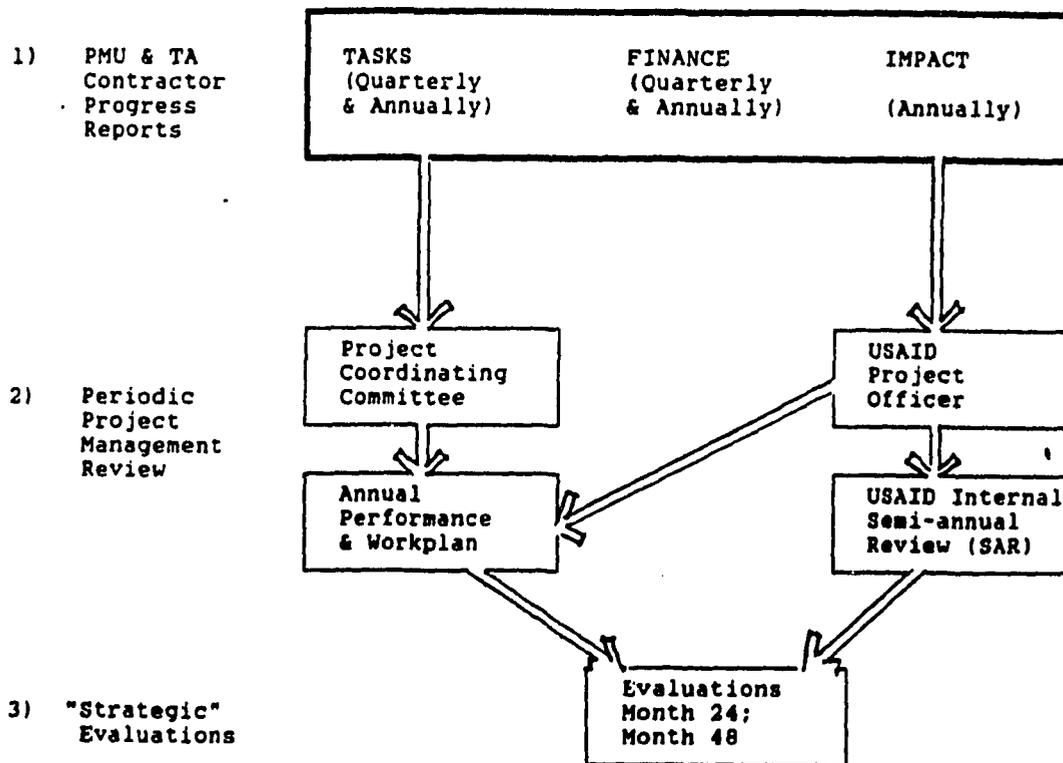
Long-term Contract Staff: All long-term (more than one year) staff, either those on the PMU team, or sub-contracted by the

TAC, will furnish both USAID and NRCA Project Managers with quarterly and annual reports. These reports will contain specific tracking of (a) financial flows via quarterly and annual summaries, (b) key contractual tasks via quarterly and annual summaries, and (c) key impact data in annual summaries.

Short-term Contract Staff: The short-term contractors retained by the Project will furnish the same information provided by long-term personnel, but in an abbreviated form dictated by the nature of the task addressed.

The PMU Manager and Technical Advisor will jointly prepare an annual status report for Project Coordinating Committee review at the time of the annual Workplan exercise. Neither the routine reporting nor the annual Workplan exercise should be overly complex. The major objective of this information is not detail, but rather to surface priority implementation issues for management review. On the basis of the quarterly reports submitted by the PMU and the TAC, the USAID Project Officer will prepare the routine Semi-annual Reports (SAR) for USAID review.

Figure 5: Project Monitoring and Evaluation



2. Evaluation

Two major strategic reviews of overall project performance are

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scheduled as an integral part of Project design. These evaluations, unlike the PMU-led annual reviews noted above, will be considered as formal USAID project evaluations, use third party expertise, and require the development of a standard Project Evaluation Summary (PES) report by the USAID Project Officer. Baseline data, against which progress can be measured, will be generated at the beginning of Project implementation.

After 24 months of Implementation: The objectives of this evaluation will include, but not necessarily be limited to: (a) ascertaining the appropriateness of PP design toward goal and purpose-level expectations; (b) quantifying Project impacts, current or projected, at the purpose level; (c) assessing the efficacy of the PMU team, its linkages with GOJ and NGOs, and the extent to which it has coalesced all parties into an effective advocacy position in areas of Project concern; (d) assessing the effectiveness of the TAC; (e) suggesting Project design modifications; and (f) selecting SITE activities #3 and #4.

After 48 months of Implementation: The objectives of this evaluation, taking place 12 months prior to the Project Activity Completion Date (PACD), are two-fold: (a) review overall Project performance; (b) make a clear statement of actual Project impact; and (c) suggest follow-on activity which would further GOJ, NGO, and USAID objectives.

3. Audit

It is anticipated that all procurement of goods and services will be done by USAID or by the Technical Assistance Contractor. Funds for audit of the TAC costs are included in the "monitoring, evaluation and audit" line item. The TAC will be responsible for arranging audits of grants or sub-contracts the TAC issues. During contractor selection and negotiation, USAID will ensure that the TAC has adequate controls and systems to manage and account for the contract funds.

D. CONDITIONS, COVENANTS AND NEGOTIATING STATUS

All key parties have discussed and agreed to the DEMO Project design. Nevertheless, the following conditions precedent (necessary for release of funds) and covenants (strategically important but noted only for emphasis) are included in the Project Agreement.

1. Conditions Precedent:

- * Prior to commitment or disbursement of Project funds, the GOJ will provide a statement of the name of the person or persons holding or acting in the office of the Grantee, and of any additional representatives, together with a specimen signature of each person specified in such statement.

- * Prior to commitment or disbursement of any Project funds, except for pre-implementation technical assistance, the GOJ will provide evidence in form and substance satisfactory to USAID that the DEMO Project Coordinating Committee (PCC) has been established.
- * Prior to commitment or disbursement of any Project funds, except for pre-implementation technical assistance, the GOJ will provide evidence in form and substance satisfactory to USAID that it has recruited and staffed the NRCA Division Heads, Financial Manager and PMU positions.

2. Special Covenants:

- * The parties agree to establish an evaluation program as part of the Project. The program will include, during and after Project implementation, evaluation of progress toward attainment of Project objectives; evaluation of problem areas or constraints which may inhibit such attainment; assessment of how such information may be used to help overcome such problems; and evaluation, to the degree feasible, of the overall development impact of the Project.
- * The parties agree to establish a Memorandum of Understanding among the NRCA, NEST, and USAID under which assistance will be provided to NEST and NGOs. The Memorandum, among other matters, will provide for NGO assurances for the provision of at least 15 percent of the value from NGO resources of the assistance received under the Project. The Memorandum of Understanding must be executed before the Technical Assistance Contractor may provide funds to NEST and NGOs.
- * Before authorizing any procurement of non-expendible property, the PMU will furnish in form and substance satisfactory to USAID, a maintenance and use monitoring plan for equipment (including vehicles) procured under the Project.
- * The GOJ shall set compensation for PMU employees at levels that will attract and keep qualified personnel.
- * The GOJ shall submit in form and substance acceptable to USAID a detailed time-phased Project schedule and implementation plan for each year no later than 60 days before the beginning of the GOJ fiscal year.
- * If determined necessary by the USAID Environmental Officer, the GOJ shall perform or arrange to have performed an Environmental Assessment prior to commitment of Project funds for any SITE activity. Project implementation plans will be modified, as appropriate, to incorporate mitigation measures developed under any assessments performed.

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DEVELOPMENT OF ENVIRONMENTAL MANAGEMENT ORGANIZATIONS

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LOGICAL FRAMEWORK MATRIX: DEMO PROJECT

ACTIVITY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p>GOAL To promote stable, sustainable and broad-based economic growth.</p>	<p>Environmental conditions cease to deteriorate, while economic growth occurs, in areas which have both important natural resources and potential for economic use, especially in tourism.</p>	<p>Baseline data collected under each DEMO site activity will be compared with original projections of environmental and economic trends for each site, and national statistics from NRCA and MOF will show trends.</p>	<p>Global and domestic economic trends do not worsen significantly from present projections, and other donors continue to provide complementary funding.</p>
<p>PURPOSE To strengthen the capability of public and NGO environmental organizations to manage Jamaica's most economically important natural resources.</p> <p>BEST AVAILABLE DOCUMENT</p>	<p>a. NRCA provides substantive leadership on priority NRM policy and regulatory issues, especially in support of national economic growth.</p> <p>b. NRCA is charging and collecting, or enforcing, user fees and penalties which generate a revenue for the GOJ equal to at least 25% of NRCA's operating costs.</p> <p>c. 10 technically and financially viable NGOs are engaged in environmental mitigation, in at least four economically significant areas.</p>	<p>a. Project records, Parliamentary and GOJ documents, as well as press reports.</p> <p>b. NRCA and related agencies' financial records.</p> <p>c. DEMO and ENGO records.</p>	<p>Political change does not affect GOJ's commitment to address environment issues; and tourism does not suffer from serious social, weather or economic disruption.</p>

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LOGICAL FRAMEWORK MATRIX: DEMO PROJECT

ACTIVITY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
PURPOSE (CONTD.)	d. public awareness of, and concern for, environmental issues is heightened, and Government and private enterprise regularly take environmental issues more fully into account than was the case before the project.	d. GOJ regulations and press reports, records of environmental assessments done prior to construction, public hearings on environmental impact held prior to approving significant public or private projects affecting the environment.	

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LOGICAL FRAMEWORK MATRIX: DEMO PROJECT

ACTIVITY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p>OUTPUTS</p> <p>1. NRCA SUPPORT:</p> <p>a. Policy Reform: Studies and reform initiatives for environmentally sound growth in areas like agricultural price policy, natural resource and land use management, environment taxes, duties, fees and credits, private provision of urban services, etc.</p> <p>b. Regulations: Analysis, drafting and lobbying efforts to enact key laws and regulations concerning environmental assessment requirements for industry, jurisdiction and sanctions on national reserves, and penalties for polluters.</p> <p>c. Environmental Data: Devise and implement a minimum policymaking and enforcement data set of environmental statistics.</p>	<p>a. Economic policy issues identified, prioritized, and addressed, with at least two fully enacted reform initiatives showing measurable benefits by end of project.</p> <p>b. By end of year three, a system of environmental regulations and penalties (fines) enacted and being enforced, with at least a portion of the revenue accruing to NRCA and any enforcement agencies to cover their costs.</p> <p>c. A cost-effective data base at NRCA, with local data centers in the Project's designated SITE areas, able to function after PACD.</p>	<p>a. policy papers, project statistics and GOJ economic data.</p> <p>b. Project and government records.</p> <p>c. Project records and evidence that the data are being used by business, consultants and PVOs, NRCA and GOJ.</p>	<p>Legislative stalemates unrelated to the merits of the particular NRCA proposals do not delay unduly the passage of needed environmental laws.</p>

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LOGICAL FRAMEWORK MATRIX: DEMO PROJECT

ACTIVITY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p>2. NGO Support:</p> <p>a. Lead NGOs: Develop one or more NGOs able to provide training for other NGOs, support them with direct advisory services, and mobilize the community around policy changes.</p> <p>b. Participating NGOs: Strengthen Jamaican NGOs in financial management, proposal development, community mobilization, enforcement, strategy, etc., and give limited ongoing support.</p> <p>3. SITE Activities:</p> <p>a. SITES: Select four target areas for their environmental and economic significance and establish local environment management councils (LEMCs) which would mobilize the community to identify, prioritize and resolve specific problems, and collect key data.</p>	<p>a. At least one Jamaican NGO financially self-sustaining and providing training, client support and having mobilized public opinion behind at least two successful reforms.</p> <p>b. At least 25 NGOs assisted, at least 15 with successful operational programs, and at least 10 of those having used EFJ grants by end of project.</p> <p>a. Two SITES with LEMCs functioning, having completed action frameworks, and contributing data to NRCA by year three, two more by end of project.</p>	<p>a. Participating NGO records, public media reports, government documents on policy reforms implemented.</p> <p>b. Participating NGO and project records.</p> <p>a. Project records.</p>	<p>The Jamaican lead NGOs do not alienate particular groups of related organizations and cause them to be excluded from participation.</p> <p>EAI debt rescheduling continues as currently expected, to generate local currency for environmental NGO projects.</p> <p>Some environmental data users will find the information useful enough to be willing to pay at least a small fee for it.</p>

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LOGICAL FRAMEWORK MATRIX: DEMO PROJECT

ACTIVITY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
b. Subprojects: Fund and assist with local solid waste, ecosystem restoration, development control, environmental education or other subprojects in SITE areas.	b. At least two such projects per SITE, or four by year three, and another six in the four SITES at end of project. Measurable impacts will be determined with each SITE action framework.	b. Action frameworks and subproject data.	The feasibility of another six subprojects in the project's last two years depends heavily on the timely and successful implementation of the first four subprojects.

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ACTIVITY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
INPUTS Component/Cost Item	USAID (US\$000)	GOJ/NGO (US\$000)	Total Project (US\$000)
1. NRCA	1,967	1,002	2,969
2. NGOs	1,007	215	1,222
3. SITES	2,184	1,423	3,607
4. Other	1,430	10	1,440
5. Infl./Contingency	1,162		1,162
TOTAL PROJECT COSTS	7,750	2,650	10,400

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ANNEX B: ILLUSTRATIVE PROJECT BUDGET

1. Background

Due to the attempt to render the Project responsive to the evolving institutional needs of nascent organizations (NRCA, NEST and other NGOs), as well as the implementation needs of 4 or more SITE activities, budget planning is illustrative. Final budget planning numbers will be developed on a yearly basis and according to Project Workplan projections. Oversight of both planning and expenditure of Project funds is included in the Project Monitoring and Evaluation Plan and will be cross-checked periodically by Mission voucher examinations and audits.

Costs are estimated by broad input category: technical assistance, training, commodities, monitoring and evaluation, and contingencies. All costs appear in current US\$: J\$ costs have been translated at an exchange rate of US\$1 = J\$20. Contingency costs have been globally calculated at 5% for the LOP. US\$ inflation was compounded at 3%/yr. and J\$ inflation was compounded at an assumed average 20%/yr. Because of the rapidly changing exchange rate between US\$ and J\$, and because all local costs noted in the categories below will be covered by USAID dollar resources, the final impact of inflation on Jamaican procurement was globally estimated at 5%/yr.

2. Unit costs

Unit costs (current prices) used in this illustrative budget are:

1. TA

-LT Intl Professional.....	\$200,000/yr.
(incl: housing, dependent expenses, etc.)	
-ST Intl Professional.....	15,000/mo.
(incl: travel, lodging, per diem)	

2. Training

-LT Intl (MA level).....	30,000/yr.
-ST Intl.....	5,000/mo.
-LT Jamaica (BA level).....	10,000/yr.
-ST Jamaica.....	1,500/mo.
-Workshops in Jamaica.....	4,000/ea.
-Field visits outside Jamaica.....	4,000/ea.

3. Commodities

-Vehicle and spares.....	25,000/ea.
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3. Budget Estimates by Category

A. Technical Assistance

All Project TA has been subsumed under the umbrella TA contract. Included under the umbrella contract are Core PMU TA and Sub-contract sub-categories. Assumptions have been made as to the probability of the individual being an international or Jamaican

citizen, and whether hired off-shore or in-country. "Years" reflect year of project implementation and under current chronological expectations as defined in the PP text.

	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	TOTAL
1. Technical Advisor to NRCA/PMU						
	60	200	200	200	140	800
s-total						800
2. USAID Personal Services Contractor (Environmental Advisor)						
	160	160	160	160	160	800
s-total						800
3. PMU Sub-contract TA						
*NRCA ST TA, Intl (20 x 15,000)	75	60	60	60	45	300
*NRCA ST TA, Jamaican (45 x 4000)	44	40	32	32	32	180
*NEST ST TA, Intl (10 x 15000)	60	45	30	15	0	150
*NEST ST TA, Jamaican (50 x 4000)	40	44	48	36	32	200
*NEST sub-contract to Jamaican training NGO (50 x 4000)	32	44	44	40	40	200
*SITE ST TA, Intl (18 x 15,000)	45	60	75	45	45	270
*SITE ST TA, Jamaica (50 x 4000)	40	52	48	40	20	200
s-total						1500

BEST AVAILABLE DOCUMENT

B. Training Costs

Training procurement will be carried out by the Technical Assistance Contractor at the direction of the PMU. It is assumed that either the contractor or a sub-contractor will charge an across the board 7% fee, be it international or Jamaican training.

Type training	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	TOTAL
*MA-level, US (2 x 2 x 30,000)	0	0	60	30	30	120
+ fee	0	0	4	2	2	8
*ST, US (10 x 3 x 5,000)	0	15	45	45	45	150
+ fee	0	1	3	3	3	10

50
81

*BA-level, Jamaica (2 x 4 x 10,000)						
	0	0	20	20	40	80
+ fee	0	0	2	1	3	6
*ST, Jamaica (100 x 1500)						
	15	30	30	40	35	150
+ fee	1	2	2	3	2	10
*Workshops (30 x 4000)						
	12	28	28	32	20	120
*Field visits abroad (40 x 4000)						
	12	24	30	48	44	158
			s-total			812

C. Commodities

All procurement is the responsibility of the Technical Assistance Contractor. It is assumed that either the contractor or its sub-contractor will charge a 7% fee for international or Jamaican commodity procurement. US:Local coefficient, by value, is estimated to be 70:30.

Item	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	TOTAL
*Vehicles 3x for PMU, 1x for NEST, incl spares						
	100	0	0	0	0	100
+ fee	7	0	0	0	0	7
*SITE projects (4 x 400,000)						
	200	350	350	350	350	1600
+ fee	14	25	25	25	25	114
*Computers & Office Equipment for PMU, NEST						
	25	15	10	10	0	60
+ fee	2	1	1	1	0	5
			s-total			1886

D. PMU Local Travel Costs

The local travel and vehicle maintenance and fuel expenses are to meet travel requirements of the PMU in conducting NRCA institutional strengthening activities and supporting SITE subprojects.

Item	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5	TOTAL
*Travel, lodging and per diem						
	10	25	30	25	25	115
*Vehicle maintenance and fuel						
	5	10	10	10	10	45
			s-total			160

53

52

E. Contractor Home Office Support

Home office support expenses for the Technical Assistance Contractor will include those associated with recruiting short-term international technical assistance, providing substantive review and oversight of Project implementation activities, providing supplemental technical support for Project activities and assuring compliance with contracting procedures.

<u>Item</u>	<u>Yr.1</u>	<u>Yr.2</u>	<u>Yr.3</u>	<u>Yr.4</u>	<u>Yr.5</u>	<u>TOTAL</u>
*Contractor home office support	60	80	80	80	80	380
			s-total			380

F. Monitoring and Evaluation

<u>Item</u>	<u>Yr.1</u>	<u>Yr.2</u>	<u>Yr.3</u>	<u>Yr.4</u>	<u>Yr.5</u>	<u>TOTAL</u>
*Financial reviews	10	10	50	20	40	130
*Project evaluations at 24 and 48 months			60		60	120
			s-total			250

TOTAL OF ALL BUDGET CATEGORIES	6588
+ contingency @ 7%	461
+ inflation @ 5% compounded annually	701
USAID GRAND TOTAL	7750

BEST AVAILABLE DOCUMENT

**ANNEX C. ILLUSTRATIVE ORGANIZATIONAL STRUCTURE:
PROJECT MANAGEMENT UNIT**

The Project Management Unit of the NRCA represents the overall focal point for managing project activities, including:

- * Technical assistance to NRCA
- * SITE activities
- * Technical assistance to NEST
- * PARC Phase II (provisional)

The PMU supports environmental management organizations through NRCA as well as NEST, each of which in turn provides a range of services for the private and public sector (NRCA) and the NGO community (NEST). The PMU, working through these organizations, will enable Jamaica to mobilize and deploy resources more effectively for environmental management, drawing on a growing environmental network from NGOs and the informal sector, to community leaders and business people, to government agencies and donors. The PMU will encourage sound financial management, both in terms of accountability to USAID, developing organizational sustainability, and in working with Jamaicans to design projects that may attract funding from other sources. Because teamwork across organizations is a basis for successful environmental management, the PMU will also encourage participatory action planning techniques, at the national and local community level.

Standards for PMU Staff. Because the PMU team will serve as role models for NRCA, NEST and their constituents in turn, the staff will have to operate to certain standards:

- * Integrity
- * Cooperativeness and respect for differences (approaches, styles and cultures)
- * Sense of teamwork
- * Familiarity with modern word processing and other computer applications
- * Technical excellence in their field and prior multidisciplinary experience
- * Clear communications, both verbally and in writing
- * Openness to new ideas and approaches
- * Commitment to environmentally sustainable economic development.

PMU Staff
Project manager (Jamaican)

Provides direction in areas of environmental management organization strengthening, policy development, information systems, action planning and budgeting,

tradeoff analysis, communications (verbal and written), as well as encourages cooperation between and among government, the private sector and NGOs. Prepares appropriate reports to AID. Skilled in natural resources management, policy development, organizational development, communication and computer applications.

Technical advisor (expatriate)

Mirrors the skills of the project manager with greater experience and international practice. The technical advisor will serve as a sounding board and advisor to the NRCA Executive Director, the PMU Manager and to the entire PMU team. Advises on contractual reporting to USAID. Coordinates with Technical Assistance Contractor team to assure timely and responsive provision of technical assistance and financial management support to the PMU.

Financial manager (Jamaican)

Directs financial management and reporting for PMU activities and works closely with Technical Assistance Contractor to assure financial accountability on all Project activities. Works with NRCA to prepare budgets for projects that may attract funding from other sources. Part of a team to train others in financial management systems. Skilled in financial management, fundraising, training, and computer applications. (This position may be located outside PMU in NRCA staff structure.)

SITE manager (Jamaican)

Provides direction to SITE activities in areas of

environmental management, information systems, action planning and budgeting. Encourages cooperation between and among government, the private sector and NGOs. Travels regularly to SITE projects to support local efforts. Skilled in environmental planning, natural resources management, organization development, project management, and computer applications.

Network developer/information specialist/trainer (Jamaican)

As resident user-friendly computer expert, complements specialized expertise of technical assistance and training for NRCA staff in word processing, spreadsheet, GIS and data base management. Skilled in presentation techniques and familiar with software packages. Applications range from report format, newsletter and mailing lists, to more elaborate development of a network of environmental monitoring across agencies. On-site supportive coach.

Administrative assistant/secretary (Jamaican)

Provides support to management team as well as on-site coaching to NRCA secretarial staff in word processing. Skilled in logistics for travel and conferences, as well as layout of documents. Familiarity with modern office equipment (computers, fax, copier). Maintains supplies. Bookkeeping skills are useful.

Driver/messenger/office assistant (Jamaican)

Allows for efficient use of vehicles and professional time. Knowledge of vehicle maintenance and repair. Should become familiar with office equipment and assist in copying.

ANNEX D: TECHNICAL ANALYSIS

1.0 PURPOSE

This technical analysis examines how land and coastal based natural resources are used in Jamaica, and makes recommendations on how to incorporate environmental conservation and mitigation measures into the design of the Development of Environmental Management Organizations (DEMO) Project Paper.

2.0 NATURAL RESOURCE MANAGEMENT AREAS OF CONCERNS

The following critical environmental issues and concerns were identified in the Jamaica Environmental Strategy paper, dated 9/91. They are listed on a priority basis. It should be noted that all of the issues are of almost equal ranking, with very little difference between issues 1-3. This relates to the similar causality of these issues.

2.1 Degradation of coastal zones

There is no precise definition of coastal zones. All definitions seek to include beaches, wetlands, estuaries, lagoons, coral reefs, and dunes. The built environment includes ports, commercial fisheries and aquaculture operations, industries, recreational and tourist developments, archeological sites, and most importantly, urban areas. The extent of land area included in the coastal zone varies, its limits are determined by ecological and geological characteristics and by political and administrative units. In practice the coastal zone is a relatively narrow band of water and land along a shoreline.

Most of Jamaica's urban development has occurred along coastal areas. This development has placed heavy demands on very fragile ecosystems. The primary causes of coastal zone degradation include: (a) lack of planning for urban developments, agriculture, tourism, and industrial facilities, (b) degradation of up-stream watersheds, (c) inappropriate management of liquid and solid wastes which contaminate the soils and water of estuary and near-shore marine environments, and (d) the lack of enforcement of standards and guidelines for water quality, fisheries management, and zoning. The effects of these factors have included loss of important habitats, including mangroves and mangrove estuaries, coral reefs, and grass sea-beds. Other negative effects include: beach erosion, reduction in aesthetic quality, increased incidence of human health problems, and imbalances in the ecosystem. Ultimately, the pervasive poverty affecting both urban and rural areas, and the lack of any institutional policies, standards, or guidelines for integrated management of coastal zones is a principal underlying factor. The majority of Jamaica's tourism industry is centered on its

coastal zones, therefore it is imperative to involve the tourism sector in coastal zone conservation projects. Coastal zone degradation is a major environmental issue for Jamaica, and if left unchecked, could lead to significant economic problems.

The underlying factors maintaining ecologically damaging practices are social and institutional in origin. There is at present no comprehensive GOJ policy defining management objectives, standards, or guidelines for coastal lands and waters. The Beach Control Authority lacks sufficient staff, financing, or motivation to enforce standards, even if they existed. The National Water Commission lacks the infrastructure to deal with site-specific contamination, and squatters in particular. Local NGO and private sector groups have demonstrated a willingness to get involved and pursue monitoring and enforcement needs, but they, too, are in need of policies to guide their action plans. Finally, there is the problem of poverty and limited public awareness of the complexity of the issues involved. Environmental education may not make people less poor, but it can demonstrate opportunities for improved resource uses that are economically viable, technically feasible, and possibly more attractive as a lifestyle than present conditions.

The objective of coastal zone management in Jamaica should be the development of a comprehensive program to allow for better management of marine and near shoreline terrestrial environments, and to allow for sustainable exploitation of those resources in a manner that does not disrupt balanced ecosystems.

2.2 Watershed degradation changes in hydrologic regimes and soil loss: Extensive removal of tree cover, especially on steep hillsides, has resulted in wide fluctuations in surface flows and groundwater recharge, excessive soil loss and reduced productivity on agricultural lands, and deposition of sediment loads in downstream coastal areas where they degrade ecosystem conditions. The primary causes of these hydrologic and soil conditions are the clearing of land for agricultural production and unchecked removal of forest products for fuelwood, charcoal, construction, posts, and poles. The Watershed Act of 1963 was intended to establish a framework for guiding land use affecting soil and water resources. However, no comprehensive land use policies have yet been put in place, and the many agencies with some jurisdiction for watershed management have not yet coordinated efforts to enact specific soil and water conservation projects. The data on soil loss rates and changes in forest conditions are from isolated locations and not always consistent. This prevents the development of meaningful responses to the problems. The lack of public awareness, and the need for economically attractive incentives for poor farmers to be motivated to restore and protect degraded forest lands are

central factors. Watershed degradation is pervasive throughout the island, although the severity of the problem varies among specific locations. All 33 of the watersheds declared under the Watershed Protection Act are exhibiting various levels of degradation, and at least 19 are considered to be in a critical state requiring urgent rehabilitation (Jones, 1991). Although Jamaica will not likely lose all of its forests in the near future, human livelihoods can be greatly improved and soil productivity maintained and improved as rural watershed conditions are improved.

The primary objectives of watershed rehabilitation and management are to reduce the loss of forest and other perennial vegetative cover, minimize soil erosion, and apply effective watershed planning and management. The net effect is to increase the infiltration of rainfall to replenish surface and ground water resources, to decrease the amount of sediments flowing into rivers and streams and their resultant effect on water diversion works (potable and irrigation), and the degradation of coastal waters and coral reefs.

2.3 Water pollution

Some water supply sources and connected downstream wetland, estuary, and marine ecosystems are being contaminated by sediments, pathogens, and chemicals. This contamination primarily results from deforestation of upper watersheds, improper disposal of liquid and solid wastes, and runoff contaminated by agrichemicals. The principal consequences of this water pollution are noticed in human health impacts and degradation of downstream habitats. Inadequate planning of urban developments, and the expansion of numerous illegal housing and other developments, is a major factor contributing to water pollution. Many of these legal or illegal structures do not have access to reliable piped water systems or waste disposal services. Waste disposal tends to be haphazard, unregulated, and often relies on the use of local natural areas as a depository. Institutional problems are reflected in a lack of coordination among agencies who share some aspects of authority in terms of water systems and water resources, and insufficient personnel and equipment to monitor, document, and enforce specific standards for water quality. Unfortunately, little reliable, systematic data is available to confirm the magnitude of these problems, either on a site-specific basis or island wide. Based on health information, water pollution is not considered to be a major problem throughout the island at this time, although specific locations are having persistent problems. If water quality conditions continue to degrade, restoring water resources to acceptable standards may become very costly.

The objectives of water quality improvements are the rational management of sewage, solid wastes, and industrial wastes to prevent and reverse degradation of the water resource and thereby

protect human health and maintain a healthy economy.

2.4 Elimination or degradation of habitat (flora & fauna)

Habitats are eliminated or degraded by numerous human and natural causes. In the Jamaican context those causes usually are: subsistence agriculture, urban/settlement advances, tourism/industrial/housing developments, waste disposal, and other land clearing that temporarily or permanently removes land from vegetation. The seriousness of the impacts resulting from vegetation manipulations depends on the type of habitat being converted/modified, as well as on the way in which the modification/conversion is carried out.

In recent years the biological diversity of terrestrial and marine ecosystems throughout Jamaica have been adversely affected by: a) clearing or degrading of forests, b) soil loss, c) contamination of soil and water resources from improper disposal of liquid and solid wastes, d) poorly planned urban developments, and e) wildlife harvests in excess of ecosystem carrying capacity. The results of these actions are evident in the increasing number of plant and animal species that are threatened and endangered with extinction. Once lost, habitats are not easily restored. Species lost within these habitats is permanent. Although a Wildlife Protection Act was enacted in 1973, the policy to guide implementation of this act has remained unclear. Staff and budgets to enforce the mandates of the act have been inadequate, and monitoring of changes in critical biological communities has been minimal. Again, underlying these factors has been the persistent problems of poverty and limited public awareness of the issues.

A clear signal to the international conservation community would be for Jamaica to accede to and ratify the Conservation of International Trade in Endangered Species (CITES) convention. To complement CITES, a memorandum of agreement should be negotiated with the International Transportation Carriers to ensure repatriation of seized plants and animals illegally exported from Jamaica.

Objectives of the maintenance and improvement of habitats should be to:

- * identify forest and marine ecosystems where both flora and fauna are under threat, plan for their protection and enhancement, and establish and maintain protected areas for those species;
- * increase public awareness of the importance of the need for habitat maintenance;
- * encourage and sustain policy dialogues between NGO's and the GOJ;
- * stimulate participation of community groups in the conservation of flora and fauna; and

- * encourage the wise use of flora and fauna for commercial and recreational purposes.

2.5 Biological diversity

Biological diversity is a critical environmental issue that cross-cuts the above five areas. Biological diversity refers to the number of biological species, the population levels of these species, and the relationships among these species. It encompasses the number of ecosystems and distinct plant and animal species in existence as well as the genetic differences within individual species. Biological diversity of Jamaica's plant and animal species has intrinsic value, and more importantly, it is a precious natural resource essential to human existence and commerce. Conservation of biological diversity is a form of natural resource management which has the primary goal of maintaining the long-term potential of Jamaican resources to meet the needs of future generations.

2.6 Air/atmospheric pollution

This refers to a variety of physical and chemical alterations to the air, including natural alterations such as volcanic emissions of particulate matter, and manmade alterations such as climate warming, ozone depletion, acid rain, and the release of toxic pollutants. The burning of refuse and industrial emissions are of primary concern to Jamaica.

Deterioration of air quality in the major urban population centers of Kingston, Spanish Town, and Montego Bay, and in the Santa Cruz mountains southwest of Mandeville, is a cause of concern. Principal contributors to this problem have been stack emissions from oil refineries, power stations, chemical processing facilities, cement production, bauxite mining and processing, sugar production, and other industrial operations. The burning of garbage at municipal dumps, and vehicular emissions also contribute to the problem. The consequences from these emissions are frequent high particulate levels in urban areas, and potential adverse health impacts on local populations. Emissions may also be traveling considerable distances where they are deposited through precipitation or atmospheric fallout within critical habitats, thus potentially contaminating soil or water resources. While air pollution is not yet considered a major environmental issue in Jamaica, it could potentially become one, and there is at present no clear policy, regulations, guidelines, or infrastructure in place to enforce environmental quality mandates. The development of air monitoring, or an air quality index, by the GOJ, based on air quality baseline data, would be a good first step.

3.0 ROLE OF THE GOJ IN THE AREAS OF CONCERN

Like many other countries, Jamaica has a plethora of governmental

agencies dealing with environmental issues. The Ministry of Tourism and Environment has the specific overall responsibility of environmental matters and its chief agency in this area is the Natural Resources Conservation Authority (NRCA). Other key environmental, regulatory, and resource management agencies are the Environmental Control Division, Ministry of Health, Town Planning Department, and the Underground Water Authority. There are many collaborating and supporting environmental regulatory and resource management agencies, some are: Forestry and Soil Conservation Department (FSCD), Fisheries Division, Inland Fisheries, Port Authority, Mines and Quarries Division, Office of Disaster Preparedness, Meteorological Office, Survey Department, Bureau of Standards, Local Authorities, and the Local Health Departments. Due to the range of agencies, the question arises as to how environmental matters are discussed and coordinated among agencies. At this time the answer is that collaboration and coordination is usually absent. To attempt to overcome part of this problem the Minister of Tourism and Environment will establish an Inter-Ministerial Advisory Committee for the Environment and Development. Concurrently, the NRCA will establish an Inter-Agency Advisory Committee. Within the GOJ there are many "stops" on the approval process for development projects and an important priority for the NRCA will be to streamline and expedite the review/approval process.

The NRCA was created to coordinate GOJ environmental initiatives. At present it is weak in funding and staffing. In the process of staffing the NRCA, a question to be asked is how much technical expertise should the NRCA have in-house versus the expertise contracted out.

There is a duplication of efforts between GOJ institutions with regards to natural resource management at the present time, the NRCA will act to oversee the entire environmental arena within Jamaica and seek to focus the environmental efforts of the various GOJ agencies charged with different phases of environmental management.

The functions of the NRCA are: 1) to manage the physical environment to ensure the conservation, protection, and proper use of its natural resources; 2) to promote public awareness of the ecological systems of Jamaica and their importance to the social and economic life of the Island; 3) to manage national parks, marine parks, and protected areas; 4) to advise the minister on matters of general policy relating to the management, development, and conservation of the environment; 5) to perform such other functions pertaining to the natural resources of Jamaica as may be assigned by the Minister.

As planned, the NRCA will: 1) develop, implement, and monitor plans and programs relating to the management of the environment; 2) construct and maintain facilities for public recreation

purposes; 3) formulate and standards and codes of practice to be observed for the improvement and maintenance of the quality of the environment generally; 4) investigate the effect on the environment of any activity that causes or might cause pollution; 5) conduct seminars and training programs.

Section 38 of the Act of 1990 states that the Minister may make regulations for the purpose of giving effect to the provisions of the Act, of particular attention is the provision for the creation of standards and codes of practice with respect to the protection and rehabilitation of the environment and the conservation of natural resources. To date the NRCA has formulated environmental policy (in draft) only in the area of protected area management. Assistance will be needed in the area of the formulating of policy, DEMO should assume a strong lead role in this area.

In addition to NRCA, an agency that is a partner in the PARC Project is the FSCD, Ministry of Agriculture. Its role in environmental matters has been steadily declining over time due to reduced budget levels. Due to shortages of resources, FSCD is not very effective at the present time. CIDA has tentative plans to address the issue of institutional strengthening of the FSCD, but those plans are on hold at present due to institutional concerns of the FSCD.

Suggestions to GOJ agencies and local governments: 1) develop policies in the broad area of ecosystems management; 2) develop standards and guidelines for measuring changes in environmental conditions, including a nationwide database; 3) develop mechanisms for implementing policy recommendations, in terms of legislation, clarify agency mandates, employ sufficient personnel, budget sufficient funds, and infrastructure; 4) develop mechanisms to monitor implemented policies, modify actions, and allow for modification of actions during the course of a project; 5) devise and implement realistic pay scales; 6) provide technical and managerial training; 7) address the issue of a shortage of trained environmental personnel in Jamaica.

Environmental Quality Objectives (EQO's) are qualitative descriptions of a desired environmental quality for a particular use. It is suggested that they need to be established by the NRCA, as a routine part of its mandate. EQO's are numerical expressions of these objectives.

Examples of EQO's:

1. public health - bacteria,
2. aesthetics/nuisance - odor and suspended solids,
3. marine, contact recreation - bacteria, suspended solids, and pH,
4. wetland conservation - nutrients, suspended solids, and pH,

5. marine conservation - nutrients, suspended solids, and pH,
6. fluvial ecology - dissolved oxygen, suspended solids, and pH,
7. soil conservation - tons/acre over time of soil loss.

4.0 JAMAICAN NGO INITIATIVES AND THE AREAS OF CONCERN

The technical effectiveness of Jamaican NGOs and their activities span the full range from well organized and managed to weak and ineffective. There are approximately 40 environmental NGOs active in Jamaica at this time. Duplication of efforts between NGOs is not much at this time, most are focused geographically and in specific areas of interest. The National Environmental Societies Trust (NEST) acts to coordinate NGO activities and to act as an island-wide environmental umbrella group.

Prior to beginning many of the specific tasks of DEMO, the project will assist NGOs in focusing on their mission and purpose and the creation of a mission statement. It should be a priority to work with currently active NGOs--from weak to strong activities and membership--and only later to assist in the formation of new NGOs where a need for them exists. It is imperative that NGOs work on "minor" successes first, rather than taking on too big a project/activity that goes uncompleted.

In many cases NGOs have a fair amount of technical knowledge regarding the subject(s) they are primarily interested in. Most lack some of the managerial and administrative skills necessary for them to adequately implement specific projects, as will occur under the Enterprise for the Americas Initiative (EAI). It will be important to develop criteria for NGOs to use to plan and design their own projects so that they will be in a good position to effectively solicit funding from the EAI. The provision of technical assistance specialists to NGOs will allow them to effectively participate in EAI.

The following are general recommendations regarding NGOs: 1) assist in the development of environmental policy, request clarification of unclear or incomplete legislation, and develop standards and guidelines for measuring environmental change; 2) where appropriate, develop baseline data to assist in guiding planning and decision-making; 3) develop long-term/sustainable financial resources; 4) provide training opportunities for NGO membership and community organizations; 5) develop non-formal environmental education opportunities; 6) clarify the roles and responsibilities of NGOs so communities understand their mission and direction.

Public-private partnerships are the best vehicle for moving Jamaica's environmental agenda forward in a coherent/coordinated

fashion. NGOs have the flexibility to initiate and modify their actions in the absence of a governmental bureaucracy, whereas governmental contacts and their enforcement functions are indispensable to the execution and management of projects. NGOs will act as advisors on the NRCA board and provide needed input into NRCA decisions. Currently there is not enough coordination of environmental education measures, the National Environmental Societies Trust (NEST) would be the logical NGO to coordinate environmental education efforts for NGOs and NRCA for the GOJ. The Montego Bay Marine Park project is a good example of a working NGO/GOJ partnership.

Environmental assessment training should be provided to GOJ agencies and NGOs so that a system of checks and balances will be established, and NGOs would obtain an understanding of how to review and provide comments to EAs. In many instances NGOs can be the GOJ's link to the local community. Technical assistance and training will be needed for both newly employed NRCA technical positions and for interested NGOs. Joint training sessions are recommended to foster a collaborative spirit between the GOJ and the NGO community.

5.0 INTERNATIONAL DONORS

The role of international donors will be very important in furthering environmental initiatives. It will be important for donors to develop a cooperative framework for facilitating environmental initiatives. At present, most international donors have not implemented their specific technical or financial assistance actions related to environmental issues.

Currently there is little duplication of efforts between international donors (including USAID). The potential exists for a duplication of efforts between DEMO and a similar CIDA proposal. Once the DEMO Project is completed in draft form, the Mission should coordinate DEMO initiatives with regards to NRCA with the Canadians and other donors. Currently international donors, agency director level, meet on a regular basis to discuss common issues, not necessarily environmental issues. To obtain closer donor cooperation, a regular donors roundtable of environmental specialists should be organized to coordinate work and avoid areas of duplication or conflict. This cooperative effort can help facilitate and accelerate the process of implementation of action plans, while enabling donors to avoid duplication of effort.

5.1 United Nations Development Program (UNDP). Traditional UNDP projects emphasize urban and regional planning, water supply systems, and human health. An example being an urban planning exercise with the Town Planning Department in Negril. Many of these efforts are on-going in conjunction with USAID or CIDA.

Future plans include assistance in the establishment of the NRCA, and in strengthening the environmental management potential of NGOs. However, there is not clarity with regards to actual field projects that may emerge from their efforts.

5.2 Canadian International Development Agency (CIDA) is actively involved in Jamaican environmental issues, they too have recently completed an environmental strategy. The details and exact initiatives within this strategy have not yet been finalized. Tentative priorities are to undertake activities that would strengthen the NRCA, the FSCD, and environmental NGOs. The work with NRCA would enhance its capability to develop and mobilize financial, human, and informational resources. CIDA's *Trees for Tomorrow* could provide funding for reforestation efforts, but thus far the GOJ has moved slowly in furthering this proposal. A fundamental mechanism for strengthening NGOs will be the establishment of a "Green Fund". This fund will fund NGO environmental efforts up to \$40,000 and operate with short lead times. Priorities for the Green Fund will include waste management, water pollution, agriculture, forestry, energy conservation and substitute fuels, and local income generation from ecotourism.

5.3 The Inter-American Development Bank (IDB) has no on-going environmental projects at this time. The IDB is, however, providing funds for the development of infrastructure that can influence the impact of the tourism sector on the environment. IDB funds are being directed towards improved water supply systems, sewage treatment facilities, and road improvements in and around Montego Bay and Ocho Rios. Additionally, the Jamaica Trade, Finance and Divestment Sector Loan, which is presently being negotiated, has conditions requiring the GOJ to support the establishment and empowerment of the NRCA. The IDB has planned technical assistance (TA) to the NRCA in the form of an environmental planner/resource economist to be provided to the NRCA for an 18 month period. The TA will provide institutional strengthening of the NRCA. The IDB plans to assist the Kingston municipality in environmental waste management planning beginning in CY93.

5.4 Japan and USAID are co-financing major tourism infrastructure development projects for the north coast of Jamaica. These activities are to include a sewage system improvement project for Montego Bay, the Lucea-Negril water supply system expansion, improvements to the northern coastal highway, a Montego Bay drainage and flood control project, and an Ocho Rios cruise ship facility project.

5.5 Netherlands: The Dutch are working on a community development project within the Rio Grande Valley, Portland Parish. Part of their activities are occurring in the northern buffer zone of the Blue Mountain/John Crow Mountains National

Parks, their activities are compatible with the objectives of the PARC I project. The Jamaica-Netherlands Development Corporation has been formed to manage this project.

5.6 Delegation of the European Communities (EEC): The EEC is active in the areas of waste water and potable water management. Their funding for Jamaica is via LOME III and IV funds. In Negril and Ocho Rios the EEC is funding sewage treatment plant developments, both projects to cost approximately EQ\$25 million. In Savannah La Mar and in numerous small communities, they are funding potable water systems. The smaller water systems they are funding were previously begun, but not completed systems. Planned developments for the future include: new road construction on the south coast near Black River, agricultural support programs, and land titling. The EEC has co-financing funds available to fund small Jamaican environmental projects that European environmental NGOs wish to participate in.

5.7 National Forestry Action Plan (NFAP): The NFAP is part of the worldwide Tropical Forestry Action Plan (TFAP) initiative for tropical/developing countries. In 1990 a Donors Roundtable Meeting was held to solicit active support for the NFAP process, specifically in requesting that the international donors "adopt" specific projects of the NFAP. To date the NFAP effort has produced little to no tangible results. Recently, Mr. Roy Jones, Director FSCD, has been named head of a group that is seeking to obtain bridging financing to fully implement the NFAP process.

6.0 DEMONSTRATION/PILOT PROJECTS AND DEMO

Activities can be implemented through the DEMO project by NGOs, the GOJ, or GOJ/NGO partnerships to address environmental issues and create an environmental awareness. Many of the following initiatives could be demonstrated within buffer zone areas surrounding terrestrial or marine protected areas (ie - PARC II sites). Income generation would be a primary concern and environmental education would be a component of all of the below potential demonstration initiatives. Protected areas are not listed due to the inclusion of a PARC II component within the DEMO project. Activities of the Hillside Agriculture Project (HAP) would not be duplicated.

A careful/thorough analysis of the physical environment needs to be accomplished prior to implementation of any demonstration project. A question to ask is whether demonstration projects should be planned for those areas of Jamaica that are relatively untouched by large-scale tourism developments such as the south coast area, or be concentrated on the relatively developed north coast.

The following is a listing of potential activities, not all inclusive, which could be included as pilot project components:

1. Soil conservation measures,
2. Agroforestry techniques,
3. Energy plantations using native and exotic trees,
4. Energy conservation measures, incl. solar energy,
5. Constructed wetlands for waste water treatment,
6. Nature tourism/ecotourism,
7. Secondary forest management,
8. Recycling of waste products,
9. Improve sewage treatment plant operations & planning,
10. Planning of appropriate solid waste technologies,
11. Planning of new sewage treatment operations,
12. Fisheries management, including aquaculture,
13. Re-use of waste water,
14. Use of micro-irrigation systems for arid areas,
15. Model/demonstration farms in buffer areas,
16. Environmental education and public awareness,
17. Integrated pest management,
18. Urban and rural planning efforts,
19. GOJ envir. law enforcement techniques,
20. Marketing skills for NGOs & GOJ agencies,
21. NGO monitoring of GOJ envir. laws,
22. Geographic Information Systems.

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ANNEX E: INSTITUTIONAL ANALYSIS

1.0 INTRODUCTION

The management of natural resources from a national perspective has been in the forefront of the environmental debate in recent years. It is now widely accepted that the present levels and rate of environmental degradation has become inimical to social and economic stability in the country.

The purpose of this analysis is to recommend institutional arrangements for the effective implementation of the DEMO Project. It specifically considers the capability of two organizations that have primary responsibility for the implementation of the project: the Natural Resources Conservation Authority and the National Environmental Societies Trust.

2.0 GOJ ENVIRONMENTAL INSTITUTIONS

2.1 Background

During the 1960's, as signs of substantial environmental degradation became more apparent, patterns of resource exploitation began to change and resource protection and enhancement moved up on the agenda. In 1961, the Town and Country Planning Act was passed, and the Ministry of Agriculture and Lands was divided into two separate ministries -the Ministry of Agriculture and Fisheries and the Ministry of Rural Land Development.

The creation of the Ministry of Mining and Natural Resources (MMNR) and the Ministry of Health and Environmental Control (MOHEC) in 1974 marked the beginning of a more coordinated approach to environmental management. In addition, to mining, the MMNR was responsible for geological mapping, development and conservation of water resources, distribution of water, land planning, development and registration. The following entities also fell under this Ministry: Beach Control Authority, Kingston Harbour Monitoring Committee, Scientific Research Council, Seismographic Research Unit, development of public recreational facilities, National Parks and Wildlife Committee. Responsibilities of the Ministry of Health and Environmental Control included pollution control and occupational health.

In 1975, the momentum generated by the Stockholm Conference, and an organizational efforts by GOJ resulted in the establishment of NRC and ECD. The effort to incorporate environmental management principles in the development control process was realized by way of inclusion of these and other resource management agencies in the Town and Country Planning Authority. Developments with potentially adverse environmental impact were now subject to

approval by the NRCD and the ECD.

NRCD was established by Ministerial Order 16 of 1975, the intention being to enact legislation to establish NRCD as a statutory body. However, this was not achieved until 1991, with the passing of the Natural Resources Conservation Authority Act. The new NRCA became a statutory body within the then Ministry of Finance, Development and Planning. Currently, NRCA has been placed under the Ministry of Tourism and the Environment. There is as well, an Environmental Protection and Conservation Office within the Ministry with a focus on integration and inter-linkages geared to advancing the concept of sustainable development. The relationship between the Environmental Protection and Conservation Office and NRCA has not yet been sharply defined.

The GOJ has made at least an initial commitment to environmental issues with the preparation of its National Environment Plan (JANEAP), enactment of the Natural Resources Conservation Act of June, 1991, and the establishment of the Natural Resources Conservation Authority (NRCA) as the primary agency with responsibility for environmental management in Jamaica. The NRCA, which falls within the Ministry of Tourism and the Environment, is intended to facilitate the following:

- a) articulation, coordination, and implementation of a national environmental policy;
- b) establishment of regulatory, monitoring and enforcement programme; and
- c) coordination with external agencies, including NGOs and private sector entities.

A strong and effective NRCA will provide the critically important foundation and boost to environmental actions in Jamaica. The Agency will represent the source of standards and guidelines which can be used to measure ecological equilibrium, and will serve as the authority to which public and private audiences can turn when interpretation or enforcement of environmental issues are required.

2.2 Constraints to Effective GOJ Institutions

Low Government Commitment

For the GOJ, environmental and natural resources management issues seem to be a low priority. Consequently, GOJ funding for the support of these institutions has been inadequate. Staff numbers and morale as well as low salaries are inadequate to attract and hold sufficiently qualified personnel.

Low Public Awareness

The Country's Environmental Profile and subsequent activities have increased public awareness, but it is still low. The

perception persists that environmental conservation obstructs development.

Shortage of Trained Personnel

Jamaica has dedicated and highly trained individuals who could be the nucleus for the development of effective environmental management. However, this resource base is inadequately distributed in existing institutions. Many more trained persons are needed, if the institutional response to environmental issues is to be capable of matching the extent of the problems.

Lack of Regulations

The NRCA Act mandated the preparation and enactment of environmental regulations, but to date this has not been done. The lack of regulations, guidelines and standards will prevent effective regulatory control of the environment.

Lack of Environmental Information

Although some baseline information exists, much work remains to be done. In addition, the type of information in existence, may be inappropriate for defining the source or extent of persistent environmental problems.

Lack of Enforcement

Sufficient sanctions and effective enforcement are absent.

2.3 Institutional Profiles

2.3.1 Natural Resources Conservation Authority (NRCA)

The Natural Resources Conservation Authority Act of June, 1991, established the Natural Resources Conservation Authority as the primary agency with responsibility for environmental management in Jamaica. Under the Act the Authority is mandated to take such steps as necessary for the effective management of the physical environment of Jamaica and to ensure the conservation, protection and proper use of its resources; and to carry out related functions. A Board of ten persons has been appointed as members of the Authority. The Board has been meeting at regular intervals and has started the process of addressing some of the major problems facing the Authority. NRCA as a statutory organization falls within the portfolio responsibility of the Ministry of Tourism and the Environment. Given its present Ministerial location, it will be necessary to ensure that economic planning and environmental planning maintain a coordinated relationship.

The creation of the NRCA rests on the basis that such an institution would be able to implement a National Environmental Policy and also effectively manage the environment through the establishment of appropriate regulations, monitoring and

enforcement systems. The NRCA by law is responsible for the overall formulation of national environmental objectives (including enforcement, or, perhaps, simply enforcement coordination) and will together with the sector ministries and associated agencies determine and clarify responsibilities and activities necessary to achieve environmental objectives. It is envisaged that NRCA would make enforcement information and advice available, draw up general guidelines, and regulations, which will inform the planning and policy decisions of sectoral entities allowing them to adapt to the national environmental objectives to be pursued. Two Committees have been established to implement Inter-ministerial coordination:

Inter-Ministerial Committee

This is an environmental Inter-Ministerial Committee, which will be chaired by the Minister responsible for the Environment. The Committee will have responsibilities for ensuring that policies, programmes and other initiatives to be supported by GOJ are compatible with environmental goals. The Committee will ensure co-operation between all Ministries and Agencies thus reducing potential conflict of interest on specific issues and inefficient use of scarce resources particularly where there is jurisdictional overlap. It is expected that this Committee will be able to reduce existing conflicts between Ministries and Department. This Committee could also facilitate the development of policy proposals and legislative reform.

Technical Advisory Committee

A standing inter-agency Technical Advisory Committee comprised of senior personnel of Sectoral agencies which will serve the Inter-Ministerial Committee and the Board of NRCA on the implications of policies and programmes issues. This Committee will be chaired by the NRCA Executive Director, and will include the Ministry of Agriculture, Ministry of Tourism and the Environment, Ministry of Mining and Energy, Ministry of Construction (Works), PIOJ, TPD, ECD, and MOH.

The organizational structure of the NRCA currently calls for:

1. An Environmental Planning and Assessment group concerned with: Environmental Planning and Assessment, Environmental Education, NGO Liaison and Outreach, and Special Projects and Project Management;
2. An Environmental and Resources Management group concerned with: Watershed Protection and Management, Pollution Control and Waste Management, National Parks Protected Areas and Wildlife, Beaches, Coastal and Marine Systems, and Laboratory and Technical Support; and
3. A Department for Administration, Finance, and Administrative aspects of implementing the licence permit systems under the NRCA Act.

None of the above Departments are currently in operation, however, recruitment for key staff positions is under way and most of the Departments are expected to be operational by Fall, 1992.

Organizational Analysis

- a. **Legislation:** The relevant legislation under which the NRCA operates is: the Natural Resources Conservation Authority Act (1991); the Beach Control Act (1956); the Watershed Protection Act (1963), and the Wildlife Protection Act (1945).
- b. **Mandate:** The NRCA was established for the purpose of increasing public understanding of Jamaica's ecological systems and promoting methods for conservation and development of the country's natural resources; determining policy to be followed and the standards to be maintained in the management of land, water, fauna and flora; and promoting and ensuring the proper use of natural resources by the establishment of an ecological review procedure for development proposals.
- c. **Doctrine:** The values and objectives of the NRCA are focused increasingly on the definition of environmental policy and standards, regulatory functions, and enforcement of the law. Responsibility for watershed conservation actions and other resource management functions are being assigned to other agencies or phased out due to the lack of resources. While the NRCA is responsible for the identification and conservation of unique natural areas and planning, development and maintenance of national parks, there is no effective programme in place. Only in beach development and maintenance and the certification of lifeguards is there a consistent operational programme. Otherwise, the agency handles spot problems and responds to emergencies rather than implementing planned activities.
- d. **Financial Status:** Once NRCA is fully established, it will have the authority to commit funds nominally assigned in the budget. Currently, NRCA is operating under the same restrictions that previously applied to NRCD which included careful Ministry supervision over its budget. However, once NRCA sets up its own financial mechanisms, this should no longer be a problem.
- e. **Pattern of Organization:** NRCA's organizational structure is not yet settled as this is currently being sorted out with the Ministry of the Public Service. Until this is done, the previous NRCD's organizational arrangements continue in operation. At present, NRCA is organized in five functional areas or branches: Administration, Resource Management, Recreation and Conservation - Beaches and National Parks, Watershed Management and Development, and Aquatic Resources. Due to vacancies and lack of qualified staff, the agency has assigned dual

responsibilities to many staff members and often operates on a task force basis to resolve problems or to complete specific tasks.

Management Analysis

a. Management Capability: Apart from the appointment of an Executive Director, NRCA has made only a few staff appointments at the time of this writing. Therefore its management capabilities are assessed in terms of the existing NRCD staff. It is difficult to judge the management skills of the agency's staff at a time when the level of activities are low. As most functional areas are only one or two persons deep, the opportunities for gaining experience are limited. Previous reports on NRCD highlighted serious management problems of that organization and these problems still persist.

b. Inadequate Office Accommodation: Lack of adequate office accommodation contributes to low staff morale.

c. Linkages: The NRCA has appointed a board of 10 members to fulfill the functions of the Natural Resources Conservation Authority Act.

Staffing

The 1988 establishment of the NRCD listed 77 posts, as follows: Administration 28 (6 professionals); Resources 11 (4 professionals); Watershed Management 18 (10 professionals); and Aquatic Resources 11 (6 professionals). This staff is a significant reduction from the staff of 122 posts that the NRCD had when it was a department. The staff of NRCD has been transferred to NRCA and the Authority is now completing its determination as to those positions to be retained by NRCA.

While compensation levels are an immediate issue for many employees of NRCA, there are other important factors that have contributed in the recent past to low morale. The frequent changes of Principal Directors (under NRCD), management problems, a lack of clear directives and priorities, and uncertain and inadequate equipment and financing contributed to the sense that there had been lack of Ministry support for the agency's mission. With the naming of a new executive director, the apparent Ministry support for NRCA, and the emerging clarification of existing staff to be retained, the agency morale is on the upswing. Recruitment of new staff by NRCA will be difficult, however, unless staff salaries and benefits are high enough to attract and retain qualified staff.

Major institutional problems of NRCA (at time of this writing)

- administrative arrangements for the functioning of NRCA, not yet settled.
- approval of staff posts and staff structures, not yet approved by the Ministry of the Public Service.

- no clear break from the NRCD.
- NRCA has not yet identified the specific issues that it is capable of tackling at this stage.
- delay in implementation of NRCA resulting in poor public image of the Authority.
- delay in determining the allocation of what staff of NRCD should be engaged by NRCA.
- NRCA management structures not clearly identified.
- NRCA has not yet taken any steps to implement regulations.
- NRCA is not able to enforce new statutory provisions.
- delay in naming Divisional Directors and other support staff.
- lack of suitable laboratory equipment
- inadequate number of vehicles.
- lack of suitable and adequate office accommodation.

Preliminary Suggestions for Improvement of NRCA

To address the immediate and future problems of NRCA, the following matters appear to require attention:

- the immediate appointment of Divisional Directors;
- support staff should be appointed within the next three months from the appointment of the Executive Director;
- a management survey should be done within the next three months to determine what management systems should be put in place for NRCA;
- NRCA should be located in new offices with suitable office supplies and equipment put in place over a phased basis;
- the NRCA Board needs to develop clear policies;
- NRCA regulations, guidelines and standards should be prepared within the next six to nine months;
- NRCA should put in place an enforcement unit and appoint an appropriate number of local enforcement officers;
- NRCA budget allocation should reflect the importance of environmental management in the context of Jamaica's overall economy;
- as NRCA has been empowered with a wide range of responsibilities, the NRCA Board needs to determine which of these functions NRCA will be able to perform in the short term and make an early determination as to its long term capabilities;
- NRCA should finalize NRCD staff transfers immediately;
- NRCA should establish a timetable for completing environmental guidelines and quality standards;
- NRCA should establish a timetable for the completion of comprehensive legislation (National Resources Conservation Authority Act) including identifying constraints and possible approaches;
- NRCA should design a training programme for NRCA personnel to address lack of comprehensive environmental training and to define and implement staff development programmes;
- NRCA should initiate discussions to define respective roles for NRCA, TPD and ECD and the mechanisms for strengthening

- inter-agency coordination as well as a timetable for implementing them, particularly in the area of environmental control;
- NRCA should evaluate possible mechanisms and feasibility of cost recovery (updating and expansion of user fees) to supplement NRCA's budgetary resources and promote better utilization of NRCA's services;
 - NRCA should initiate the design of an Environmental Monitoring Plan to accommodate the collection of baseline information on air, water and soil conditions;
 - NRCA should develop procedures for EIA including: (a) defining prescribed areas, consultation and activities; (b) integrating EIAs into the planning and approval process; and (c) determining the content and characteristics of EIA training programmes for government and private sector.

Among the important aspects of any statutory agency charged with the regulation and enforcement of environmental controls are:

- o the credibility held by the agency before the concerned society, which together with a certain degree of public environmental awareness, is necessary for solving emergent environmental problems, especially during negotiation with developers when public opinion is needed to reinforce institutional decisions;
- o an established set of environmental regulations to facilitate the conforming by polluters to environmental quality standards;
- o the existence of technical and management capacity within the agency to be improved by training and consultancy, to make it possible for the application of the knowledge thus acquired for the enhancement of environmental quality;
- o the involvement and commitment of agency staff to the institutional development process to guarantee implementation and change of policy and behavior; and
- o equipment for monitoring and laboratory analysis.

Significant improvement in both institutional support and redrafting of legislation is a basic precondition for NRCA to benefit from participation in the DEMO Project. Therefore, it is essential that highest priority be given to projects involving these changes. Maintaining the institutional status quo will constitute a severe obstacle to the project's implementation and contribute to its failure.

2.3.2 Other GOJ Institutions

There are a large number of GOJ institutions outside of NRCA having some responsibility over environmental management. However, the primary focus of USAID assistance is appropriately

with the NRCA. Jamaica desperately needs some sort of "umbrella" agency that can both co-ordinate and direct the great multitude of agencies presently with some sort of environmental concerns in their mandate. These institutions are briefly described below.

Environmental Control Division (ECD), Ministry of Health

ECD is responsible for the development and application of environmental standards geared towards the protection of public health, livestock, crops and natural resources. It is also mandated to carry out monitoring and assessment with regard to the control of water quality, sewage, industrial waste waters, solid waste, industrial working environment, air pollution and noise.

ECD is severely under resourced, and unable to fill any of its engineering and scientific positions. Further, the functions for which the ECD is currently responsible would benefit from major upgrading. This would involve the whole gamut of institutional strengthening processes, including the development of policy, legislation and regulations, human resource department, and the provision of appropriate physical facilities and equipment.

Several reports have indicated the overlapping of functions between NRCD/NRCA and ECD, and it is considered that overall environmental management could be better accomplished by the merging of NRCA and ECD. Such a merger would result in a better utilization of scarce resources and avoid duplication of efforts. However, no such merger is recommended until NRCA is in a position to fulfill its existing mandate.

Town and Country Planning Authority

This agency is responsible for development control in Jamaica under powers vested in the Town and Country Planning Act. This agency is also responsible for preparing the National Physical Plan; for formulating policy on land use and development; for preparing land use studies, plans and regulations; for preparing development orders and for coordinating the interagency review of developmental applications. Deficiencies in the structure and functioning of the physical planning and development control process in Jamaica were the subject of detailed analysis in a USAID report entitled "Town Planning and Land Development in Jamaica: an Agenda for Reform", (Kingsley and Wines, 1987). Reform and strengthening of the physical planning and development control process has two components: support at the centre, for the TPD; and creation of a regional planning system to allow increased local input to the development process.

Urban Development Corporation (UDC)

The Urban Development Corporation is authorized by the Urban Development Corporation Act to carry out urban development and

renewal. UDC is a major development arm of the Government and it undertakes projects, mostly large scale ones, which private enterprise would find too risky or unprofitable, but which are vital to economic growth. Under the Urban Development Corporation Act, UDC can acquire, dispose of land within (and sometimes outside) certain designated areas; undertake infrastructure development; and continue to manage projects which it has completed. A major subsidiary of UDC, National Hotels and Properties Limited, has overall responsibility for the remaining hotel properties owned by UDC.

Under the Urban Development Corporation Act, UDC is the local planning authority in areas zoned as UDC designated areas. Under section 14 of the Act, various area orders can be made. Orders under the Act have been made in respect of the following areas: Kingston, Waterfront (1968), Ocho Rios (1969), Hellshire Hills and Offshore areas (1969), Negril (1969), Montego Bay (1969), Fairy Hill (1975), Caymanas, St. Catherine (1986), West Kingston (1986), West Kingston (Area No. 1) (1986).

The planning process is the same for Parish Councils, in that UDC is required to submit plans to the Town and Country Planning Authority for advice. Projects involving shore engineering and beach construction should be referred to UDC.

The Planning Institute of Jamaica (PIOJ)

The PIOJ is responsible for planning for economic, financial, social, cultural and physical development of the country. This agency is responsible for integrating the individual sectoral plans into the National Development Plan. PIOJ manages the government's technical co-operation programmes and agreements. It conducts research and training and provides consulting services to government agencies. In addition, PIOJ currently has responsibility for the PARC Project and was the executing agency for the Tropical Forestry Action Plan.

Forest & Soil Conservation Division (FSCD)

FSCD was formed in 1985 by the amalgamation of the Soil Conservation Unit with the Forestry Department. FSCD is currently a part of the Ministry of Agriculture.

FSCD's functions initially included the development and management of plantations and natural forests, forestry research, soil conservation, and watershed management, providing an extension service to farmers, stimulation of private forestry, and forest recreation development and management. In 1991 soil conservation functions were transferred to RADA.

FSCD has responsibility for forest reserves. These reserves have enormous ecological and hydrological value, and particularly in

the Blue Mountains, considerable potential as tourist attractions.

FSCD is headed by a Director who reports to the Director of Technical Services in the Ministry of Agriculture. The Director is supported by a Divisional Management Committee, four sub-Committees for Staff Development and Advisory Forest Management, Soil Conservation Management. FSCD has a staff of over two hundred and fifty (250) professional, technical, administrative, clerical and other support services. In addition, there are approximately forty (40) other project staff members.

The staff is currently divided among eleven main components of the Division; namely, Marketing Unit, Planning and Evaluation Section, Training and Extension Unit, Support Services, Finance and Accounts Branch, four decentralised Regional Branches, the Research and Development Services and a Soil Conservation Branch.

FSCD has suffered from lack of funds and transport for years, which has rendered it unable to properly manage and control the forest and to establish or maintain a worthwhile programme of hardwood replanting. In addition, FSCD suffers from a severe shortage of trained manpower. Overcoming these problems will require an infusion of graduate staff, improved performance of existing staff and the provision of necessary resources.

The Underground Water Authority (UWA)

UWA was established under the Underground Water Control Act, 1959. From 1959-1985, its primary duties were:

- a) the promotion of the conservation and proper use of underground water resources;
- b) the control of exploitation and proper use of such water resources; and
- c) the collection and compilation of hydrogeological data in relation to all wells or boreholes.

Since 1985, the functions of this agency have been expanded to include the former Water Resources Division and the responsibility for surface and groundwater resource inventory, planning, allocation and monitoring. Regulation of groundwater extraction is exercised through the issuing of permits for well construction and water extraction. Legislation is now pending to establish a Water Resources Authority which would replace the UWA.

National Water Commission (NWC)

The NWC is the agency responsible for the development of water sources and the treatment and distribution of domestic and industrial water supplies. This agency is also responsible for

the collection, treatment and disposal of domestic and industrial sewage. The NWC operates throughout the island.

There are several other GOJ agencies working with environmental issues, and these agencies will also benefit from some assistance efforts. For example, the Environmental Control Division (ECD) of the Ministry of Health currently lacks the capability to conduct surveillance programmes throughout the island. Equipment and qualified personnel are the key problems this agency faces. In addition, new regulations need to be drafted under the Public Health Act. The DEMO Project may be able to assist this agency through the provision of contracted personnel to help develop and implement monitoring programmes and guidelines.

The National Water Commission would benefit from improved laboratory facilities to promote the implementation of an appropriate sampling schedule for monitoring of potable water sources. The Commission would also be strengthened by the provision of training courses for staff in data compilation, interpretation and management.

Metropolitan Parks and Markets would benefit from technical assistance in the development of appropriate guidelines and regulations for operation of waste disposal sites. Technical assistance would also be helpful in assisting its effort to identify and develop implementation plans for the closure and re-siting of numerous legal and illegal dump sites in several urban areas. All urban areas would also benefit from an increased number of skips (waste collection dumpsters) appropriately distributed throughout the area.

3.0 NON-GOVERNMENTAL ENVIRONMENTAL ORGANIZATIONS

Non-Government Organizations (NGOs) have an extremely important role to play in environmental education and environmental mitigation, both directly and through involving the general public and the business community in conservation. Support for such organizations can have a considerable multiplier effect.

Despite lack of funding, the participation of NGOs concerned with environmental management has been part of the national life for many years. The original focus of local NGOs was directed towards education, scientific exchange, resource conservation and outdoor recreation. Presently, a wider cross-section of the general population has begun taking an active interest in issues associated with resource exploitation. In response to the escalation of environmental problems, the scope of NGOs has

expanded considerably to include all aspects of environmental management.

Given adequate funding and institutional support, NGOs could complement the activities of Government and greatly assist in the successful implementation of the DEMO Project.

NGOs strengths include:

- o Intimate knowledge of local conditions and close relationship with local communities which give NGOs the ability to facilitate initiatives that reflect local needs and conditions.
- o The flexibility needed to develop, test and carry out innovative approaches to working with local communities.
- o Enthusiasm and motivation to carry out programmes
- o The ability to integrate environmental activities within broader development programmes.
- o Relatively low administrative costs, and a commitment to long-term programmes and to achieving local self-sufficiency.

The major contribution of NGOs is the promotion of community-based participatory environmental programmes that benefit economically or socially disadvantaged groups. More specifically, NGOs play a particularly important role in organizing and facilitating local initiatives by raising public awareness, providing technical assistance, and carrying out other extension activities. They can also facilitate government locally and assist agency programmes that are compatible with their own objectives.

3.1. NGO Capabilities

Experience in the United States and Europe, and increasingly in the developing countries, has demonstrated the effectiveness of NGOs working on environmental and conservation actions. In many cases they have been shown to be more effective than government, particularly where the participation of the community is required for success. Experienced and well established NGOs have the following advantages over national agencies. They are generally:

- o Single purpose organizations
- o Knowledgeable in the subject, with access to technical expertise from diverse sources
- o Insulated from shifts in government policies and priorities
- o Have private and public sector linkages and support, and able to build a constituency and lobby for programmes
- o In contact with international organizations and financial

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- o donors for advisory assistance and support
- o Flexible in operations, can form government/private co-operative efforts, accept contracts, administer funds effectively and without the constraints of public agencies.

NGOs are not normally empowered to apply the laws, enforce regulations or use other powers of the state, otherwise they are no longer non-governmental. However, they can be effective supporters of government in fulfilling its functions, and effective critics when government cannot. Perhaps the major characteristic of environmental NGOs is the dedication and enthusiasm they have for their mission.

Although there are numerous private non-governmental organizations in Jamaica concerned with environmental issues, few have been able to undertake major programmes. As a consequence some doubts have been expressed particularly as to their capability to effectively utilize major grants for conservation projects. This opinion ignores the success of other types of NGOs in Jamaica, such as the United Way of Jamaica and Partners of the Americas, which effectively carry out a wide range of grant projects.

3.2. NGO Assessment Criteria

The Nature Conservancy has identified the following characteristics of a successful NGO based on its experience in building 50 state chapters in the United States, and in advising on the formation of 22 NGOs in Latin America and the Caribbean. The characteristics of a strong NGO have been found to be:

- o **Focused Mission:** Within the context of overall goals, energies are concentrated in carrying out a strategic plan within a set time frame.
- o **Strong Board:** Convinced of the mission, proactive in support, influential in the private and public sectors, and able to generate financial resources.
- o **Professional Staff:** Dedicated qualified full-time staff that is action oriented, with a high degree of initiative and an ability to follow through.
- o **Effective Projects:** Well planned and attainable projects carried out in an efficient manner that achieve overall goals.
- o **Financially stable:** Continuity in the financing of recurrent expenses for operations, with the ability to generate additional funds for specific projects.

These criteria are useful in describing the strength of an organization at a point in time, and for monitoring its evolution. The criteria are also useful to an NGO in designing an organizational development plan, and for measuring its success in implementation.

Given the importance of NGOs in the DEMO project it is considered that an umbrella organization should be selected to manage and coordinate the various activities and programmes and designs for the institutional strengthening of NGOs. The only two significant NGOs would be NEST and JCDT. It is to be noted that JCDT already has a large role in the initial PARC project and this role will be presumably enhanced and expanded during the course of PARC II.

3.3 Selection of an NGO Coordinating Entity

NEST is the most appropriate NGO to act as the coordinator for the DEMO Project related to NGO institutional support. This recommendation is supported by consideration of the following factors:

One of the important objectives of the DEMO project is to strengthen existing environmental institutions. Thus the selection of an NGO coordinating entity should be found within the existing NGO community. For that reason, supporting groups such as the United Way would not enhance the long term sustainability of NGO institutional development.

NEST already has the mandate to coordinate NGO activities and to encourage and facilitate the development of new NGOs. In addition, NEST membership covers NGOs in a wide cross-section of locations as well as a diverse range of activities. NEST has already established links with a number of organizations, e.g., WWF, UNEP, and UNDP. NEST involvement with these organizations has been to obtain support for NEST as well as for its members.

3.4 NGO Training Requirements

Training is urgently needed by all NGOs in the following subjects:

- (a) organizational development;
- (b) project formulation (grant proposal design);
- (c) financial management and accountability; and
- (d) mobilizing community support and voluntary participation.

A cadre of experienced trainers should be developed among the staff of the NEST and a scheduled training programme begun at an appropriate facility.

3.5 Assessment of JCDT and NEST

The two environmental NGOs that are the most advanced in their evolution are JCDT and NEST. They are quite different in focus and mission. NEST is an umbrella organization of 24 NGOs. Its role is to encourage and support citizens' participation in local conservation actions, rather than to implement projects by itself. JCDT, a member of NEST, was organized to develop and carry out specific projects.

3.5.1 National Environmental Societies Trust (NEST)

Nest was formed in 1989 as a national umbrella organization by 12 environmental NGOs, PVOs and private associations and interest groups. Membership in NEST is open to organizations with at least 20 members that share the objectives of NEST. Annual organizational membership fees are J\$200. Corporate and individual memberships are also available at differing rates. The number of member organizations has grown over the last year, and several candidates are being considered.

Of the approximately 40 known environmental groups in Jamaica, 24 are members of NEST, but contact is maintained between NEST and a number of the non-member NGOs. Most member groups are involved with environmental education and public awareness programmes, conservation projects such as tree planting, recycling, monitoring of natural resources such as forests, watersheds and reefs and lobbying for the establishment of special protected areas. The membership of NEST can be roughly divided into two categories:

1. Community-based groups with activities primarily focused on preserving their immediate environment. These groups are run largely on volunteer efforts who have little formal training in environmental sciences, project development and implementation. Funding is derived from the local private sector (cash or in-kind contributions) and locally based foreign donor agencies.
2. Special interest groups which concentrate their activities on one specific element of nature or environment (example Gosse Bird Club, Jamaica Orchid Society, etc.) for largely leisure or informative purposes. These groups tend to be well established and function without staff. They may undertake research, monitoring or conservation activities from time to time but do not usually have plans for an on-going environmental programme.

However, there are some exceptions to these two categories. JCDT is national in scope and its mandate is to promote sustainable development through National Parks and Protected Areas, environmental education and research and planning and has a professional staff to do so. The Construction Resource

Development Centre undertakes research in the informal building sector and low cost housing. The professional associations such as the Town & Country Planning Association and the Association of Science Teachers of Jamaica also complement the NEST membership.

(a) Mission:

The mission of NEST is to encourage and support citizens' participation and actions for the conservation, protection, and enhancement of Jamaica's natural environment. It seeks to accomplish this goal through actions such as:

- o institution building of itself and of its member organizations;
- o providing a forum for the discussion of environmental issues and to lobby for solutions;
- o providing a communication network among local NGOs and the Government, and between local NGOs and regional and international agencies;
- o assistance in the formation of new community based NGOs;
- o support for community projects to protect, manage and enhance the environment;
- o education of the public on the role of individuals in good environmental management;
- o a central secretariat offering administrative services to strengthen the operational base of NGOs;
- o technical assistance to help NGOs in the identification, formulation, planning and implementation of community projects;
- o a management and administrative facility for international funding agencies and local corporations wishing to assist NGO projects and programmes;
- o a funding facility to assist NGOs in identifying, procuring and managing project funds.

(b) Board

NEST has a board of twelve (12) members, seven (7) of which are representatives of the NGO member organizations and five (5) are professionals from the environmental, business, education, and legal fields. Board members serve for one year, are elected at the Annual General Meeting from nominees of the constituent groups and others proposed by the outgoing board. Board members have a broad range of business skills, often connected with tours and related business, as well as education, law and finance.

(c) Staff

NEST has a Programme Officer in place and has office space rented in the premises of JCDT. A full-time Executive Director is to be appointed.

(d) Projects

NEST has prepared an organizational action plan, with the help of a management consultant, and has undertaken a successful publicity campaign. The organization has been effective in establishing an identity over the last year without staff, largely through the effective representation of the board members. NEST produces a newsletter, and has taken positions in coordination with JCDT and other members on key environmental issues such as the dredging in Montego Bay.

The Regional Coordination Unit of UNEP in Kingston is negotiating a cooperative agreement with NEST for the establishment of a computerized documentation centre to be managed by NEST. The Documentation Centre will be a clearinghouse of information from both national and international sources. This information will be made available to the NGO community.

(e) Finances

Initial financing of NEST was provided by contributions and no interest loans from the founders and members of the Board. Grant proposals prepared are under consideration by donors. WWF has approved a grant which will finance the installation of the office and the hiring of a full-time Executive Director and Assistant. NEST board members are planning to establish an endowed trust fund to finance basic recurrent operational costs and the core staff positions.

(f) Activities

NEST's mandate has been to act as a catalyst and facilitator of NGO activities. To date, NEST has been able to facilitate the funding of a number of projects undertaken by member NGOs by either submitting proposals on their behalf to donors or by acting as a liaison or link between the NGO and the donor agency. NEST has worked with the Jack's Hill Community Council and PEPA with funding from UNDP to carry out their tree planting and environmental education programmes respectively. NEST has also assisted the Natural History Society and the Bluefield's Trust to access funding from CIDA and has secured funds for the holding of a coral reef sensitization workshop for the Negril Chamber of Commerce.

NEST has secured funding from the WWF for organizational support and institutional strengthening. This allowed NEST to hire a programme director for one year initially, and to produce a bi-monthly newsletter. This assistance was of extreme importance to the development of NEST as it facilitated a permanent avenue of communication between NEST and the NGOs and between the NGOs themselves, through NEST.

In addition to supporting NGOs, NEST has also been appointed to act as the National committee for UNEP in Jamaica and is a member of the CCA, and the environment committee of the PSOJ. NEST has participated in various workshops, seminars and round tables sponsored by various agencies and has been an active participant in the drafting of the environmental framework agreement under the Enterprise for the Americas Initiative working closely with government and other NGOs in its preparation. NEST was also one of the two NGO representatives participating in the negotiation for the Environmental Framework Agreement. NEST is currently in the advanced stages of planning a proposal design workshop for NGO members who are interested in developing proposal design and presentation skills.

(g) Future Plans

NEST intends to continue its role of assisting member NGOs in environmental projects rather than undertaking project execution. NEST, as an umbrella organization, could continue to submit proposals, assist with project implementation and the management of project funds. NEST as a central organization could also assist NGOs to become better able to manage environmental projects. In addition, NEST could provide national coordination for the training of NGO staffs.

NEST could be the instrument of a national public awareness campaign which would be focused, not only on environmental problems but also highlighting the solutions and successes which have been achieved by the NGO movement. This would motivate existing NGOs and encourage the formation of new ones to undertake similar projects in their communities.

NEST should develop as wide a range of linkages with external NGOs as possible in order to broaden its base of support to the utmost. This is particularly important since each NGO has some particular expertise or service that is their special competence.

NEST Development Grant

It is suggested that the DEMO Project could usefully provide NEST with assistance in institutional development as a separate action regardless of the role that it will play in the implementation of specific actions. Grant support over the life of the Project is recommended upon submission of a description of activities and a proposed budget. NEST should be required to match a grant with funds received from private sources, say 25 per cent. These funds would be used to complete the organization and installation of the office, contract personnel for development and project implementation actions, train personnel in management, public relations and publicity, and implement an environmental awareness campaign.

3.5.2 Jamaica Conservation and Development Trust (JCDD)

The JCDD was founded in November 1987 and has attracted about 200 national members (dues J\$100 per year), and 30 international members (US\$25 per year), and 25 corporate sponsors. A local chapter has been organized in Montego Bay, and others are planned throughout the country.

(a) Mission

The mission of the JCDD is to sustain the social and economic development of Jamaica by private actions to protect the natural resources and environment of the country. The JCDD will complement and support government efforts by actions that:

- o Protect habitats and species through facilitating the establishment of parks and protected areas and by supporting those agencies responsible for land management and environmental protection;
- o Educate all levels of the society on the importance of conservation, and support the development of environmental education and professional training;
- o Work with planners and developers to ensure that environmental concerns are addressed in the early stages of development actions, and sponsor research to determine the requirements for sustainable development; and
- o Promote the partnership of business, government and community leaders to support environmental programmes in their sectors, and build an active membership in support of Trust activities.

(b) Board

The Board is composed of 15 members elected at the Annual General Meeting or invited to serve and broaden the representation. Initially, most of the board members were scientists from the UWI, engineers and consultants. More recently people with business and financial experience have been recruited.

(c) Staffing

The paid staff of the organization is composed of an Executive Director, a Development Officer, a Parks and Protected Areas Officer, an Administrative Assistant, and a Secretary/ Receptionist working full-time. A part-time Accountant was hired at the start of 1991. With the exception of the Administrative Assistant, the present staff has been with JCDD for less than a year.

(d) Projects

JCDD activities have focused on national parks and protected areas issues through its role in carrying out the USAID funded Protected Areas Resource Conservation (PARC) Project in

collaboration with Government. The Executive Director participates in meetings of the project coordinating committee of the PARC Project. The Local Advisory Committees established for the Montego Bay Marine Park, and the Blue Mountain and John Crow Mountain National Park, are also supported by the JCDD. In addition, JCDD also received PARC Project funds to contract the development of the National Parks and Protected Areas System Plan. A National Park Trust Fund has been promoted by the JCDD which will be capitalized by a debt for nature agreement with the Bank of Jamaica. USAID and the Nature Conservancy will establish initial funding for this debt programme.

(e) Assistance Needs

In the short run the JCDD needs a continuous training programme for its staff in Kingston, and for the volunteers that form the local chapters throughout the country. Audio visual equipment, and office furnishing will be required as additional staff is recruited. In the future the JCDD must build a broader base of national support, acquire a permanent building, and develop a long term financing base for recurrent expenses.

4.0 ENTERPRISE FOR THE AMERICAS INITIATIVE

The Enterprise for the Americas Initiative (EAI) announced by President Bush is aimed at reducing the \$12 billion in debt owed by countries to the United States. The 1991 Farm Bill (Public Law 101-624) is the first legislation to implement the EAI. Under its provisions the debt incurred for food purchases under Public Law 480 is eligible for restructuring. Jamaica's Public Law 480 debt is about \$270 million. Additional legislation is expected in Fiscal Year 1992 to include development assistance loans made by USAID, and eventually EXIM Bank and the Commodity Credit Corporation debt to the EAI programme. An additional \$465 million of development assistance loans to Jamaica will then become available for restructuring, probably under similar terms that were approved in the Farm Bill.

Under the provisions of the Farm Bill, Jamaica has negotiated a referendum agreement (subject to parties) final approval at the Environmental Framework Agreement with the U.S. Treasury which will reduce the amount of Public Law 480 debt by 80 per cent. Interest on the remaining debt will be paid to a Jamaica EAI fund in local currency. The fund will finance grants to Jamaica non-governmental organizations and community development groups to carry out environmental projects. The grant programme will be overseen by an administering body on which non-governmental organizations (NGOs) will have a majority.

Government's ability to increase funding for environmental actions through NRCA will be limited in the immediate future. Therefore, the energies and resources of local communities and non-governmental organizations must be stimulated to complement the work of NRCA on environmental problems, and to carry out those projects best done through private initiative. The EAI is a unique opportunity to reduce the external debt of Jamaica, and to give significant support to the environmental actions of NGOs. The leadership of JCDT and NEST, and the energy of the numerous voluntary organizations, will make the environmental grants programmes established through the EAI effective. However, the capacity to carry out grants will have to be developed over time. An organized systematic training programme must be developed to harness the energies of these groups to prepare them for effective utilization of Environment Fund disbursements, and to utilize the financial resources received from other donors.

There will be a need to ensure that there is no substantial overlap between EIA and the DEMO Project. There are, however, some salient differences, these include the following:

- EIA is primarily designed to benefit NGOs, and the GOJ can only be a beneficiary in exceptional circumstances;
- In the case of the DEMO Project, there will be significant funds for the institutional support of GOJ institutions;
- The SITE activities under DEMO will be designed so as to ensure collaborative efforts between GOJ and NGOs. In this regard, the funding for the SITE activities will benefit both local NGOs and local GOJ institutions;
- The SITE activities will be specific areas only and there will be no support for NGO projects outside of the enumerated areas. In addition, the SITE activities will be designed to reflect some major environmental concern in the areas chosen; and
- While EAI is focused on NGOs, an underlying philosophy of the DEMO Project is the need to ensure that both GOJ and the NGOs develop collaborative mechanisms to manage Jamaica's environmental problems.

As much as possible the DEMO Project will be complementary to EAI. One of the focal points of the DEMO Project will be to assist NGOs to develop project writing skills and management skills. Technical assistance by the DEMO Project in this respect will facilitate NGOs applying for projects using EAI funds and also the ability of such NGOs to manage approved projects. In addition, other institutional support for NGOs by DEMO, e.g., establishment of corporate status and setting up of accounts could also enable an NGO to meet eligibility requirements to receive funds under the EAI programme.

5. POSSIBILITIES FOR DEMO PROJECT ACTION

A. Government of Jamaica

Short-Term

1. Assist NRCA to carry out a management survey to determine what management systems should be put in place for NRCA.
2. Assist NRCA to develop its capacity to fulfill its regulatory responsibilities. This would involve the preparing of regulations and the training of enforcement officers.
3. Assist NRCA in the development of an effective National Parks Division. In this connection training and technical assistance along with equipment and supplies would be of major importance.
4. Assist NRCA to be staffed and trained for the tasks of establishing terms of reference, reviewing, monitoring and enforcing EIAs. (The responsibility and cost for conducting EIAs should be borne by the party proposing the development activity.)
5. assist NRCA to design a training programme for NRCA personnel which would begin to address the lack of comprehensive environmental training. Training opportunities for increasing technical personnel, increasing community and NGO involvement, and raising awareness of the island's civil service needs to be developed.
6. Attention should be paid to not overloading the NRCA while it is getting its feet on the ground. In addition to geographical focus, support for NRCA might first focus on developing competence in one sector where the connection between sound environmental management and successful development is clear. One focus might be on the tourism industry in sensitive areas. Early successes will establish the NRCA's credibility while acquiring experience and working out formal and informal procedures.
7. Support for NRCA should be linked to some support for the TPD, since effective environmental management will also require the revitalization of the physical planning and development control process. This support could be done in SITE Projects.
8. Assist UWA in the development of regulations under the proposed Water Resources Act.

Long-Term

In the long-term, NRCA needs to have its regulations, guidelines and standards in place with the technical capability to conduct EIAs, monitor environmental problems and effectively manage the environment in collaboration with the public at large and specifically the NGO community. In order to do this on a long-term basis, Government must translate policy statements into

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specific action to design and to strengthen environmental management. In particular, Government needs to allocate adequate and sufficient budgets for NRCA. NRCA will need highly skilled and motivated staff who are properly paid. Finally, NRCA needs to embark on a fresh start to ensure effective management so as to avoid the quagmire of management problems that were the hallmark of NRCD.

Serious consideration should be given to the merger of ECD with NRCA. Attention should also be paid to institutional support for ECD in the development of policy, legislation and regulations.

B. NGOs

Support should be given to NEST to enable it to carry out its coordinating role for NGOs and to develop links with government to facilitate the solution of environmental problems. There should be a special focus on training of NGOs with the provision of limited technical assistance to support NGO environmental management activities.

The strategies for institutional development will encompass:

- o rationalizing and strengthening existing lead institutions rather than creating new ones;
- o a comprehensive public education programme;
- o developing strong linkages between lead agencies, planning bodies and related institutions;
- o incorporating NGOs into the network of environment-related institutions;
- o facilitating the work of institutions through increased public environmental awareness; and
- o mobilizing national and regional expertise.

LIST OF NEST MEMBERS

Association of Science Teachers of Jamaica
Bluefields People's Community Association
Construction Resource & Development Centre
Friends of the Hope Zoo
Geological Society of Jamaica
Georgian Society of Jamaica
Gosse Bird Club
Hope Zoo Trust
Jacks Hill Community Council
Jamaica Alternative Tourism, Camping & Hiking Assn
Jamaica Civil Service Association
Jamaica Conservation & Development Trust
Jamaica Geographical Society
Jamaica Horticultural Society
Jamaica Junior Naturalists
Jamaica Orchid Society
Jamaica Sub Aqua Club
Negril Coral Reef Preservation Society
Natural History Society of Jamaica
Negril Chamber of Commerce
Portland Environmental Protection Association
St. Ann Environmental Protection Association
Town & Country Planning Association
U.W.I. Sub-Aqua Club

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ANNEX F SOCIAL SOUNDNESS ANALYSIS

1.0 INTRODUCTION

The DEMO Project is an institutional strengthening project that is focussed on the key concerns and constraints which limit effective environmental management. These include a lack of environmental education and awareness, lack of regulatory framework to guide environmental protection, and lack of data on environmental management practices.

The DEMO project responds to these social and institutional constraints by efforts to strengthen the public sector, environmental NGOs and community associations and to undertake site specific pilot projects. Training, technical assistance activities and interventions in demonstration sites are expected to bring about positive social and behavioral change that will have impacts on the population of Jamaica.

This analysis examines the feasibility of DEMO, given the socio-cultural context in which environmental activities take place, and assesses the impact of Project activities on beneficiary groups.

2.0 DEMO IN A SOCIO-CULTURAL CONTEXT

The DEMO Project builds on an existing environmental movement in Jamaica. Momentum has already increased among the public sector and NGOs concerned with the future of Jamaica's natural resources and the plight of the poor who depend on those resources for their survival. The compatibility of the project with the various institutions in Jamaica is further discussed in the Institutional Analysis.

2.1 Attitudes towards Environmental Management

The likelihood of project success depends upon changing current attitudes and practices which affect the environment. The Project aims to achieve this through environmental education and institutional strengthening, as well as SITE activities. Among the poor urban and rural Jamaicans, an understanding of the long-term effects of environmental degradation appear to be limited. People who are poor can ill afford the time and energy to be concerned about issues outside their immediate survival. At the same time, it is the poor who stand the most to lose from practices that deplete resources on which their livelihoods depend. DEMO builds on the work that NGOs have already initiated to address environmentally unsound practices by the poor.

Although data on who is contributing to environmentally unsound practices are limited, the general consensus is that it is young men who are engaging in practices such as cutting trees for charcoal production, overfishing coastal reefs and depleting coral and shells for tourists. Without practical alternatives, these youth are likely to continue their practices even when knowledgeable and informed about the long-term consequences.

The role of unemployed young men in environmentally destructive practices requires careful consideration in implementing the DEMO project. Training and technical assistance to NGOs and community groups must emphasize their participation and identification of ways of enhancing practical alternatives for this segment of the population.

2.2 Women and the Environment

Data about Jamaican women's direct roles in environmental management and the impacts of environmental deterioration on them are limited. There are, however, data about Jamaican women's economic roles and responsibilities in household enterprises and in decision-making processes. These data suggest that the DEMO project will need to address gender differences in targeting its training and technical assistance activities to the public sector, NGOs and community associations, in providing assistance in site pilot project activities, and in activities associated with national park and protected area developments.

A recent CIDA report (Brown and Ratray 1989) underscores the multiple and varied perceptions of Jamaican women's roles in society. These perceptions variously include profiles of women as the members of Jamaican society who are moving into the senior positions in the public and private sector, as the economic backbone of society, and as the ones who are receiving greater educational opportunities. Yet, at the same time women are still seen as exploited by a variety of social forces and among the poorest of the poor.

There is consensus that Jamaican women have historically held economic independence at a high premium, and have been the primary managers and distributors of economic resources. Indeed, women comprise almost half the labor force, and are represented in a wide variety of occupations ranging from street vendors to professionals in banks and industry. More than a third of Jamaican households are female headed in which women are the primary support for children. Within the household, men are more marginal to the residential unit, particularly among the poorer families. However, men are also often seen as important sources of economic and emotional support.

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Despite these images of a strong economic role for women, Jamaican women's employment has continued to reflect traditional disparities. In 1990, the unemployment rate for women (22.5 percent) was well over twice that for men (9.1 percent). Women are disproportionately poor in Jamaica where 60 percent earn less than \$100 per week as compared with 47 percent of men. The vast majority of employed women are concentrated in low-paying, low skilled occupations (Mehra and Bruns 1990).

Upper class women are in many dominant positions in the environmental movement, often heading or playing important roles in NGOs. Less visible are the role of poor urban and rural women in environmental management, or the effect of environmental degradation on them. However, there are suggestions that the majority of Jamaican women often bear the brunt of environmental degradation through negative impacts on health of family members -- for example, from poor wastewater treatment and sewage disposal systems. The primary role played by women in sustaining family health can result in loss of productive income-generating opportunities if environmental degradation leads to increased poor health conditions. They can also suffer from loss of income generating opportunities if environmental degradation leads to overfishing and subsequent loss of opportunities in marketing fish, or from reduced income from crop production if land is degraded (Bernal and Bruce 1990).

The role of women in Jamaican society have led some to suggest that women can be an important catalyst of change and can play an important role as the workers or lead implementors in project activities designed to reduce environmental degradation and pollution and improve environmental health. For example, a recycling project will benefit greatly from the participation of women who frequently have the greatest authority in managing domestic and municipal refuse at its source. Additionally, given the common household composition in Jamaica, women are often responsible for daily socialization and education of children. As such, they should serve as important participants and guides in the development of environmental education programs.

Although at present, there are few public sector institutions or NGOs focusing on women and environment issues, there is a clear concern and an interest in gaining institutional capacities to work in this area of concern. Both the fact that environmental deterioration can have direct impacts on women's work and that women can play roles in environmental management underscore the need to address ways to include attention to both men and women in DEMO.

2.3 Environmental Education

The environmental problems that plague Jamaica are familiar: Growing use of the atmosphere and hydrosphere as depositories for human and industrial waste results in air and water pollution. Deforestation results in degraded mountain watersheds, soil erosion, stream and reservoir silting, and reduced water supplies. Intensive use and effluent discharges threaten coastal beaches. Clearing for agricultural and urban uses destroys wildlife habitats.

Constraints are also familiar. Physical, human, and financial resources for environmental management are severely limited. Personnel trained in technical aspects of resource management are in short supply, as are urban and regional planners. Equally critical, public understanding of environmental conditions and processes is poorly developed, as is support for effective remedial action.

Clearly much needs to be done. However, a primary and initial focus must be on education and public awareness. The USAID-sponsored Jamaica Environmental Strategy (JES draft, 1991:16-17) is clear on this: "Large scale education efforts through all age ranges and economic sectors of Jamaican society must be an essential component of any environmental strategy." The CIDA sponsored JES (Ramsey 1989:37) is no less adamant: A higher level of environmental awareness is a "precondition for both effective action by government and the active involvement of commerce and industry."

Recent surveys indicate that only a small percentage of the Jamaican population understands the cause and effect relationships in the environment, seriousness of environmental deterioration, and extent to which the economy and well-being of the people depend on a robust, functioning environment. Because of their direct dependence on the environment, traditionally disadvantaged small-scale farmers, fishermen, women and other low-income elements of the population are penalized by degraded environments. Tourism is another industry that has direct links to the environment, and that can incur enormous losses if beaches, water, or other environmental amenities are contaminated.

Although certain segments of the population bear a disproportionate share of costs for environmental degradation, all Jamaicans suffer from polluted water and air, and soil erosion. Furthermore, programs to reduce or reverse degradational trends depend upon cooperation at all levels. Even the best of plans for watershed management, conceived with the best data and executed with the best technology, will fail if the

resource users are not enlisted in the effort. On the other hand, no amount of improvement in hillside farming techniques will offset land use policies that force farmers into inappropriate environments. The environment is an integrated system and demands integrated social action for its management.

Thus, in addition to those with knowledge and skills in environmental management, the population at large needs to have a basic understanding of environmental processes and issues to support local and national efforts to conserve and enhance the environment. Education at all levels emerges as the first and perhaps the most important step in an environmental management.

Somewhat ironically, Jamaica early on took a leadership position in environmental education not only in the Caribbean region but also among less-developed countries (LDCs) as a whole. Jamaica's representative served as Rapporteur General at the 1972 Stockholm Conference on the Environment, and the nation subsequently initiated a series of activities that resulted in significant environmental content in primary and secondary school curricula (CEP 1987:69 ff.; Glasgow 1989).

Despite these early achievements, efforts have been scaled back in recent years, and current levels of formal (schools) and informal (government agencies, NGOs, media) education have not kept pace with increasing pressures on the environment (CEP 1987:69-82; JES draft 1991:17). Lack of a national environmental policy and adequate funding have hampered attempts to expand and coordinate educational programs (CEP 1987:80).

Existing Capability

Jamaica is richly endowed with exceptional individuals capable of leading the country back to the position it once enjoyed in environmental education. Furthermore, institutions already exist that could translate these human skills and commitments into effective action. What is needed are assessments of the range and quality of skills available, identification of weaknesses and gaps in coverage, and provision of financial resources to make it happen. The phrase "strengthening environmental management organizations" encompasses these activities, and also is the purpose of the DEMO Project.

Almost every organization involved in environmental or resource management is also involved in education. It is convenient to distinguish between formal and informal education, although the distinction is not always clear. Formal education occurs primarily in the school system at the primary and secondary levels where general understanding of ecological principles and their relationships to human activities are taught. It also occurs at higher levels where the emphasis is on technical

training, including training teachers. Jamaica has five institutions that offer advanced environmental training: College of Agriculture, College of Arts, Science, and Technology (CAST), Teachers' Colleges, University of the West Indies (UWI), and West Indies School of Public Health. Of these, UWI in collaboration with the Ministry of Education has had the most impact on environmental curricula in the school systems, whereas CAST has taken a lead role in exploring technical aspects of environmental management and the relationships between environment and society.

The DEMO Project considers the formal educational system appropriate for teaching environmental facts, processes, and relationships.

Informal environmental education is more concerned with general awareness and specific environmental issues. It takes place in a variety of contexts that include the public school system, public sector resource management agencies, and non-governmental organizations, and the media. Regrettably, media coverage of environmental issues has to date been relatively minor (CEP 1987:70, 80). This is unfortunate since newspapers, radio, and television could play an enormously important role in the informal education process.

The DEMO Project considers the informal educational system appropriate for conveying issues and raising public levels of awareness.

2.4 Impact of the DEMO Project on beneficiaries

The Project is designed as an institutional strengthening project and will directly benefit those government institutions, NGOs and community associations working to resolve environmental problems. It is anticipated that by strengthening these institutions, the project will lead to benefits to the Jamaican public at large in the form of improved environmental management practices. The Project will be implemented nation-wide and is anticipated to reach NGOs and community groups in all parishes. Regional workshops will be undertaken and demonstration sites will be undertaken in different parishes to maximize the number of beneficiaries.

2.4.1 Impacts of SITE Activities

In those areas of pilot project activities, the Project is expected to have direct positive effects on community members, particularly the poor and disadvantaged. Criteria for selection of pilot project sites include that they provide tangible benefits to the poor and disadvantaged. For example, a proposed

pilot project site in urban Montego Bay for wastewater management would focus specifically on poor urban squatters, and concentrate on improving environmental health conditions for these people.

2.4.2 Impacts of NGO and Community Association Strengthening

The DEMO project should attempt to strengthen the capacity of community associations to promote and undertake environmental management practices more effectively through workshops, technical assistance and commodity procurement. There are numerous local level community associations in Jamaica such as local Church groups and fishermen's cooperatives. DEMO will endeavor to work closely with these grassroots associations and help them develop their environmental management capabilities. Social analysis prior to undertaking pilot project site activities will need to ensure that grassroots organizations and community participation is targeted in project activities.

2.4.3 Impact of Regulatory Policies

The DEMO project runs the risk of having short-term negative effects on certain segments of the population by the introduction of environmental regulatory policies and policing mechanisms. These policies may be felt most strongly by the poor whose only source of income may be cut off. For example, enforcement of regulatory policies on uses of coastal resources may negatively affect fishermen's earning potential. DEMO anticipates that by strengthening NGOs and Community Associations at the same time, it will help local communities identify and develop alternative income generating activities. It also anticipates that the short-term negative effects will be offset by the long-term benefits.

DEMO will also need to take active steps to ensure that development of a regulatory framework does not have a disproportionate impact on the poor. Social assessment in pilot project site areas will provide a means of testing the impact of regulatory policies, identifying potentially negative effects and recommending alternative income generating opportunities.

2.4.4 Impacts of DEMO Educational Activities

Clearly, with a subject so large no single project can do more than address some of the more critical problems. But DEMO Project efforts can have an impact well beyond its modest size. Strengthening educational institutions has a multiplier effect since through training, they in turn strengthen client organizations. Furthermore, the effects should continue long after the DEMO Project has run its course. Building stronger

environmental organizations will make investment in environmental concerns attractive to other donors. Finally, a.. aware, concerned population will support national and local programs, and act as an essential public conscience in rational use and care of the Jamaican environment.

But perhaps the ultimate test of DEMO effectiveness will be its impact on the population. As is true elsewhere, environmental education and public awareness activities often are initiated by better-educated, higher income groups. Yet, often the problems originate in the lowest economic strata - among the poor farmers, fishers, charcoal makers - those who have extremely limited access to environmental resources and therefore must use them intensively, even overuse them in order to produce a meager living.

2.4.5 Diffusion of Benefits

DEMO anticipates that institutional strengthening will lead to diffusion of environmental concerns throughout the Jamaican population. Education and training has effective multiplier effects since those who directly participate in DEMO project supported activities will pass the benefits along in subsequent educational training programs.

Pilot project site activities will also lead to diffusion of information by allowing Jamaicans to participate in activities that directly benefit them. DEMO will need to undertake active steps to ensure that positive lessons are disseminated widely.

The DEMO project must be certain to target poor and grassroots groups and not just benefit those NGOs and community groups who are well organized, have financial and technical resources and expatriate assistance. As a precondition of initiating pilot project site activities, DEMO will assess the degree to which grassroots organizations are involved or could be involved in project activities.

2.5 Project Activities

In response to key social issues identified in the JES, the DEMO project will include two sets of activities that specifically address social and behavioral constraints (1) developing opportunities for greater environmental awareness and education to the Jamaican population at large; and (2) analysis of key areas of social issues in pilot project site areas. The first activity will result primarily from efforts to strengthen NGO groups and assist in their development of practical project designs. DEMO will also incorporate a concern for gender in on-going Project activities throughout the life of the project.

2.5.1 Environmental Awareness and Education

The DEMO Project recognizes the critical nature of environmental education and public awareness, and the important role these activities play in promoting more effective programs. The Project proposes support on three fronts: (1) in-country training in environmental management skills at the technical/professional level, (2) environmental education on a geographic area-specific basis at the primary and secondary levels through teacher training and development of teaching materials, and (3) informal educational programs to heighten public awareness of environmental problems and issues. Formal and informal educational activities will occur within the SITE pilot projects and eventually in the national park expansion components. Implementation of these activities will be through public and private sector agencies.

To accomplish these objectives, the Project proposes to support government and non-government organizations involved in increasing public environmental information and awareness. These approaches will include:

(1) To increase awareness levels of environmental processes and conditions, and encourage individual and group action to protect and enhance the environment, the DEMO Project proposes to assist environmental management organizations in developing eco-awareness programs, events and contests such as anti-litter campaigns, tree planting programs, and essay contests through the NGO organizational development component. The intent here is to convey useful information on environmental issues, and also offer activities that allow individuals and groups to participate directly in environmental management. The DEMO Project can assist the development of these educational activities through efforts to help NGOs develop practical project proposals.

(2) To enhance environmental education in the schools, the SITE component of the Project would support workshops for upgrading teachers' understanding of environmental concepts, and issues of major concern to Jamaica.

(3) There already exist documentation and data centers to support environmental teaching and research. To enhance the capability of these centers DEMO proposes to help in acquiring materials on environmental education. Materials will include printed, film, video, and electronic materials.

2.5.2 Social Assessments

In implementing the DEMO project, the PMU will need critical input into the socioeconomic dimensions of project activities,

including attention to gender, at certain stages. This input will be provided by technical assistance (TA) in the following:

(1) Implementation of SITE Activities: In designing SITE interventions, TA will be needed to guide baseline data collection, identify critical socioeconomic constraints, community use of natural resources, potential conflicts and target groups. Information on community use of natural resources will be important for developing training materials and environmental education activities that take account of community needs and practices.

(2) Development of possible national park expansion activities: Technical assistance in examining the impact on people living in and around park areas should be provided as part of developing proposed national park expansion plans and in guiding the direction of the project. This information should also be used to guide further training and environmental education programs and as baseline data from which to monitor the impacts of project activities on different segments of society, particularly women, youth and the poor.

Pre-implementation Checklist

Prior to initiating any pilot project site activities or activities associated with national park expansions, the social analysis should complete the following activities:

- * collect gender disaggregated baseline data on socioeconomic status of community members and resource use activities among different sectors of the population that have environmental consequences (for example, harvesting coral for sale to tourists, catching and marketing fish, production of charcoal, collection of fuelwood, etc);
- * identify the potential impact of mitigating measures on the population, with particular attention to the poor;
- * assess potential alternative income generating activities for community members;
- * identify potential negative effects of regulatory or policing policies on the population;
- * assess potential for real grassroots participation in activities;
- * identify NGOs and community groups for institutional strengthening, including those not formally organized but show potential for developing organizational capacity;
- * describe potential conflicts among different groups and means for mediation;

2.5.3 Incorporation of WID into DEMO

In order to target institutional strengthening, and develop training materials and curricula that ensure the participation of

men and women in SITE and national park expansion activities, DEMO will need to address roles and task differences of men and women. Key areas it will need to focus on include the following:

(1) DEMO will need to include government institutions focused on women's issues into inter-ministerial meetings on environmental issues coordinated by NRCA. For example, the Jamaica Bureau of Women's Affairs is beginning to get involved in environmental issues, particularly in the area of health and sanitation and is currently working with the PEPA project in the Portland Parish.

(2) DEMO will also need to identify women's community associations and NGOs which may merit strengthening for environmental activities. For example, the Bureau of Women's Affairs has Parish Advisory Committees (PACs) which are responsible for overseeing the socioeconomic situation of women in their respective parishes. A Kingston-based theater group, SISTRIN could be engaged to participate in environmental education outreach activities.

(3) DEMO will also want to ensure participation of women in its regional workshops.

(4) As part of training needs assessments, DEMO will need to assess how training can reach different segments of society, including men, women and children, what target groups are relevant and what kinds of training activities will be appropriate. Further, it will need to identify the most appropriate mechanisms (e.g., media campaigns, posters, etc) for conveying environmental education to different segments of the population.

(5) A critical area where DEMO will need to address gender considerations is in its institutional strengthening in pilot project site areas. In order to target training and technical assistance to NGOs and community associations, it will need to have a basic understanding of the local conditions and roles and responsibilities in enterprises that may negatively or positively affect the environment. Social analyses conducted prior to implementation of pilot project site activities will need to identify the potential impacts on women and men.

(6) DEMO will ensure that efforts to collect data on the environment include socioeconomic variables disaggregated by gender.

(7) DEMO will need to ensure that gender concerns are fully incorporated into planning national park expansion activities. This would include technical assistance in designing the plan and such activities as ensuring that both women and men are represented in park management committees.

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ANNEX G: ECONOMIC ANALYSIS

1.0 BACKGROUND

The purpose of the Development of Environmental Management Organizations (DEMO) project is to increase environmental management capacity in Jamaica to solve critical environmental problems pertaining to the degradation of coastal zone areas, the degradation of wildlife habitats, watershed degradation, water pollution, and air pollution. DEMO will assist the GOJ in protecting its natural resource base and achieving sustainable economic growth, both of which are key goals of the USAID Mission.

The DEMO project can be characterized as an "institution building project" in that the project strategy is to strengthen institutions in order to increase in-country management capabilities. Project activities, or inputs, include training, technical assistance, as well as the purchase of U.S. commodities and local goods and services which are expected to result in the following outputs:

- Strengthened environmental NGOs
- Strengthened public sector organizations
- Successfully-completed site-specific demonstration projects
- Expanded national park system

The success of the project requires the completion of several non-project activities and actions. For example, it is expected that the GOJ will provide adequate financial support and political commitment to the NRCA. Moreover, the private sector is expected to take a more active role in funding conservation efforts. Finally, other donors must undertake additional projects and programs complementary to the Project.

An increased environmental management capacity--the project purpose --will translate into discrete measurable impacts that in turn reflect changes in conditions or behavior. The Project impacts constitute the benefits of undertaking the project. When compared with project costs, the benefits provide the economic and financial justification of the project. DEMO is designed to achieve the following major benefits or impacts:

- Increased expenditures on environmental management by public agencies, environmental NGOs and business.
- Establishment of environmental information database.
- 25 percent increase in public awareness of environmental issues and concerns.

- Improved environmental quality in selected areas.
- Establishment of national environmental standards and regulations.
- Establishment of an environmental impact analysis process as an integral component of all project designs.

These impacts contribute to the overall Project goal of protecting the environment and achieving sustainable economic growth. The aim of the analysis conducted here is to understand and analyze the economic and financial rationale for the project, including project benefits, impacts, and cost-effectiveness. Background on the Jamaican economy is first presented in the context of its relationship to the environment.

2.0 THE JAMAICAN ECONOMY AND THE ENVIRONMENT

Jamaica is endowed with significant natural resources--substantial mineral reserves, adequate rainfall, and fertile soils--which provide the basis for its export-led economy. There are three primary economic sectors, agriculture, mining, and tourism, which together account for approximately 20 percent of GDP⁽¹⁾. Historically, the economy was based on sugar and banana production for export. In the 1940s, the mining industry became significant with the discovery and exploitation of bauxite reserves.

By the 1960s and 1970s Jamaica had become a leading world supplier of bauxite and alumina as foreign mining companies invested in mining and processing facilities. Bauxite/alumina exports generated substantial amounts of foreign exchange earnings which were used for development of manufacturing, tourism, and social infrastructure. However, in the mid-1970s fluctuating oil prices, and a major shift in world alumina markets brought on by oil price increases and a boost in recycling, significantly impacted Jamaica's economy. The industry entered a slump as world demand for bauxite/alumina weakened. Recovery of the industry only began in the mid-1980s and bauxite/alumina export earnings grew from \$245 million dollars in 1985 to \$728 million in 1990, accounting for about 50 percent of total foreign exchange earnings.

There are a number of major environmental concerns (i.e.,

¹ In 1990, the percentage contribution to GDP was 7.8 percent for the agriculture, forestry and fishing sector; 7.5 percent for the mining sector; and 6.2 percent for "miscellaneous services", the sector under which the hotels and restaurants sub-sector is classified.

pollution, destruction and scarring of lands and forests, and dislocation of communities) related to the mining of bauxite and the processing of alumina, the most important of which is the disposal of red mud (alkaline bauxite residual slurry) which is a by-product of the bauxite-to-alumina refining process. For every metric ton of alumina produced, approximately one ton of red mud is produced, and disposal of this mud is a major undertaking. In addition to taking arable land out of production, red mud disposal can potentially result in groundwater contamination.

About the time that the mining industry entered a period of stagnation in the 1970s, the tourist sector began to grow rapidly, and is now as important as bauxite/alumina as a source of foreign exchange. Tourism generated \$699 million in foreign exchange in 1990, up from \$229 million in 1980. Tourism provides employment for over 20,000 people, a significant increase from the level of 9,527 in 1980. Private investment in tourism continues to grow and the GOJ is planning five major tourism infrastructure projects in support of the industry, with co-financing from Japan and the U.S.

Major components of the tourism infrastructure project include:

- Montego Bay sewerage system improvement project
- Lucea-Negril water supply system expansion project
- Northern coastal highway improvement project
- Montego Bay drainage and flood control project
- The Ocho Rios cruise ship project

However, overall investment in environmental management has been weak and negative impacts on coastal ecosystems pose a long-term threat to the industry. The quality of bathing waters and the destruction of coral reefs are two major problems. Tourism is an important component of Jamaica's economic development -- the 5-year plan has set a goal of 1.7 million tourists by 1995 -- but it is a sector that is also extremely sensitive to environmental quality.

Agriculture is the third largest foreign exchange earner, but remains the largest employer of labor, accounting for about 25 percent of total employment. Agriculture's share of total employment is declining (it was over 40 percent in the 1940s), mostly due to increased urbanization and a shifting of the economy toward services-producing sectors. The most important agricultural exports are still sugar and bananas, which in 1990 accounted for about 75 percent of total agricultural exports of \$161 million. Other major agricultural export products include coffee, pimento, citrus, cocoa, and yellow yams, in order of importance. The climate and the land in Jamaica are well-suited for the production of a wide variety of crops. Due to the prevalence of hillside cultivation on steep slopes, soil erosion

is a major problem and with important implications for long-term sustainability of agricultural production.

3.0 METHODOLOGY AND DATA LIMITATIONS

The DEMO project is an institution building project which cannot be analyzed using conventional cost-benefit approaches since the benefits generated by the project are not easily quantifiable. The achievement of the purpose of the project--to increase environmental management capacity--can be judged by measuring changes in certain indicators. The direct, proportionate contribution of the Project to the public good (as measured by rates of expenditures or other performance indicators) cannot be quantified into a benefit stream since it is difficult to separate out all the causal factors. The increase in environmental management capacity attributable directly to the project, which would not occur if the project was not undertaken, cannot be easily measured. By analyzing the no action scenario (i.e., status of environmental management in Jamaica without the DEMO project), and comparing it with the expected impacts of the project, a qualitative assessment of the success the DEMO project can be made.

The GOJ investment in environmental management consists of many different activities (waste management, forestry management, water supply, etc.); however, the NRCA budget can be taken as a proxy measure for assessing the GOJ commitment to environmental management. At present, the GOJ is spending approximately US\$400,000 ⁽²⁾ per year on natural resource conservation through its funding of NRCA, out of a total GOJ budget of about \$2.0 billion US dollars. This represents 1/50th of 1 percent of total GOJ expenditures. In comparison, the U.S. spends about 0.4 percent of the U.S. budget on the Environmental Protection Agency, or 20 times the percentage spent by the GOJ on the NRCA. Apart from the funding of NRCA, there is very little information available to measure the level of activity in environmental management in Jamaica, either in terms of government expenditures or numbers of actions taken (e.g., environmental assessments completed). As a result, there are no benchmarks against which success in environmental management can be measured ⁽³⁾. One of

² The NRCA budget for fiscal year 1991-92 is J\$3.2 million, or \$400,000 US dollars based on the exchange rate in force at the beginning of the fiscal year, April 2, 1991.

³ When the diverse activities of all government agencies are considered (e.g. soil conservation, river protection, and planting cedar forests), GOJ government spending on environmental management

the important tasks of the DEMO project will be to undertake a baseline study of environmental management activities and public awareness of environmental issues and problems in Jamaica.

Environmental protection is crucial to the long-term sustainability of certain sectors of the economy, especially those areas that are environmentally sensitive like tourism. The long-term benefits of investment in environmental protection accruing to the tourism industry may justify substantial allocation of resources to mitigative measures, especially considering the relative contribution of tourism to the Jamaican economy. The GOJ five-year plan assumes 6% growth for the tourist industry but without reference to costs of environmental protection, increased demand for infrastructure and public service, and added social stress caused by the influx of foreign tourists. The five-year plan projects foreign exchange earnings from tourism to grow from \$677 million US dollars in 1990/91 to \$974 million US dollars in 1994/95.

No analysis of the costs and benefits of mitigative measures has been undertaken either for the tourism sector or for other important sectors such as agriculture and mining. Because the Project will not generate a benefit stream, an internal rate of return cannot be calculated. However, a "with" and "without" analysis can be made that uses low-medium-high case scenarios to demonstrate the impacts of improved environmental management. This analysis makes assumptions on the effects and costs of "no action" to the economy under a set of different scenarios. Section 2.0 describes the project benefits that are to accrue as a result of undertaking the project and Section 3.0 discusses project cost-effectiveness. Section 4.0 gives the financial plan for the project, indicating how the project budget is to be allocated among different components, and discusses recurrent costs and long-term financial sustainability.

4.0 PROJECT BENEFITS

The purpose of the DEMO project--improved environmental management capacity--will help to preserve the long-term sustainability of existing economic activities (mining, tourism, and agriculture). Since the depletion and/or degradation of existing natural resources threatens long-term economic growth, environmental protection and conservation actions that help to minimize deterioration in environmental quality are in fact beneficial to the economy. The success or failure of this

is estimated to vary between .1 and .2 percent of total government spending, according to a rough calculation by an analyst at PIOJ.

project in terms of helping to solve environmental problems depends on the extent to which environmental NGO's and public sector organizations can improve their management capacity. The anticipated impacts of project success include increased expenditures on environmental management, better environmental information, increased public awareness of environmental issues and concerns, and improved environmental quality conditions.

The overall economic benefit of these impacts consists of the value of protecting and conserving natural resources, which in turn can be measured by the economic viability of specific economic sectors that are affected by environmental degradation. A viable tourist industry, for example, requires the maintenance and preservation of the natural beauty of the coastal areas and the countryside. Therefore, increased expenditures on environmental management in areas where the tourist industry is concentrated will benefit the economy as a whole. Without adequate environmental management, tourists might begin to avoid Jamaica and economic losses would be substantial.

4.1 Increased expenditures on environmental management

DEMO will contribute to an increase in the level of resources dedicated to environmental and natural resource management programs. The demand for environmental services is expected to increase enormously as a result of legislation presently being enacted or being considered. The ability of NGOs and public sector institutions to deliver these services is crucial if compliance with regulations is to be achieved and environmental protection successful enforced. Therefore, one way success of the Project can be measured is the degree to which expenditures on environmental management have increased.

Since existing information on resources allocated to environmental management is not complete, one of the initial tasks of the project should be an in-depth survey of what the public sector, NGOs, and private sector firms are spending on environmental management. Public sector expenditures on environmental management includes all environmentally-related management programs or activities carried by various GOJ institutions and agencies. Total NGO expenditures would be represented by the annual budgets of environmental NGOs and this kind of information can be provided by NEST--the island-wide NGO umbrella group. Private sector expenditures on environmental management include both direct actions taken by firms to mitigate negative impacts related to the firms' activities and environmental projects undertaken by the firm as charitable actions for the public good. Contributions to environmental NGOs should be noted but care taken to not double count in determining NGO expenditures.

4.2 Improved environmental database

The DEMO project will result in the development of a comprehensive data base on basic ecological parameters that would include indices of water and air quality, surveys of biotic communities, population estimates of key indicator species, and an inventory and mapping of waste disposal sites. DEMO will result in the establishment of an environmental database that provides access to technical, scientific and socio-economic information and data. Improved collection and access to environmental data and information will help to:

- guide environmental planning and decision making and contribute to effective environmental protection.
- develop baseline data and information to help assess environmental impacts of public and private projects.
- allow for targeted environmental interventions (appropriate curricula for public awareness activities).
- provide a basis for economic valuations of Jamaica's natural resources and allow for economic justifications of projects that consider environment costs and benefits.
- help community groups and appropriate NGOs assess socio-economic impacts of mitigating measures.

4.3 Increased public awareness of environmental issues

The increased public awareness of the implications of individual actions on ecological conditions (and of economically and technically viable alternatives) will have a positive impact on the response of individuals in terms of changing their behavior and perceptions toward the management of natural resources. At a micro-level, people will be more responsible in terms of removal of tree cover, improper disposal of liquid and solid wastes, and gain an appreciation of the long-term importance of adopting environmentally-sound practices. At the macro-level, social consensus on the protection of the environment will result in increased support for environmental management and protection activities undertaken by both public agencies and NGOs.

The USAID Jamaica Environmental Strategy (JES) noted that less than 20 percent ⁽⁴⁾ of Jamaicans understand the relationship of environmental issues to either human health concerns or to the overall socio-economic context. DEMO will increase public awareness to over 600,000, or about 25 percent of the population. That is, about 125,000 more people will understand environmental issues than would have occurred without the project.

⁴ This is somewhere between 400,000 and 500,000 people out of a total population that stands at about 2.4 million.

In order to measure success of public awareness activities, a initial survey will be conducted at the beginning of the Project, public awareness indicators developed and monitored throughout the life of the project, and a final impact assessment conducted at the end of the project (5).

4.4 Increase in number of designated protected areas

The value of natural areas is difficult to assess because of the inherent difficulty of quantifying the positive impacts of biological diversity. An a priori assumption is advanced here: that the net returns to developing and managing protected areas are higher than the social costs of not doing so. There is uncertainty of the effects of not taking action which may cause irreversible damage and could even preclude the possibility of taking corrective measures due to technical infeasibility, cost considerations notwithstanding. For example, the clearing of land in Jamaica is causing species losses which weakens the resilience and reproductive capabilities of ecosystems and reduces the aesthetic and economic attributes of natural areas (6). Natural areas provide intrinsic benefits that allow for sustained economic development and human well-being. As pointed out in the JES:

Habitat loss threatens the stability of Jamaica's environmental processes. Ecosystems that are being altered in terms of species composition, genetic base, or physical structure may be less able to respond to local or regional demands for resource extraction or natural purification of wastes. Loss of microbial or invertebrate populations may slow or eliminate waste breakdown, and result in pollution threats to humans and further ecosystem degradation. Species losses can also result in declines in soil fertility, lack of pollination for domestic and wild plants of economic value, uncontrollable agricultural pest populations, and destabilized hydrologic regimes (7).

Therefore, the combined effect of successfully implementing the PARC component of DEMO and strengthening public sector institutions and NGOs will be the survival of many species of

⁵ The impact assessment should determine to the maximum extent possible the degree to which public awareness has increased as a direct result of multi-media publicity campaigns undertaken by the project.

⁶ JES, p. 50

⁷ JES, p. 32

flora and fauna that would have otherwise disappeared into extinction. In agriculture, species protection is important for adding vigor to existing crop strains, maintaining genetic diversity, and extend the range of crops in production.

5.0 PROJECT COST-EFFECTIVENESS

5.1 Demand/Need for environmental services

The demand for environmental services is a function of both the legal requirements and the implicit environmental standards set by the society as a whole. In Jamaica, the recent passing of the Natural Resources Conservation Act reflects the increasing concern and commitment on the part of the government with environmental management. This also parallels an overall world trend toward greater attention being given to the careful management of natural resources. The demand for environmental services increases as a result of public regulations that set requirements for the execution of environmental assessments or maximum acceptable levels of pollution. Firms and organizations must address potential environmental impacts of their projects or operations by complying with regulations. In-depth environmental studies and implementation of mitigating actions requires considerable expertise. Firms or organization typically must either rely on in-house capabilities or contract out to specialized providers of these services. Public agencies serve the role of overseer, ensuring that compliance with regulations is followed and when necessary enforcing such compliance.

5.2 Options for improving environmental management and the DEMO project as least-cost alternative

USAID/Jamaica's Environmental Strategy outlines the rationale and justification for responding to GOJ needs for assistance in the area of environmental protection. The Strategy emphasizes that institutional constraints--lack of a national environmental policy, limited technical capabilities, and limited environmental monitoring or enforcement capabilities--pose the greatest constraint to positive environmental action. The Strategy analyzes environmental degradation in Jamaica and identifies five priority issues (⁸). Having identified the problem areas, the Strategy specifies the principle causes of degradation and pollution as "the removal of tree cover from forest communities, and the improper disposal of liquid, solid, or gaseous wastes", but stipulates "overriding social and institutional problems" to be the underlying reason for persisting environmental problems in Jamaica. Given the importance of social and institutional

⁸ These are the degradation of coastal zone areas; wildlife habitats; watershed degradation; and water and air pollution.

constraints in reversing environmental degradation, what are the options available to USAID as a donor?

The specification of options can be done by asking a number of further questions:

Should the beneficiaries of institutional strengthening be grass-root organizations, public sector agencies, or local educational institutions?

What is the right mix of long and short-term technical assistance?

What kind of training is most appropriate for the immediate situation in Jamaica?

What kind of procurement of U.S. equipment and locally-purchased materials is necessary for the project to achieve its objectives?

In terms of the selection of beneficiaries, DEMO is designed to work with all three institutional structures. By working with NGOs, DEMO will help to develop local awareness and capacity in the areas of public awareness of environmental issues, protected areas conservation, and biodiversity. In order to correct the policy, legal, and regulatory weaknesses that constrain improved environmental management, DEMO will assist in strengthening public sector organizations, in particular NRCA. The Strategy emphasized the importance of assisting NRCA, which is envisioned to be the coordinating body for all environmental actions undertaken by the GOJ. Educational institutions will receive assistance in order to improve the level of local expertise in environmental planning and increase public awareness of environmental issues and concerns.

In the arguments developed below, alternative Project options are significantly more expensive than the current Project design. First, a technical assistance team consisting exclusively of experienced U.S. environmental specialists accessed through U.S. universities or consulting firms would cost 5 times the cost of a team staffed by Jamaicans. Higher costs for the project management unit team and short-term technical assistance would increase the cost of the project by 4 to 5 million dollars. These differences are gross estimates based on the average person-month costs of \$20,000 assumed for short-term U.S. technical assistance, compared with \$4,000 per month for Jamaican consultants. Long-term staff costs are assumed to be \$125,000-150,000 per year for U.S. personal service contractors compared with \$20,000-25,000 per year for Jamaican professional staff. While there may be greater short-term benefits if U.S. professionals are better qualified, the longer-term benefits of

developing local capacity and skills by transferring technology through use of U.S. short-term expertise fulfills much better the mission and purpose of DEMO and therefore favors the current project design.

U.S. procurement is mostly for vehicles, computer equipment, and laboratory equipment, the kinds of good not manufactured in Jamaica but which are crucial to the day-to-day project operations. The purchase of local goods and services is emphasized, especially for the demonstration SITE projects where DEMO is aiming to build community-based local NGO capacity to solve environmental problems. Both the GOJ and the NGOs are providing matching contributions will increase per unit effectiveness of AID funding and reinforce the overall goal of sustainability of project activities. GOJ and NGO participation are detailed in the cost summary and financial plan.

5.3 Economic effects of not taking action: "With" and "Without" analysis

As indicated earlier, a cost-benefit analysis is not appropriate for an "institution-building" type of project such as DEMO. However, it is instructive to show what the costs of no action might be on the tourism industry, in particular. In 1991, there was an estimated 1.3 million tourist arrivals. By taking the projected increase in tourist growth, 6 percent from 1990-1995, and extending that over a fifteen year period, the number of tourists coming to Jamaica will reach almost 3 million per year. However, this assumes that the carrying capacity will allow for such growth and, if so, that the tourist infrastructure necessary to accommodate this growth will be put into place. A more prudent estimate of the average annual tourist growth rate over the next 15 years is perhaps 3 percent per year, which would result in 1.9 million visits in 2005. Both the high growth and medium growth estimates assume that the GOJ is taking adequate measures to mitigate environmental impacts. If the GOJ does not take any actions the industry will not grow (and probably will decline) simply because Jamaica will not be an attractive place to visit.

The rough estimate of the economic costs of no action, assuming that the effects of environmental degradation are stagnation or decline of the tourist industry, can be calculated based on average visitor expenditures. In 1990, for example, tourist arrivals of 1.23 million were recorded, and expenditures were approximately \$US 740 million, or \$US 600 per arrival. Comparing the revenue effects of different growth scenarios using the figure of \$US 600 per arrival and \$US 400 per arrival provides some perspective on the economic costs of not protecting the environment.

The Effect of Different Tourist Growth Scenarios on Foreign Exchange Revenue Earned from 1991-2005.

	<u>\$US 400</u>	<u>\$ US 600</u>
	--Billion US \$--	
High Growth (6%)	11.5	17.4
Medium Growth (3%)	9.2	13.7
Decline (3%)	5.8	8.8

5.4 Potential savings of conservation efforts (compared with clean-up costs)

The cost of re-generating a productive natural resource base or, if possible, re-creating natural environments is significantly greater than the expense of preventing the losses in the first place. Environmental protection is much less costly than rehabilitation or restoration as corrective measures are technically complex and tend to require high-cost, labor intensive remedial activities. Depending on the natural environment, adopting environmentally-sound practices can reduce the capital costs of economic development in the future. Jamaica can benefit from conservation and environmental protection actions, as reforestation and costly clean-ups of land and water can be avoided. As a result, the productive value of the natural resource base will be maintained as industries such as tourism and agriculture will continue to provide income and employment opportunities. While the GOJ has not yet conducted any in-depth analysis of the monetary benefits of conservation and environmental protection actions, the PIOJ has developed a proposal to study environmental management costs and benefits for the agricultural sector.

5.5 Recurrent Cost Analysis

Since most of the GOJ and NGO professional staff working on DEMO activities are full-time employees who would be hired with or without the DEMO project, recurrent costs for salaries are not significant. However, the recurrent costs of replacing vehicles and computer equipment, which are essential to certain on-going activities that will and should continue after the DEMO project, represent a moderate burden on the GOJ given limited government budgetary support. These recurrent costs will have to be covered by user fees or other cost recovery mechanisms. These are discussed below.

The potential of additional environmental funding through new tax or fee mechanisms is also possible. Environmental assessment fees can be imposed by NRCA. Present legislative authority would also

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allow for the implementation of a voluntary or mandatory "user fee" charged to visiting tourists, with funds directly set aside for environmental management purposes. The cost of financing environmental mitigations or restructuring within the private sector will be high, and it may be difficult for private businesses to demonstrate the potential returns to investors. It may be necessary for incentives of policy mandates to be enacted in order to stimulate this investment from the private sector.

The growing financial burden of needed urban infrastructure and environmental protection investments is occurring during a period of economic difficulty for Jamaica. Given a central government strapped for resources to meet debt obligations and limits to international assistance, there appears to be no long term alternative to locally-generated revenues. In most of Jamaica's urban centers, dramatic improvements in the collection of taxes and user fees are possible. In a report prepared for USAID, Trevor Hamilton & Associates point out that the Parish Councils forego over 90% of the revenue potential from the services they provide. The rates for user fees and other revenue sources have been locked in place for many decades (in some cases, since the 1940s) and adjustments to the rates have required a long legislative process. In recent months, the Ministry of Local Government has established a special task force to reform user fee rate structures and implement other actions recommended in the Trevor Hamilton report.

Property taxation is a potentially very significant revenue source that is not tapped anywhere near its potential. In many parts of the world it is the key revenue source for financing urban services; in Jamaica, it contributes little. A report for USAID by John Pickard indicates that at the first property valuation completed in 1974, property taxes contributed a relatively small 5% of total GOJ revenues. A revaluation completed in 1990 (but not yet applied) indicates that property taxes dropped even lower to raising only 1.4% of total revenues. Furthermore, it is also estimated that total arrears in collection may amount to 250% of annual assessments.

While the property tax and urban service user fees represent significant opportunities for new financial resources, a key to expanding these revenue sources is to strengthen the authority of the Parish Councils to raise revenues and allocate expenditures. At present, literally all revenues collected at the local level are transferred to central government before some portion is returned under a predetermined formula for revenue sharing. This leaves absolutely no incentive to increase collections and expand local revenue. The GOJ might be encouraged to reduce some limits placed on Parish Councils' revenue-raising powers--at least on a pilot basis--in exchange for demonstrated improvements in service delivery, financial management, etc. This could accomplish a great

deal toward stimulating entrepreneurial initiative and improving performance at the local government level.

Not all urban infrastructure and environmental management services need be delivered by government nor be paid for through taxes. Many services, including on-site infrastructure, land development, environmental planning, environmental information and education, solid waste collection and disposal, waste recycling, and others, lend themselves to full or partial private or NGO management. In many communities, such as Montego Bay, Negril and Portland, there are capable private and NGO managers; in others, they will need to be nourished.

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ANNEX H: GENERAL TRAINING APPROACH: NRCA and NEST

The DEMO project will enable two organizations, NRCA and NEST, to overcome the historical bias of earlier work on the environment which usually involved people working from a narrow focus, with subsequent fragmentation of efforts. Both NRCA and NEST can enable Jamaica to mobilize and deploy resources more effectively for environmental management by allowing the public and private sectors to join forces, using domestic and international resources, to achieve common goals. In this manner, interdependence and cooperation can become a major asset to facilitate environmentally sustainable economic development.

While the two organizations will face different requirements for technical training, the DEMO project offers a special opportunity to train staff together, allowing them to develop the professional ties and mutual respect. Their teamwork can forge a supportive network of people interested in environmental issues and willing to commit their time to making a difference. At the same time, the SITE activities afford a practical opportunity for cooperation between NRCA and the private sector, working through NGOs.

NRCA

Provide organizational development services to strengthen NRCA in the following areas:

- Program direction
- Human resource development
- Financial management and physical plant

Support an outreach function that:

- Promotes cooperation between the private sector and government, as well as within government
- Involves the private sector in the decision making and implementation process
- Facilitates informed choices and self-governing compliance

Develop information systems that:

- Build links between existing data
- Encourage government agencies to participate in providing better environmental data
- Enable the GOJ and individuals to understand the tradeoffs involved in environmental policy and how personal initiative can make a difference
- Establish sound financial bases for project design and management
- Serve as the basis for compliance

Develop a participatory framework for policy development and regulatory initiatives that foster sustainable economic development.

NEST

Provide organizational development services to strengthen NEST in the following areas:

- Program direction
- Human resource development
- Financial management and physical plant

Support an outreach function that:

- Promotes cooperation among NGOs, as well as between the private sector and government
- Allows NGOs to serve as a vehicle for involving the private sector in the decision making and implementation process
- Facilitates informed choices and self-governing compliance

Develop information systems that:

- Allow NGOs to share lessons learned
- Encourage NGOs to participate in providing better environmental data
- Enable individuals and communities to understand the tradeoffs involved in environmental policy and how personal initiative can make a difference
- Establish sound financial bases for project design and management
- Serve as the basis for compliance

Develop a participatory framework that provides technical advisory services, organizational development and management skills training to NGOs.

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- Purposes for priority areas
- End products and known deliverables
- Verifiable success criteria
- Both internal and external resources
- Steps to implement
- Responsible persons
- Schedule

Action plan will reflect:

- Modern team building techniques
- Introduction of a systematic approach to cooperation
- Information sharing on statutory mandate, "clients," "competitors," strategic allies, resources and constraints (present and future)
- Developing a common vision of the future organization (purposes, end products, staffing, structure)

Management of coastal zones, wetlands, waste and habitat/parks, information systems, water quality monitoring, baseline environmental profiles, environmental impact assessment, economic analysis, financial project evaluation, tradeoff analysis, quantification of costs and benefits related to the environment, natural resource accounting systems, geographic information systems (GIS)

Technical

Action planning, teamwork skills, meeting facilitation and logistics, brainstorming, negotiations, presentation techniques, financial management and budgeting, organizational development, human resource management, management information systems (MIS)

Related Training

Steps

NRCA Board and key players, including appropriate donors, to set aside time to focus on developing a clear vision of NRCA's future

Write scope of work and identify consultancy with expertise to facilitate task, obtain resources to implement

Workshop should involve involving a maximum of 24 people, and 3-4 professional facilitators, at least one of whom would be Jamaican. Short-term technical assistance could bring state-of-the-art team planning technology, working with Jamaican counterparts, including a consultant from organizational staffing assignment. Elements of the workshop include

Gaps

Mission statement and priority guidelines, development of action plan

Purpose Give direction to NRCA that will drive program as well as operational strategy. This statement will serve to sell the program outside and motivate the staff from within. Priority areas, goals and objectives will set the parameters for the organizational structure

Element

Program direction

NRCA Operational Strategy

Element	Gaps	Steps	Related Training
<p>Human Resource Development</p>	<p>Plan for retention of NRCD staff</p> <p>Purpose Retain best elements and build on existing knowledge while streamlining organization and selecting needed skills</p>	<p>Determine approximate size of desirable organization as well as phasing</p> <p>Write scope of work and identify firm with expertise to facilitate task, obtain resources to implement</p> <p>Assignment includes:</p> <ul style="list-style-type: none"> • Criteria development • Skills assessment • Job descriptions and • Phasing 	<p>Management</p> <p>As above, especially human resource management, organizational development, establishing objective criteria for evaluation</p> <p>Technical</p> <p>As above, primarily in developing job descriptions and evaluating candidates</p>
	<p>Plan for recruiting</p> <p>Purpose Identify long term NRCA team, based on program strategy and skills required, in light of budgetary resources</p>	<p>Builds on gaps identified in NRCD retention plan</p> <p>Assignment includes:</p> <ul style="list-style-type: none"> • Job descriptions and • Skills required • Phasing 	<p>Management</p> <p>As above, especially human resource management, organizational development, establishing objective criteria for evaluation</p> <p>Technical</p> <p>As above, primarily in developing job descriptions and evaluating candidates</p>
	<p>Network development/outreach plan</p> <p>Purpose Mobilize and deploy resources more effectively for environmental management. Build community support, as well as identifying Government of Jamaica and international assistance for national and local programs</p>	<p>Utilizing consensus building techniques, involve constituents and potential partners in action planning for the environment. With computerized data bases, provide systematic coordination and follow through, enabling different groups to practice cooperation by supporting each other with their strengths and skills</p>	<p>Management</p> <p>As above, especially teamwork skills, consensus building, meeting facilitation and logistics, MIS, organizational development, computerized mailings, presentation skills (view graphs, charting)</p> <p>Technical</p> <p>As above, recognizing need to involve volunteers in the private sector and other government resources in the public sector, on technical issues evaluating candidates</p>

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NRCA Operational Strategy

Element	Gaps	Steps	Related Training
<p>Human Resource Development (continued)</p>	<p>Consulting/contracting plan</p> <p>Purpose Identify those skills best obtained through outside sources, either local or expatriate, over immediate, medium or long term</p>	<p>Function of program strategy, but builds on input from organizations willing to finance technical assistance (USAID, others)</p> <p>Assignment includes:</p> <ul style="list-style-type: none"> • Criteria development to determine which tasks can be best handled outside • Procurement planning • Production of scopes of work, evaluation criteria • Need for full and open competition and • Phasing <p>NRCA needs to begin now developing estimates based on all anticipated sources of funds so a plan can be produced in the next six months, possibly by a consultant</p>	<p>Management</p> <p>As above, especially action planning, financial management and budgeting, MIS</p> <p>Technical</p> <p>As above. Primarily in developing scopes of work and evaluating consultants/firms</p>
<p>Training plan</p> <p>Purpose Build on existing skills and eliminate gaps. May also be used to train strategic allies or members of the "external team," strengthening a network while building a constituency for environmental management. Training may also be used to encourage non regulatory approaches to compliance issues.</p>	<p>Function of program strategy, but builds on input from organizations willing to finance training (USAID, others)</p> <p>Assignment includes:</p> <ul style="list-style-type: none"> • Link to action plans • Phasing • Criteria development for candidates • In-country short-term and degree programs, as well as overseas training • Management as well as technical training • Use of rotations, secondments or outside technical assistance to avoid gutting NRCA while training occurs <p>NRCA needs to begin training plan as soon as program direction is set and action plans are developed. Build on USAID work in interim. PMU should complete two months after PMU start up (in next 9 months)</p>	<p>Management</p> <p>As above, financial management and budgeting, action planning, human resource management, MIS</p> <p>Technical</p> <p>As above, primarily in developing training programs and evaluating candidates or proposed trainers</p>	

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NRCA Operational Strategy

Element

Gaps

Steps

Related Training

Financial Management and Physical Plant

Financial Plan

Purpose To ensure accountability of funds as well as long run sustainability of NRCA

Develop procedures for strong financial management systems within NRCA, as well as within its "external team" (NGOs, involved private and public organizations)

As above, with particular emphasis on financial management and accounting, linked with computer systems to project budget and track expenditures, action planning, internal controls and procedures

Technical

As above, primarily in developing scopes for future projects and in making budget choices between program areas

Management

As above, with particular emphasis on human resource management for internal ability to determine system needs, inventory control as well as internal controls, manuals and procedures. Ensure proprietary software is handled ethically

Technical

As above, primarily in developing internal ability to write specifications or scopes of work to select equipment or space, tradeoff analysis

Equipment Plan

Equipment Plan

Purpose Allow NRCA to be a compact, efficient organization, utilizing modern equipment for greater productivity

Inventory existing equipment and begin identifying possible needs (computer, vehicle, back-up generators, audio-visual, etc.) Write scope of work and identify consultant with expertise to facilitate task, particularly with regard to computers, obtain resources to implement

Assignment includes:

- Hardware
- Software
- Training for staff
- Decisions on network
- Number of employees per terminal
- Phasing

ensure appropriate level of equipment for short run, while moving toward more elaborate applications of GIS or networking national data bases.

Contingent upon program strategy, vision of new organization, NRCA can begin identifying options and comparing costs as well as other considerations

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Office space and location

Purpose Obtain for NRCA the appropriate amount of space as well as a desirable location reflecting its new image

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NEST Operational Strategy

Element

Mission statement and priority guidelines, development of action plan

Purpose Give direction to NEST that will drive operational strategy. This statement will serve to sell the program outside and motivate the staff from within. Priority areas, reflecting interests of the member NGOs, goals and objectives will set the parameters for the organizational structure

Gaps

Key players drawn from NEST Board, member NGOs, the private sector and appropriate donors, to set aside time to focus on developing a clear vision of NEST's future

Write scope of work and identify consultancy with expertise to facilitate task, obtain resources to implement

Steps

Management

Action planning, teamwork skills, meeting facilitation and logistics, brainstorming, negotiations, presentation techniques, financial in writing, consensus building, organizational management and budgeting, organizational development, human resource management, management information systems (MIS)

Technical

Obtaining and utilizing information on management of coastal zones, watersheds, waste and habitat/parks, information systems, water quality monitoring, baseline environmental profiles, environmental impact assessment, economic analysis, financial project evaluation, tradeoff analysis, quantification of costs and benefits related to the environment, natural resource accounting systems, geographic information systems (GIS)

Related Training

Modern team building techniques

Introduction of a systematic approach to cooperation

Information sharing on mandate, "clients," "competitors" (other organizations providing similar services), strategic allies, resources and constraints (present and future) and developing a common vision of the future organization (purposes, end products, staffing, structure)

Action plan will reflect:

- Purposes for priority areas
- End products and known deliverables
- Verifiable success criteria
- Both internal and external resources, funding sources and sources of mutual support
- Steps to implement
- Responsible persons
- Schedule

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NEST Operational Strategy

Element	Gaps	Steps	Related Training
<p>Human Resource Development</p>	<p>Plan for recruiting</p> <p>Purpose Identify long term NEST team, based on program strategy and skills required, in light of budgetary resources</p>	<p>Builds on gaps identified in action planning workshop</p> <p>Assignment includes:</p> <ul style="list-style-type: none"> • Job descriptions and • Skills required • Phasing 	<p>Management</p> <p>As above, especially human resource management, organizational development, establishing objective criteria for evaluation</p> <p>Technical</p> <p>As above, primarily in developing job descriptions and evaluating candidates</p>
<p>Network development/outreach plan</p> <p>Purpose Mobilize and deploy resources more effectively for environmental management. Identify areas of mutual support. Build community commitment, as well as identifying Government of Jamaica and international assistance for national and local programs</p>	<p>Utilizing consensus building techniques, involve constituents and potential partners in action planning for the environment. With computerized data bases, provide systematic coordination and follow through, enabling different NGOs to practice cooperation by supporting each other with their strengths and skills</p>	<p>Management</p> <p>As above, especially teamwork skills, consensus building, meeting facilitation and logistics, MIS, organizational development, computerized mailings, presentation skills (view graphs, charting)</p> <p>Technical</p> <p>As above, recognizing need to involve volunteers in the private sector and other government resources in the public sector, on technical issues evaluating candidates</p>	

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NEST Operational Strategy

Element	Gaps	Steps	Related Training
<p>Human Resource Development (continued)</p>	<p>Consulting/contracting plan</p> <p>Purpose Identify those skills best obtained through outside sources, either local or expatriate, over immediate, medium or long term</p>	<p>Function of program strategy, but builds on input from organizations willing to finance technical assistance (USAID, others)</p> <p>Assignment includes:</p> <ul style="list-style-type: none"> • Criteria development to determine which tasks can be best handled outside • Production of scopes of work, evaluation criteria • Need for full and open competition and Phasing <p>NEST needs to begin now developing estimates based on all anticipated sources of funds so a technical assistance plan can be produced in the next six months, possibly by a consultant</p>	<p>Management</p> <p>As above, especially action planning, financial management and budgeting, MIS</p> <p>Technical</p> <p>As above. Primarily in developing scopes of work and evaluating consultants/firms</p>
<p>Training plan</p> <p>Purpose Build on existing skills and eliminate gaps. May also be used to train strategic allies or members of the "external team," strengthening a network while building a constituency for environmental management. Training may also be used to facilitate the involvement of NGOs in non regulatory approaches to compliance issues.</p>	<p>Function of program strategy, but builds on input from organizations willing to finance training (USAID, others)</p> <p>Assignment includes:</p> <ul style="list-style-type: none"> • Link to action plans • Phasing • Criteria development for candidates • In-country short-term and degree programs, as well as overseas training • Management as well as technical training • Identification ways avoid gutting small organizations like NEST and member NGOs while training occurs <p>NEST needs to begin training plan for itself and its NGO members as soon as program direction is set and action plans are developed. Build on USAID work in interim. PMU should complete two months after PMU start up (in next 9 months)</p>	<p>Management</p> <p>As above, financial management and budgeting, action planning, human resource management, MIS</p> <p>Technical</p> <p>As above, primarily in developing training programs and evaluating candidates or proposed trainers</p>	

NEST Operational Strategy

Element	Gaps	Steps	Related Training
Financial Management and Physical Plant	Financial Plan Purpose To ensure accountability of funds as well as long run sustainability of NEST	Develop procedures for strong financial management systems within NEST, as well as within its "external team" (NGOs, involved private and public organizations) Combine strength of financial management skills with technical staff to develop local project budgeting capability. Develop information on available programs (funding sources) inside and outside Jamaica. These financial planning skills can be used to design projects for support by other donors, as one form of NEST sustainability	Management As above, with particular emphasis on financial management and accounting, linked with computer systems to project budgets and track expenditures, action planning, internal controls and procedures Technical As above, primarily in developing scopes for future projects and in making budget choices between program areas
Equipment Plan Purpose Allow NEST to be a compact, efficient organization, utilizing modern equipment for greater productivity	Equipment Plan Purpose Allow NEST to be a compact, efficient organization, utilizing modern equipment for greater productivity	Inventory existing equipment and begin identifying possible needs (computers, vehicle, back-up generators, audio-visual, etc.) Write scope of work and identify consultant with expertise to facilitate task, particularly with regard to computers, obtain resources to implement Assignment includes: <ul style="list-style-type: none"> • Hardware • Software • Training for staff • Decisions on network • Number of employees per terminal • Phasing Ensure appropriate level of equipment for short run, while moving toward more elaborate applications of data base management for fund raising, mass mailings, newsletters, or contributing to national data bases.	Management As above, with particular emphasis on human resource management for internal ability to determine system needs, inventory control as well as internal controls, manuals and procedures. Ensure proprietary software is handled ethically Technical As above, primarily in developing internal ability to write specifications or scopes of work to select equipment or space, tradeoff analysis
Office space and location plan Purpose Obtain for NEST the appropriate amount of space in a desirable	Office space and location plan Purpose Obtain for NEST the appropriate amount of space in a desirable	Contingent upon program strategy, vision of the organization. NEST can begin identifying options and comparing costs as well as other considerations	

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**ANNEX I: SELECTION CRITERIA FOR "AREAS OF ENVIRONMENTAL CONCERN"
AND "SITE PROJECT LOCATIONS"**

The project will focus activities in selected "areas of environmental concern" in order to strategically invest limited financial resources. Four of these areas are to serve as project locations, i.e., "Strategic Interventions in the Environment" (SITE) sub-projects. The identified areas are those now undergoing or expected to undergo environmental stress to an extent that the national economy may be impacted or environmental resources of national economic significance may be threatened. The selection criteria employed to identify areas of environmental concern are as follows:

- * ***An area whose tourism-based economy both makes a significant contribution to the national economic base and is threatened by environmental degradation;***

Indicators:

Significance of area's tourism-based foreign exchange earnings
Existence of obvious environmental degradation (untreated solid and liquid wastes, inappropriate land uses and structures, etc.)
Reported potential for diseases such as typhoid caused by poor environmental health conditions
Decline of environmental systems and natural resources on which the area depends for its appeal as a tourism destination (e.g., coral reef degradation and fish depletion)

- * ***An area of economically significant environmental attributes which are threatened by existing or proposed development;***

Indicators:

Significant existing or proposed development activities which pose a threat to environmental systems and natural resources
Presence of species or populations which maintain ecosystem balance
Presence of important habitat or unique plant or animal species
Presence of economically valuable natural resources (e.g; forest and agriculture lands, water sources, etc.)
Presence of high scenic, cultural or aesthetic values

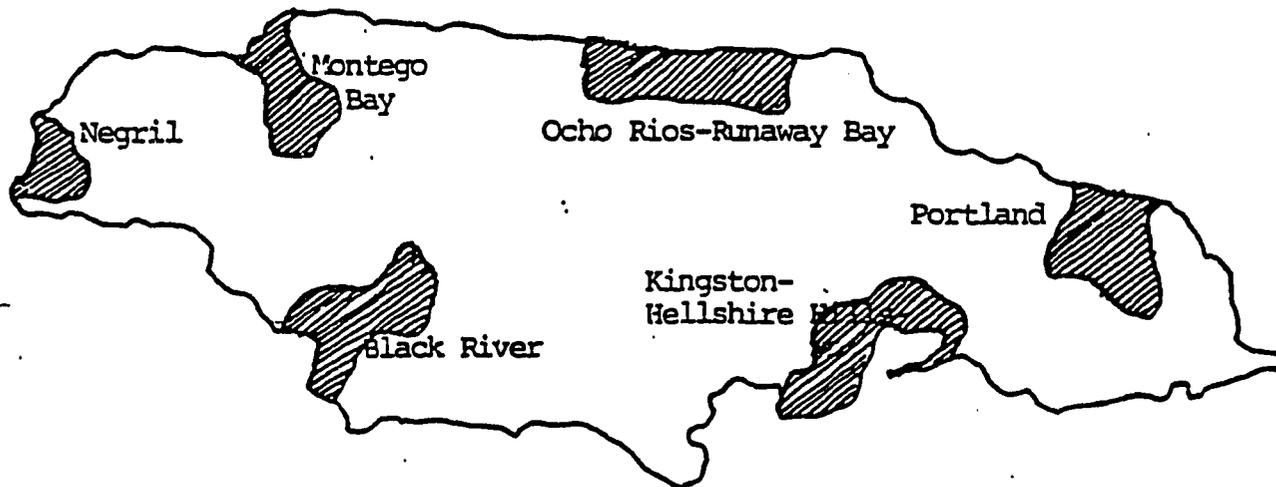
- * ***A fringe area of a rapidly growing city where residential development, farming practices and other land uses threaten to degrade significant soil, water, vegetation and other environmental resources which are crucial to the long-term sustainability of the economy.***



Indicators:

- Rapid urban growth
- Extensive unplanned squatter settlement on lands of high biological or economic value
- Presence of important habitat or unique plant or animal species
- Presence of economically valuable natural resources, including forestry and agricultural lands and water sources
- Extent of environmentally-sensitive lands (erosion-prone areas, flood plains, etc.)

Six geographic areas of environmental concern from which to choose DEMO's four sub-project areas were identified by the Project design team. These areas were then tentatively confirmed by consultations with Jamaican government, NGO and private sector leaders and technical experts concerned about environmental management. The locations include:



Negril

The Negril area is a major growth center for international tourism and hence is a major contributor to foreign currency revenues of the country. Its rapid development is placing tremendous strains on the natural resources on which tourism so heavily depends. Key environmental issues include degradation of the coral reef and its fishery; pollution of coastal waters by untreated or partially treated sewage; poor collection and disposal of solid waste; inappropriate and unregulated land uses; and degradation of the Negril River morass.

Montego Bay

Montego Bay is Jamaica's principal tourist destination and is a major focus for investment and economic development. The area is suffering from a wide range of environmental problems associated with urbanization that threaten to undermine its economic health.

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Unmanaged development and squatter settlements in the upper watersheds have denuded hillsides, and sedimentation from soil erosion as well as solid waste and pollutants wash into Montego Bay threatening fragile coastal ecosystems. Literally all environmental protection-related infrastructure is overtaxed and unable to service the rapidly growing population, including sewerage, storm water drainage, solid waste management and public cleansing and sanitation.

Black River

The Black River area includes the historic community of Black River and the Black River morass which encompasses the largest, least disturbed and most varied wetlands in Jamaica. The lower morass supports essential nursery areas for commercial shrimp and fish and provides habitat for most of the remaining crocodiles, turtles, manatees and many other species found nowhere else in Jamaica. Key environmental issues include agricultural and industrial pollution of the Black River system; pollution of Black River Bay by untreated sewage; and unregulated exploitation of wetland and marine resources (harvesting of mangroves, destruction of crocodiles, sand mining from beaches, etc.). Planned tourism developments will aggravate this area's environmental problems.

Ocho Rios to Runaway Bay

This area is an important international center of tourism and is Jamaica's principal cruise ship destination. Extensive hotel development and rapid population growth are at the heart of environmental issues in the area. Overfishing, boat anchoring and pollution have seriously degraded the coral reefs; squatter settlements have denuded hillsides causing erosion and have deposited untreated solid and liquid waste in the streams and gullies of the area; and sewage has polluted the coastal waters and swimming beaches.

Portland/Port Antonio

Blessed with abundant rainfall, dense forests, diverse coastal ecosystems and rich architectural heritage, the Portland area is likely to be targeted for more tourism accommodations. Its major community, Port Antonio, does not have a sanitary sewerage collection and treatment system and solid waste is only irregularly collected. Indiscriminate cutting and burning of forests has impacted the watersheds.

Kingston/Hellshire Hills

This area is Jamaica's most densely populated. It is also an area rich in natural resources including agricultural lands, wildlife habitats (including those for several rare and endangered species), fresh water sources and extensive wetland and marine ecosystems. Population growth of Kingston has placed great pressure on these

natural resources. Squatter settlements, indiscriminate cutting and burning of forests and hillside farming activities in the upper watersheds have seriously impacted water supplies; rich agricultural land is being lost to residential development; untreated residential and industrial sewage is polluting the Rio Cobre River and ultimately Kingston Harbour; and ecosystems along the entire coastline of this area are under constant attack from water pollution, sand mining, siltation, subdivision development, and litter. These activities impact the agriculture industry, reduce the potential for tourism development, and impair the ability of the area's urban centers to service future population growth and economic development.

Of these six identified areas of environmental concern, it is proposed that the project carry out activities in four. The project would be implemented in two overlapping stages over a five-year period. During the first stage (years one and two), the focus will be on two areas which meet project selection criteria described below and whose aggregate scores across selection criteria demonstrate strategic importance and a high likelihood of successful implementation of project activities. Second stage (years three to five) targets and activities in two additional areas of environmental concern would be based on the knowledge and insights gained from the first stage and priorities then defined by the NRCA and other public and private environmental management organizations.

The selection criteria used to identify SITE locations from selected areas of environmental concern were:

- * *High ranking in meeting the criteria for selection as an area of environmental concern;*
- * *Area is representative of social, economic and ecological conditions found elsewhere in Jamaica and thus offers opportunities for prototypical solutions to environmental problems and has applicability to policies, institutions and procedures at the national level;*
- * *Presence of opportunity for project collaboration between GOJ agencies, NGOs and/or community-based organizations;*
- * *Presence of one or more active, registered NGOs with experience in project management;*
- * *Presence of demonstrated local initiative in addressing environmental problems;*
- * *Presence of disadvantaged groups (including youth, women, small-scale farmers, fishermen, etc. who may benefit from environmental improvement activities; and*
- * *Extent to which USAID and other donor funds and activities can be leveraged.*

Weighted scores were attached to each of the above criteria and two

areas were selected to be included in the initial phase of the project: the Negril area and the Montego Bay area. Both areas play vital roles in Jamaica's economy and both areas are experiencing environmental degradation that threatens their tourism-based economies. Both are among the most rapidly growing areas of the country and environmental impacts from rapid urban growth are being experienced which will require the concerted efforts of GOJ agencies and NGOs to resolve. There are active NGOs committed to environmental improvements in both areas (e.g., the Chamber of Commerce and Coral Reef Preservation Society in Negril and the Marine Park Trust and the Greater Montego Bay Redevelopment Company in Montego Bay), and the local government capacities and GOJ coordination in both areas are reputed to be among the most effective in Jamaica. Both areas contain squatter settlements whose environmental health conditions would benefit from improvements in liquid and solid waste management and/or whose economic conditions would benefit from protection of vegetation and soils and from improved land management. Individual groups such as fishermen may benefit from reef protection measures.

SITE activities in both areas would benefit from and contribute to concurrent USAID and other donor activities. USAID has active programs supporting tourism, regional planning, water and sewerage infrastructure, and environmental data collection in Montego Bay; and water supply infrastructure in Negril. UNDP is initiating a complementary planning effort in Negril and the EEC is proposing a major sewerage project for that area.

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ANNEX J: NEGRIL: Illustrative SITE Activities

A. INTRODUCTION

Negril is one of Jamaica's treasures. Blessed by a compellingly beautiful natural environment, an attractive built environment and a comfortable ambience, the area is appreciated by residents and visitors alike. Negril has become a major growth center for international tourism and hence a major contributor to foreign currency revenues of the country.

The unfortunate byproduct of the otherwise desirable outcomes of this growth is the serious degradation of environmental systems and natural resources on which Negril's tourism so heavily depends. Key environmental issues include:

- * *degradation of the coral reef and seagrass bed ecosystems;*
- * *pollution of coastal waters by untreated or partially treated sewage and reported high nutrient and pathogen concentrations in nearshore ocean waters;*
- * *poor collection and disposal of solid waste;*
- * *inappropriate and unregulated land uses;*
- * *declining reproductive stock for reef fisheries; and*
- * *degradation of the biological integrity and reproductive viability of the Negril River morass.*

Improved environmental management is needed to protect Negril's environmental attributes and to thereby sustain the economic contributions of the tourism industry. Undermining efforts to improve management is the insufficiency of technical data to evaluate and act on identified problems; inadequacy of regulations and enforcement capacity to control environmental quality; lack of awareness of the causes and effects of environmental problems; insufficiency of funds to purchase necessary materials or support actions to improve environmental conditions; and a weak capacity of local GOJ and NGO entities to design and manage environmental improvement projects.

B. EXISTING ENVIRONMENTAL MANAGEMENT ACTIVITIES

While the task of managing Negril's environment is sufficiently challenging to tax even a sophisticated institutional system, there is cause for optimism. There have been significant efforts to protect the environment and institute better environmental planning practices and there is demonstrated evidence of local interest in solving local problems and of the willingness to contribute significantly in money, services, labor and ideas.

NGO Environmental Management Activities

Several NGOs and community-based associations (CBAs) have environmental management interests, including:

- * *Negril Chamber of Commerce;*
- * *Negril Coral Reef Preservation Society;*
- * *Negril Fishermen's Cooperative;*
- * *West End Association of Hoteliers;*
- * *Craft Vendors' Association;*
- * *Negril Citizen's Association; and*
- * *Whitehall Citizens' Association.*

Three of these organizations--the Chamber of Commerce, the Coral Reef Preservation Society and the Fishermen's Cooperative--have been especially active in environmental management including protection of the reef, enforcement of land use and environmental regulations, development of alternative fisheries practices to reduce fishing pressures in the coral reef ecosystems, management of solid waste, and environmental education.

The Negril Chamber of Commerce has commissioned an on-going water quality monitoring program intended to indicate potential sources of contamination that affect fresh waters and the near shore coral reef and grass bed ecosystems. The Chamber is also monitoring proposed land use changes in the area and, most recently, has addressed environmental considerations associated with a proposed, controversial tourism development near Bloody Bay. The Chamber Board has at least a dozen active, committed members and its business community membership has financed a range of environmental management projects. The Board is supported by a small, two-person staff with part-time accounting support. External audits are prepared by Touche, Ross, Thorburn & Company of Montego Bay.

The Negril Coral Reef Preservation Society is dedicated to the protection of coastal resources in the Negril area and has carried out a number of important coastal resource protection activities, the most noteworthy of which is the recent installation of mooring buoys to protect the Negril reef from damage caused by anchors of pleasure craft, fishing boats and scuba diving boats. The Society has demonstrated the ability to muster private sector financial contributions and voluntary labor to carry out its environmental management activities. To date, the Society has relied entirely on volunteers and contracted assistance financed from contributions.

The Negril Fishermen's Cooperative, Ltd. has two thrusts in its support for fishermen members: off-shore fishing and aquaculture. Both of these activities have a significant bearing on the protection of the nearshore fishery and the coastal resources that support the fishery: without fishing alternatives and fishery development and protection measures, the now overfished and weak reef ecosystem cannot be rejuvenated. The Cooperative has been

active for many years and is now completing its establishment as a legally organized cooperative with appropriate by-laws, organizational structure and financial procedures. The Cooperative also relies entirely on volunteer support.

These three organizations and the NGOs and community associations mentioned above represent an important human resource dedicated to environmental protection. In every case, however, their ambitious objectives are not matched by the staff resources and equipment needed to implement them. Training and technical and financial support are needed to bolster the abilities of these organizations to carry out environmental management activities.

GOJ Environmental Management Activities

In addition to the Negril Green Island Area Local Planning Authority (described below), the GOJ is represented in Negril by the Town Planning Department (TPD), the National Water Commission (NWC), the Environmental Control Division (ECD) of the Ministry of Health, NRCA, Western Parks and Market Department (WPM), Urban Development Corporation (UDC), Jamaica Hotel and Tourist Association, Jamaica Tourist Board, and the Westmoreland and Hanover Parish Councils. Most of these public and quasi-public agencies have minimal staff presence and inadequate support services and materials to sustain a significant field effort.

Joint GOJ/NGO Environmental Management Activities

The Negril/Green Island Area Local Planning Authority is a unique, private/public sector entity formed in 1984 to assist the orderly and progressive planning and development of the Negril and Green Island area and to manage certain assets provided to the authority. The Authority is comprised of government and business leaders including representatives of the two Parish Councils whose boundaries join in the middle of the community, the Chamber of Commerce, the Urban Development Corporation, the Ministry of Health, the Natural Resources Conservation Authority, the Town Planning Department, the Police, the Crafts Vendors Association and other community organizations, service clubs and local businesses. The authority's six-person staff carries out urban management and enforcement activities and coordinates private and public development planning activities in Negril. The staff includes a manager, assistant planner, community relations specialist, bookkeeper, administrative officer and secretary. The bookkeeper receives part-time support and weekly internal auditing from a chartered accountant with the Hanover Parish and the Authority's books are audited by Coopers Lybrand of Montego Bay. The NRCA Area Manager is also housed at the Authority offices. The Authority receives annual subventions from the GOJ, project grants from private and public organizations and revenues from users fees from

various programs and facilities it manages. The Authority has a strong interest in developing revenue-generating projects in order to develop a means to sustain itself and to expand its activities in Negril.

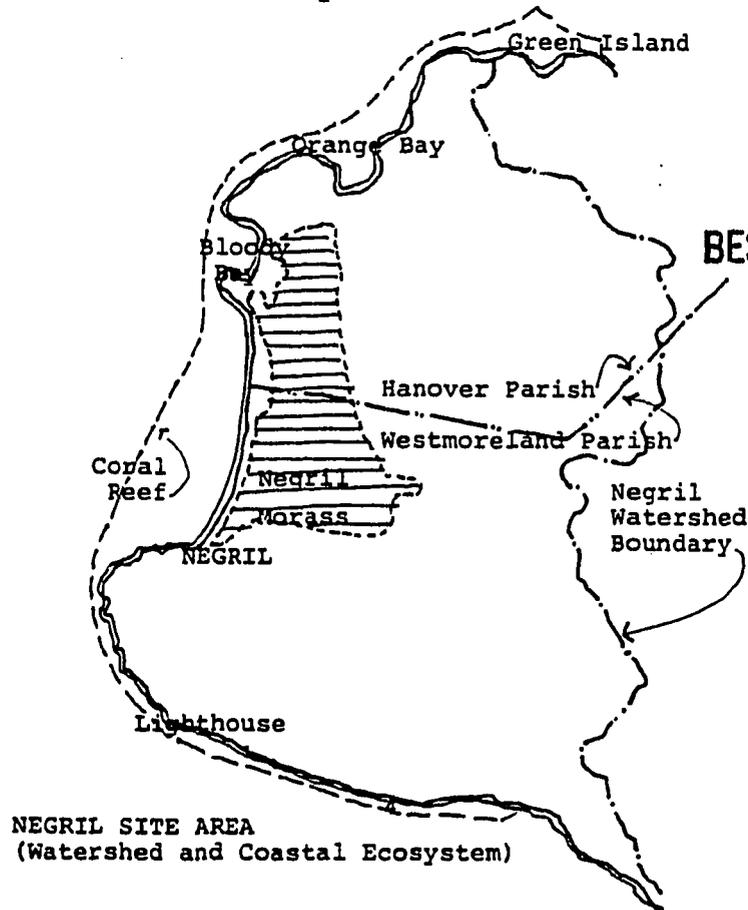
Related Donor Activities

The European Economic Community (EEC) has proposed a major sewage management scheme to be implemented by 1996. An expanded water supply scheme to be financed by Japan and USAID is to be implemented by 1995. The Canadian International Development Agency (CIDA) has proposed the development of a regional plan for Negril and has tentative plans to provide grant funding for a local fish market and other activities to support the Fishermen's Cooperative. Negril is also one of four communities to benefit from grant assistance to the TPD from the United Nations Development Program (UNDP) to prepare a development plan and orders (zoning) for the community by 1993. Finally, the Protected Areas System Plan prepared for the USAID-funded PARC project has identified the Negril coral reef ecosystems as a high priority area to include in the national park system.

C. DESCRIPTION OF PROPOSED SITE ACTIVITIES

Geographic Area of Negril SITE Activities

The SITE activities will be carried out within the Negril watershed and near shore marine ecosystems.



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Negril SITE Objectives

By the end of the project, collaborative GOJ/NGO actions will have:

- * established conservation strategies, environmental controls and enforcement measures to protect highest priority lands and marine resources;
- * established an expanded local environmental data base and procedures for collecting and reporting information;
- * implemented selected projects to carry out resource conservation strategies, including a sewage treatment voluntary compliance program; an expanded reef protection project including additional mooring buoys and watersports marker buoys; and an environmental controls enforcement program; and
- * conducted environmental awareness activities pertinent to above actions.

Proposed Institutional Relationships

The DEMO Project Management Unit (PMU) will work with government and non-government organization representatives to name a "local environmental management council" to guide implementation of SITE activities. Many such individuals in Negril have indicated that the Negril/Green Island Area Local Planning Authority would be a logical group to serve that function provided that several additional local organizations are asked to serve in at least an advisory capacity to the authority's Board (the present composition is described above). Additional organizations that have been suggested for representation include the Negril Coral Reef Preservation Society, the local chapter of the Jamaica Hotel and Tourist Association, the Citizens' Association and the Fishermen's Cooperative.

It is recommended that the Authority serve in the additional capacity of implementing entity for administration of SITE activities in Negril. The Authority has demonstrated sufficient staff capacity and financial procedures to manage small projects; has pursued measures to develop a self-sustaining program; has established office space and equipment for conducting project activities; and has the requisite powers to carry out certain high priority projects including enforcement of environmental regulations, park development, sewage treatment inspection and voluntary compliance program, planning projects to identify and protect environmental resources, etc. For those activities that may be directly managed by another local organization, the Authority would be strengthened to provide financial management assistance and controls to these organizations. In both capacities as local environmental management council and project implementing entity, the Authority would receive technical assistance and

training by the PMU in the areas of project development and management, project accounting, public participation, and project-related technical matters.

Project Approach

The first action to be carried out by the local environmental management council (the Authority) is the preparation of a "Framework for Action" that provides an opportunity for local citizens to express concerns and for the council to:

- * identify environmental issues and opportunities;
- * determine the environmental priorities to be addressed over the course of the SITE project;
- * determine environmental data needs and steps to collect, maintain and report needed information;
- * identify actions to protect highest priority land and coastal resources;
- * identify environmental management constraints and training and technical assistance needs;
- * determine certain feasible activities that could be undertaken right away under the SITE grant program;
- * list those activities that may be initiated under the SITE grant program after further necessary research, data collection or analysis as well as those that may be appropriately funded by the EAI program or other source;
- * prepare a work plan for carrying out SITE activities, including a schedule, assignment of responsibilities, budget, training plan, technical assistance plan, etc.; and
- * reach collaboration agreements between GOJ, NGO and other local groups to carry out identified activities.

The Framework for Action is then submitted to the PMU for substantive concurrence and budget approval. Criteria will be established for approval of grants for SITE activities by the DEMO Project Coordinating Committee, including:

- * the significance of the environmental issue addressed by the proposed activity;
- * the extent to which the environmental issue will be addressed and that tangible results can be produced;
- * the demonstration that the proposed activity is within the capacity of the Authority and its GOJ/NGO members to implement;
- * the extent to which it produces tangible results for disadvantaged community groups;
- * the extent to which the activity is replicable elsewhere in Jamaica; and
- * the extent to which other funds (private, USAID or other donor, GOJ, or voluntary contributions) can be leveraged.

Upon approval, project planning and development funds would be granted to the Authority and the Authority would, in turn, make funds available to other organizations (e.g., the Chamber of Commerce and the Coral Reef Preservation Society) that may be designated implementers of approved activities.

For those activities to be carried out by the Authority as well as for those to be carried out by other local organizations, the Authority will work with the assistance of the PMU and its technical support contractors to:

- * *promote implementation by securing the cooperation of private and public sector individuals and agencies;*
- * *collect and review activity work plans and budgets and recommend approval of disbursements by the PMU;*
- * *recommend approval for PMU contracting of professional services and local procurement of commodities, goods and services;*
- * *monitor activity performances against stated objectives;*
- * *control and account for use of SITE funds; and*
- * *prepare quarterly and annual progress reports to the PMU.*

The PMU will provide a direct grant to the Authority based on detailed project proposals which have been reviewed and approved by the Project Coordinating Committee (described in the DEMO Project Paper) for the purchase of local goods and services which may be used in the Negril SITE project activities. The PMU SITE Project Officer will work directly with the Authority to assist its preparation of these grant proposals, and an initial grant of up to US\$10,000 will be available to assist local efforts in the preparation of the initial Framework for Action.

Illustrative Negril SITE Activities

The following is intended as an illustrative description of project activities and implementation arrangements for the Negril SITE area and is not intended to preempt the determination of project priorities and implementation arrangements by local citizens. The suggested SITE activities grew from individual discussions with local political leaders, hoteliers, fishermen, technical professionals, and representatives of the Negril/Green Island Area Local Planning Authority, the Chamber of Commerce, the Negril Coral Reef Preservation Society, and GOJ agencies represented in Negril.

While no attempt has been made to arrive at a consensus with respect to local determination of priority SITE activities, there is consistency of perception on the part of those interviewed as to the logical first SITE environmental management activities to be carried out. These are:

1. Implement an interim sewage management voluntary compliance program.

A proposed sewage collection and management scheme to be financed by EEC may be operational by 1996. In the interim, raw sewage from existing, inadequate, on-site sewage facilities degrades the coastal ecosystem on which tourism so heavily depends and poses environmental health risks that threaten the local population and visitors alike. As algae blooms cloud the water, as reef fisheries become devastated, and as health hazards reach dangerous proportions, Negril leaders recognize their vulnerability. Tourism could plummet, as has happened in other similar circumstances, and along with it, local employment.

A great deal can be accomplished to reduce this threat until such time as the proposed sewage collection infrastructure can be operational. A SITE activity that could be started nearly immediately is a program to induce voluntary corrective measures to reduce raw sewage discharges.

The targets of such a program are two groups initially: the small 5-20 unit hotels along the beach and west end cliff area and the large resort hotels. The smaller hotels often operate with undersized, poorly designed and leaky septic tank systems and some are reported to discharge sewage with no treatment whatsoever. The larger hotels often operate independent sewage treatment plants, but in many instances, these plants do not function properly due to poor management, absence of spare parts or inappropriate design.

The SITE activity would assist the Negril/Green Island Area Local Planning Authority (in cooperation with the NRCA Area Manager) to carry out an inspection program of these targeted facilities and to provide constructive, confidential advice to the hoteliers with respect to the environmental impacts of their systems and of the recommended voluntary solutions available to them. This "environmental audit" approach is based on the notion that information and awareness of the significance of one's actions on the environment (and often low cost of correction) may induce voluntary policing of those actions.

SITE funds would contract inspection services and sanitary engineering advice, provide training for enforcement personnel and purchase environmental awareness materials directed at targeted groups. A program to purchase fiberglass septic tanks in bulk to pass on savings to participating hoteliers would be instituted.

Implementing Entity: Negril/Green Island ALPA
Cooperating Entities: JHTA and Negril Chamber of Commerce
SITE Costs: US\$XX,XXX

SITE Activity Benefits: Reduced coastal pollution and damage to marine ecosystems; reduced environmental health threat; reduced vulnerability of tourism base

Beneficiaries: Local employees of tourism industry; hoteliers; fishermen

Technical Assistance: Inspection and sanitary engineering services

Training Required: Training of NRCA and Authority enforcement personnel by technical assistance providers (see Activity 4)

Env Awareness Activity: Dissemination of materials to targeted hoteliers documenting coastal pollution issues and economic implications, methods available and costs to correct problems

Fund Leveraging: Estimated 3:1 private sector investment in pollution controls to SITE investment

2. Develop an expanded environmental data collection, monitoring and dissemination program.

The Chamber of Commerce has initiated and financed an environmental data collection effort (water quality of near shore ocean waters) that would be expanded and sustained in order to provide a warning system for unacceptable environmental impacts, monitor improvements to sewage treatment, and support other environmental management decisions. Monitoring stations would be expanded, a current analysis (similar to that carried out as part of the USAID-financed water quality monitoring program in the Montego Bay area) would be implemented, additional environmental quality parameters would be monitored (including coral reef health, algal abundance and type, particulate and dissolved turbidity, and others) and reporting and information dissemination procedures would be established.

SITE funds would finance contractual services for system design, data collection, data management and information reporting, training and necessary commodities. The Negril Chamber of Commerce would continue as the implementing entity with design assistance from the UWI Conservation Data Centre.

Implementing Entity: Negril Chamber of Commerce
Cooperating Entities: CDC, NCRPS, NRCA, Negril/Green Is ALPA
SITE Costs: US\$XX,XXX
SITE Activity Benefits: Documentation of environmental quality; basis for environmental management decisions; warning system for unacceptable environmental conditions; means of monitoring sewage treatment improvements

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Beneficiaries: Local employees of tourism industry; hoteliers; fishermen; all local residents

Technical Assistance: Environmental data system design, collection, management and reporting procedures

Training Required: Training of local personnel in data collection and management

Env Awareness Activity: Dissemination of reports to environmental agencies and affected private interests

Fund Leveraging: Estimated 1:4 private sector investment in data program to SITE investment

3. **Delineate important lands, resources and ecological systems within Negril River watershed and coastal area and prepare conservation strategies for their management**

Since the first ecological survey of the Negril area conducted in 1960, there have been numerous surveys, analyses, reports and plans prepared for the protection of Negril's unique marine and terrestrial habitats. While a great deal is known about the important ecological contributions of, for examples, the Negril Morass and the remaining mangrove concentrations, and while proposals to protect these resources and ecological systems have been offered, few definitive actions have been taken and these environmental resources continue to be seriously degraded.

This SITE activity would finance technical assistance to research earlier analyses and recommendations; review the present conditions of these environmental resources; document the important ecological linkages between, e.g., upland land uses and the biological health of downriver and coastal systems; prepare recommendations for alternative conservation and management strategies; delineate high priority areas to be protected; compile land ownership maps of priority areas; conduct feasibility analyses of proposed development plans affecting these areas, e.g., and prepare legislation to designate and protect these key environmental resources. It is anticipated that this SITE activity would lead to future SITE grant proposals and/or proposals to EAI and other funding sources for activities such as:

- * establishing the Negril Royal Palm Reserve;
- * developing an indigenous fisheries aquaculture project within the Morass;
- * establishing a marine park and other protected areas;
- * implementing land management controls in upland area of watershed;
- * developing sustainable ecotourism opportunities related to protected areas;

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- * developing a liquid and solid waste management program;
- * preparing a design plan to guide development of the built environment from the Lighthouse to Bloody Bay; and
- * developing a schools-focussed environmental education curricula associated with management of the watershed's environmental resources.

Implementing Entity: Negril/Green Island ALPA
Cooperating Entities: Negril Fishermen's Cooperative, JHTA, NCRPS, Chamber of Commerce, UDC, RPPU
SITE Costs: US\$XX,XXX
SITE Activity Benefits: Delineation and protection of key environmental resources
Beneficiaries: Local operators and employees of tourism industry; fishermen; all local residents
Technical Assistance: Technical research and scientific analysis; preparation of conservation strategies; land ownership research; feasibility analyses; environmental education
Training Required: Training of Authority personnel in each of above technical assistance areas
Env Awareness Activity: Preparation/dissemination of environmental education materials associated with the promotion of protected area conservation strategies
Fund Leveraging: Estimated 1:4 private and public sector investment to SITE investment

4. Strengthen Local Environmental Controls and Enforcement

There is agreement across all Negril citizens interviewed that enforcement of existing environmental regulations and development of new, more responsive environmental controls is a high priority. Many regulations such as the existing Development Orders, the Tree Preservation Order, beach mining controls, land use controls, litter laws, watersports controls, fishing gear controls, and others are "on the books" but in desperate need of enforcement.

This SITE activity would include the training of two enforcement officers or wardens (in conjunction with the interim sewage treatment and protected areas management programs outlined above); the purchase of two patrol boats and related equipment (which can also serve to support the environmental data collection activity outlined above) and a motorcycle; the financing of marker buoys to direct watersports activities and additional mooring buoys; and support for environmental awareness activities to educate watersports operators, developers, property owners, fishermen, and others who are not familiar with existing regulations. In addition, this SITE activity would develop new environmental

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controls in close coordination with activities 1-3 outlined above.

Implementing Entity: NCRPS and Negril/Green Island ALPA
Cooperating Entities: Chamber of Commerce, Negril Fishermen's Cooperative, JHTA, UDC, JTB
SITE Costs: US\$XX,XXX
SITE Activity Benefits: Enforcement of environmental regulations
Beneficiaries: Local operators and employees of tourism industry; all local residents
Technical Assistance: Enforcement techniques and development of environmental control regulations
Training Required: Training of wardens in environmental regulations and techniques of enforcement
Env Awareness Activity: Preparation/dissemination of environmental education materials associated with environmental controls
Fund Leveraging: Estimated 1:4 private and public sector investment to SITE investment

The Negril Framework for Action is expected to provide sufficient basis for the initial year funding obligation; it is then expected that subsequent grant proposals to the PMU would be considered on a semi-annual basis. The SITE grants are awarded on a competitive basis and there is no formula for funding future SITE activities in Negril. Total DEMO Project funds available for SITE activities suggest a planning target of approximately \$500-600,000 for Negril SITE activities.

The DEMO Project contribution to the initial phase of the illustrative SITE activities described above is estimated at \$260,000. It is anticipated that the GOJ would also contribute approximately \$XX,XXX in staff time, office space and land resources. The NGO community would contribute an additional \$XX,XXX in cash, labor and in-kind services. The private sector would invest at least \$XXX,XXX in sewage treatment facilities and other environmental protection measures.

Training and Technical Assistance

Training and technical assistance for both project management and organizational development will be financed through a grant mechanism coordinated by the PMU staff. Logistical and technical assistance can also be provided by the Jamaica umbrella NGO contracted to provide support services to the PMU.

The Authority would receive project-driven training and technical assistance as well as support aimed at developing the leadership

capacity called for in its mandate to serve as the coordinator of local development activities, the lead for environmental planning, the enforcer of environmental regulations, and the manager of important public lands and facilities. Training and technical assistance would then also target organization development skills, entrepreneurial skills to develop sustainable revenues, conflict resolution skills, project development and management systems, and enhanced professional skills required to address Negril's environmental problems.

The two other key SITE activity managers--the Chamber of Commerce and the Coral Reef Preservation Society--would also receive project-driven training and technical assistance as well as support aimed at enhancing their effectiveness as organizational leader of the business community and leader of the effort to protect coastal resources. The Chamber's project management, accounting and reporting skills, its ability to generate income for sustaining environmental management activities, and its staff professional skills all would be enhanced. The Society would receive technical support and training in fundraising, project management and accounting, environmental education, and volunteer mobilization.

BEST AVAILABLE DOCUMENT

ANNEX K: AID INTERNAL DOCUMENTATION

BEST AVAILABLE DOCUMENT

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