

DRAFT

NATIONAL PROGRAMME OF ACTION (NPA)

**JAMAICA'S NATIONAL PROGRAMME OF ACTION (NPA)
FOR THE
PROTECTION OF THE COASTAL AND MARINE ENVIRONMENT
FROM LAND BASED SOURCES AND LAND BASED ACTIVITIES**



**Prepared by
National Environment and Planning Agency
10 Caledonia Avenue
Kingston 5
Jamaica**

AUGUST 2003



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ACKNOWLEDGEMENTS

LIST OF ABBREVIATIONS

ACOPS	Advisory Committee on the Protection of the Seas
ASSP	Agricultural Support Services Project
CIDA	Canadian International Development Agency
CWIP	Coastal Water Quality Improvement Project
COAST	Conservation and Action for Sustainable Projects
EAST	Environmental Audits for Sustainable Tourism
EEZ	Exclusive Economic Zone
ENACT	Environmental Action Programme
EU	European Union
GDP	Gross Domestic Product
GEF	Global Environment Fund
GOJ	Government of Jamaica
GPA	Global Programme of Action
IDB	Inter American Development Bank
IFI	International Financial Institutions
IPPM	Integrated Pesticides and Pest Management
IPTT	Investment Projects Task Team
KSA	Kingston and St. Andrew
LBA	Land Based Activities
LBS	Land Based Sources
MOA	Ministry of Agriculture
MOE	Ministry of Education
MOH	Ministry of Health
MLE	Ministry of Land and Environment
MOLG	Ministry of Local Government
MOWH	Ministry of Water and Housing
NCOCZM	National Council on Coastal Zone Management
NEAP	National Environmental Action Plan
NEEC	National Environmental Education Committee
NEMP	National Environmental Monitoring Programme
NEPA	National Environment and Planning Agency
NGO	Non Governmental Organisation
NOAA	National Oceanic and Atmospheric Administration
NPA	National Programme of Action
NRCA	National Resources and Conservation Authority
NSWMA	National Solid Waste Management Authority
NSWMP	National Solid Waste Management Project
NWC	National Water Commission
PCA	Pesticide Control Authority
PIOJ	Planning Institute of Jamaica
R2R	Ridge to Reef
SIRI	Sugar Industry Research Institute
UNEP	United Nations Environmental Programme
USAID	United States Agency for International Development
WB	World Bank
WCR	Wider Caribbean Region

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STATEMENT MINISTER OF LAND AND ENVIRONMENT

EXECUTIVE SUMMARY

CHAPTER 1



1.0 INTRODUCTION

1.1 Background

Jamaica is the third largest of the group of islands known as the West Indies. It is located in the western Caribbean approximately 145 kilometres south of the island of Cuba and 161 kilometres west of Haiti with a land area of 10,981 square kilometres (Figure 1). An archipelago, Jamaica has stewardship over a marine space 24 times its land space, with an exclusive economic zone of approximately 235,000 square kilometres.

The nature of the Jamaica's coastline has given rise to the formation of a unique ecosystem of harbours, sandy beaches, rocky shores, estuaries, wetlands, and coral reefs. To a large extent the country's major cities and towns have developed along the coastline including the capital city Kingston which sits on the seventh largest natural harbour in the world and the major tourism towns of Montego Bay, Ocho Rios, Negril and Port Antonio, all of which lay along the coastline (Figure 2). Activities within Jamaica's coastline (approximately 886 kilometers in length) are estimated to contribute to about 90% of the country's GDP.

Globally, seven out of 10 people around the globe live within 80 km of the shoreline. Almost half the world's cities with a population of over one million are sited near tide-washed river mouths. The major threats to the health, productivity and biodiversity of the marine environment result from human activities on land - in coastal areas and further inland. Some 80% of the pollution load in the oceans originates from land-based activities. This includes municipal, industrial and agricultural wastes and run-off, as well as atmospheric deposition. These contaminants affect the most productive areas of the marine environment, including estuaries and near-shore coastal waters.

The Jamaican experience has been no different from the global community the island's coastal and marine resources are under threat from factors such as, pollution and soil erosion. Management of waste water and solid waste stream remain a continuing challenge despite investments in sewage treatment projects in the major tourism towns of Ocho Rios, Montego Bay and Negril and the implementation of some aspects of the National Solid Waste Management Plan.

1.2 Justification

The country is well aware of the importance of ensuring that its coastal and marine environment is protected from land-based sources and land based activities. As early as 1995, Jamaica was one of the hundred and seven (107) countries, which attended the United Nations Environment Programme (UNEP) Intergovernmental Conference to adopt a Global Programme of Action (GPA) to protect the marine environment from land-based activities.

The country's economic development is to a large extent dependent on its coastal and marine resources. All the country's major centres for commercial activity are located along the coastal rim. The tourism industry which is the largest earner of foreign exchange and the second largest employer of labour to a large extent is built around the beauty of the coastal environment and fisheries is also of major economic importance.



Figure 1 Map of the Caribbean.

(Source Caribbean Plan Property List – http://www.escapeartist.com/A_CPL/Caribbean_Map/Caribbean_Map.html)

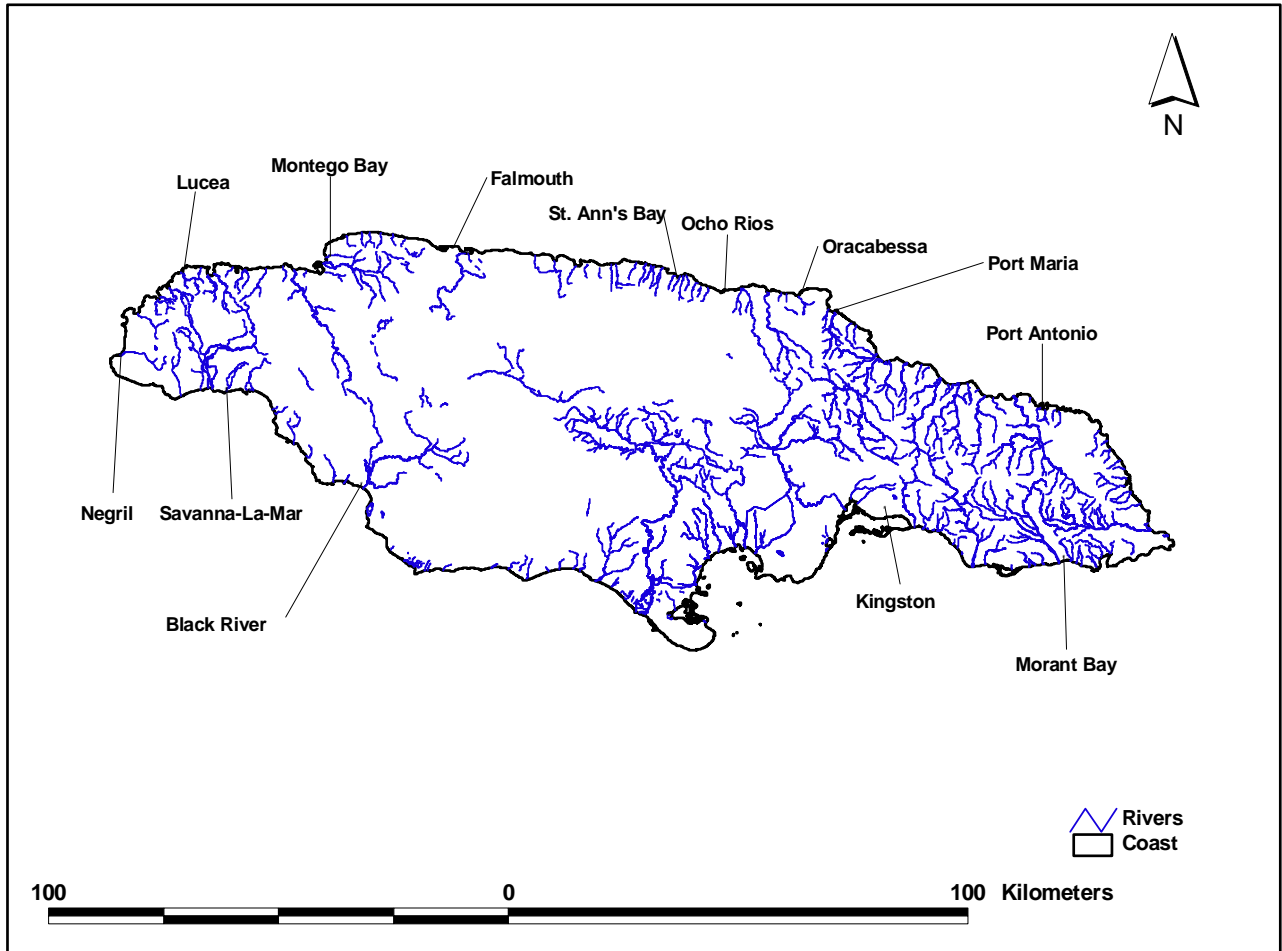


Figure 2 Map of Jamaica showing Major Coastal Towns.

The management and development of coastal communities which may lead to physical alteration and destruction of habitat, the protection of human health, the protection of marine biodiversity and the environment in general is a complex process, involving a myriad of organisations at the national and local levels in both the public and private sectors. These organisations often have their own agenda's and priorities, which may not always be in keeping with the need to protect the coastal and marine environment that is an important aspect of the country's natural resource base and is fundamental for sustainable economic development.

In addition, to the organisational and institutional issues, the country needs to harmonise its policy framework, develop its waste treatment infrastructure and legislative framework to address the issues of integrated coastal zone management (ICZM). The financial resources to address all of the above remain inadequate and there is constant competition with other areas of national priority for funding.

A National Programme of Action (NPA) to address Land-Based Activities and Sources (LBS/LBA) of marine and coastal degradation is intended to provide an integrated management framework that enables all relevant national and local actors to reduce environmental degradation and habitat damage, and thereby enhance the conservation and sustainable development of natural resources, as well as the elimination of threats to human and environmental health.

The NPA should incorporate the principles and concepts of ICZM, which encompass a wide range of ecological, economic, cultural, social, governance, and institutional considerations.

While the NPA is not an end in itself it is a useful strategic tool that can assist Jamaica in the prioritisation of our sustainable development needs and goals and aid all interested parties in the identification of focal points for optimal interventions. It can provide both a multifaceted, integrated policy framework and a comprehensive information base.

The NPA should serve as a vehicle for creating and strengthening partnerships among all levels of civil society, including government, local authorities, private sector, scientific and academic institutions. It can also provide a vehicle for the promotion and attainment of investment, from both domestic and foreign sources, for measures, strategies, projects and activities required for the sustainable use and protection of the marine and coastal environment and resources. An effective NPA to protect the coastal and marine environment LBS/LBA is therefore a critical strategic tool to ensure a collaborative approach and effective coordination of the management of this vital resource. It will elevate the issue to part of structured development planning.

1.3 Jamaica's NPA Development

The process of design, development and implementation of a NPA is as important as the end result itself, insofar as it generates in all stakeholders a sense of appropriation and therefore, of commitment. It is a means of internalising both the recognition of problems as well as the proposed solutions or options. The NPA should identify governance and management possibilities for all stakeholders, in order to ensure the long-term sustainability of its proposals. Jamaica as a small island developing country started the process of the development of an NPA as early as October 1995 when the country attended the UNEP Intergovernmental Conference to adopt the GPA. At that time Jamaica declared its commitment to 'incorporate the GPA's objectives into the mainstream of appropriate national, regional and global programmes and activities'.

In 1999, Jamaica supported regional efforts aimed at protecting the marine environment and participated in negotiations for the Protocol Concerning Pollution from Land Based Sources and Activities (Aruba Protocol) to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention WCR).

The country initiated action to develop its NPA when a Technical Group for the preparation of NPA to protect the coastal and marine environment LBS/LBA met over two days in November 2001¹. The main output was a preliminary draft framework for Jamaica's NPA.

In April of this year through a series of activities including a detailed literature review which examined issues of pollution sources, policy, institutional and legislative and application of participatory mechanisms the country has developed its NPA. The literature review and feedback from a national workshop, a series of sectoral workshops and a public sector CEO roundtable (Annex I) formed the basis of determining goals, priority areas of action objectives and strategies. The report of these activities *Volume I Supporting Documentation for the Development of Jamaica's National Programme of Action (NPA) for the Protection of the Coastal And Marine Environment from Land Based Sources and Activities* has guided the development of the NPA.

1.4 Goals of the NPA

Jamaica goals for the NPA are outlined below.

Overall Goal

To protect and improve coastal and marine environment from LBA/LBS of pollution.

Supporting Goals

- To protect human health.
- To reduce the degradation of the coastal and marine environment.
- To promote the conservation and sustainable use of the coastal and marine environment.
- To develop a framework for the acquisition, analysis and use of data for decision making in the protection of the marine environment.
- To develop an institutional and planning framework to improve the planning process in order to ensure sustained economic development and the protection of the coastal and marine environment.

¹ Proposed Structure for the Development of a National Programme of Action of Jamaica for the Protection of the coastal and marine environment from land-based activities, UNEP, NRCA & ACOPS – November 10, 2000

CHAPTER 2



2.0 METHODOLOGY

2.1 Identification of Pollution Sources/Activities

The identification of pollution sources/activities adopted the following methodology;

- Scoping exercise
- Analysis of impacts/characterisation

These methodologies provided specific tools for identifying and prioritising problems, from both environmental and socio-economic perspectives. The objective was to identify predominant issues and the main sources/causes of environmental degradation in each area/unit that would merit detailed characterisation.

Additionally, the scoping exercise took into account the relevant provisions of the Protocol Concerning Pollution From Land-Based Sources And Activities to the Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region.

The scoping exercise relied on the knowledge and judgement of the environmental regulatory agency, experts from the waste management, tourism, agriculture and local government institutions and the consultants.

No new research, assessments or diagnostics were undertaken. Instead there was a literature review of The State of the Environment Report (1995)² and other reports and available data. The National Environment and Action Plan (NEAP) identified watershed degradation, deforestation, land degradation in the hills, pollution of surface, ground and sea water, and developments on the lowlands are the major environmental problems of Jamaica (**Annex II**). The annex lists the main environmental problems of Jamaica. The Literature Review which is fully reported in *Volume I Supporting Documentation for the Development of Jamaica's National Programme of Action (NPA) for the Protection of the Coastal And Marine Environment from Land Based Sources and Activities* identified other point and non-point pollution sources.

The approach to the identification of pollution that impacted the coastal and marine environment was arrived at on the basis of sources rather than activities. In the main this was driven by a consideration of an institutional framework, which would be most appropriate to drive the execution of the NPA LBS/LBA. In the main agencies are responsible for the management of sources. Additionally the data on the quality of the environment is best articulated in terms of sources.

- Sewage;
- Solid Waste;
- Agricultural run off (erosion prevention/control);
- Mining; and
- Industrial Wastewater;

In terms of physical alteration and destruction of habitat the following type of activities were identified as threats to the coastal and marine environment.

- Hotel Construction;
- Solid Waste Disposal Sites;
- Housing Development;
- Port Expansion;

² National Environment Action Plan

- Pier Development; and
- Informal 'Squatter' Settlements.

2.2 Establishment of Priority Areas of Action

The sources and activities identified through the scoping process were further prioritised, by an evaluation and causes of environmental degradation in severely impacted areas. Also taken into account were the relevant provisions of Annex I and Annex II of the Aruba Protocol for the WCR. Criteria for the establishment of priorities for action included:

- Nature and severity of problems in terms of impacts on public health, ecosystem health, socio-economic benefits, and coastal & marine resources
- Contaminants
- Physical alteration
- Sources of degradation
- Areas of concern

There was also an attempt to prioritise the geographic areas. The criteria for the identification of geographical areas included:

- High endemism and/or high biodiversity value
- Tourism areas
- High government priorities as per NEAP or other strategic environmental action programme

Based on those considerations the following were identified as priority areas of action.

- (i) Sewage treatment and disposal.
- (ii) Agricultural practices (soil conservation, pesticides and fertilizer usage).
- (iii) Collection and disposal of solid waste.

The geographical scope of the NPA will be the entire island. However, in the process of implementing projects criteria have been developed which guide the process and these are based on; (i) ecological, social, & cultural value of the impacted asset, (ii) severity of the degradation, (iii) location with protected area, and (iv) tourism areas.

2.3 Management Objectives and Strategies for Priority Areas of Action

Management objectives were developed for source categories. Appropriate management objectives were assigned to each source of pollution. These objectives significantly contribute to (i) the design of medium and long-term, prioritised timetable for implementation; (ii) the development of a suitable policy, institutional and management framework for the execution of the NPA; (iii) the development of public education programmes; and (iv) the development of funding strategies. The objectives were enunciated in terms of the overall goal and supporting goals. For each set of objectives have been identified.

In terms of the strategies for protection of the coastal and marine environment these were in general related to pollution prevention or integrated coastal zone management. However, this will not be possible with an effective policy framework supported by the enabling legislation, an effective management framework and funding.

The basic approach to the development of the strategies for Jamaica's NPA has been to:

- Expand the necessary infrastructure/programmes necessary for waste management and improvement of agricultural practices;
- Harmonise and strengthen the policy and legal framework;
- Develop human resource capacity in relevant agencies;
- Encourage private sector investment; and
- Strengthen public education

Each priority area of action and the associated management objective and strategies are outlined below.

A. Sewage Treatment and Disposal

Objective 1: To expand and improve the collection, treatment and disposal of sewage island wide.

Strategies:

1. Expand municipal sewage treatment solutions in growing (economic and population) coastal towns.
2. Expand collection system for municipal sewage in Ocho Rios, Montego Bay and Negril.
3. Resuscitate and improve operational design of existing malfunctioning sewage treatment systems.
4. Improve commercial and domestic connections to existing municipal sewage treatment plants.
5. Provide alternative sewage treatment solutions (best practice) to absorption pits for coastal communities.
6. Improve preventive maintenance programme by strengthening financing of the programme and enhancing the human resource capacity.

Objective 2: To review the policy, legal and institutional framework to effectively manage the implementation and operation of sewage solutions.

Strategies:

7. Review and strengthen the existing policy and legal framework to include the use of innovative economic instruments and incentives to encourage actions.
8. Enforce existing legislation.
9. Fast track the development of relevant legislation in particular sewage treatment regulations and strengthen penalties for non-compliance.
10. Ensure compliance with planning and environmental regulations by independent sewage treatment operators (housing and hoteliers).
11. Train
12. Strengthen data collection process and improve dissemination through a National Environmental Monitoring Programme (NEMP).
13. Introduce a certification programme for sewage treatment plant operators.
14. Promote private sector investments in sewage solutions (construction, operation and maintenance).

Objective 3: To expand and improve public education on the effect of sewage on the environment and to provide cost effective alternatives sewage treatments.

Strategy:

15. Promote public education on the issue of sewage treatment and disposal and to use education to inform the public and other stakeholders of their roles/potential contributions to sewage solutions.

B. Agricultural Practices (soil conservation, pesticides and fertilizer usage)

Objective 1: To reduce and minimise soil loss.

Strategies:

1. Promote best farming practices in the cultivation of steep slopes.
2. Promote tree replanting in highly degraded watershed areas.
3. Improve the capacity and expertise within RADA and PCA.
4. Identification of areas unsuitable for farming and provision of alternative farm lands through a land distribution programme (Crown Lands).

Objective 2: To reduce pesticide and fertilizer contamination of water ways that discharge into the coastal zone.

Strategies:

5. Collect data on sediment, fertilizer and pesticide loading, analyse and disseminate to the National Environmental Management Programme.
6. Use data (from 5) to inform policy decisions and programmes of action.
7. Promote through the Industry Boards (cane, banana, citrus, coconut and coffee) the programmes for soil conservation and best practice for pesticides and fertilizer use.

Objective 3: To review the policy and legal framework to effectively manage the importation, packaging, distribution and application of pesticides and fertilizers.

Strategies:

8. Enforce existing legislation.
9. Review and strengthen the existing policy and legal framework.
10. Develop an Integrated Management of Pest and Pesticides (IMPP) policy with the Ministry of Agriculture.
11. Develop innovative economic incentives to encourage beneficial actions.
12. Develop human resource capacity within public and private sectors through education and training.

Objective 4: To expand and improve targeted education of the agricultural sector.

Strategies:

13. Strengthen farmer education and training programmes.
14. Divert the licensing and importation fees for fertilizers and pesticides to fund the education and training programmes.

C. Collection and Disposal of Solid Waste

Objective 1: To expand and improve the solid waste collection network.

Strategies:

1. Rationalise and expand the solid waste collection programme.
2. Improve preventive maintenance programme by strengthening financing of the programme and enhancing the human resource capacity.

Objective 2: To rationalise disposal site location and improve disposal site operation.

Strategies:

3. Termination of sites with coastal impacts and the development of alternative sites.

Objective 3: To review the policy, legal and institutional framework to effectively collection, disposal and management of solid waste.

Strategies:

4. Enforce existing legislation.
5. Ensure and promote compliance with legal requirements as well as best practice by private sector operators.
6. Collect data on solid waste composition and generation rates, analyse and disseminate to the National Environmental Management Programme.
7. Use data (from 8) to inform policy decisions and programmes of action.
8. Fast track the development of the National Solid Waste Policy and the accompanying Legislation.
9. Encourage waste minimisation programmes through effective policy and economic instruments and incentives.
10. Develop human resource capacity within public and private sectors through education and training.
11. Encourage further private sector investment in the solid waste management sector.

Objective 4: To expand and improve public education concerning solid waste disposal, recovery and reuse and the effect on the environment.

Strategy:

12. Promote public education on the issue of solid waste collection, disposal and reuse.

CHAPTER 3



3.0 PROGRAMME ELEMENTS

3.1 Overview

The elements for implementing the NPA will to a large extent build existing policies, programmes projects and action plans (Annex III). The main strategy will be to integrate the execution of these activities in a way, which meets the objectives outlined for each priority area of action. The NPA is a process, which is intended to be iterative within a management system framework. Such an approach within a cyclical framework will allow for the monitoring and evaluation of relevant environmental and socio-economic indicators. In this way in the implementation of the NPA Jamaica will be able to respond to emerging issues and adjust strategies accordingly. The programme elements identified ongoing and upcoming project/programmes, which will help to protect the marine environment from land base sources of pollution. Additionally, where gaps have been identified, new project concepts which be presented. The development of these projects to fundable project proposal will be the job of the Steering Committee once priorities have been agreed by the cross sectoral organisations.

3.2 Sewage Treatment and Disposal

Objective 1: To expand and improve the collection, treatment and disposal of sewage island wide. The National Water Commission (NWC) in its Corporate Plan 2003- 2006 has articulated its wastewater development plans for the next 20 years. Its objective is the sewerage of major towns over the period many of which are coastal towns. The plan takes into consideration the rehabilitation and expansion of existing plants as well as the building of new sewage treatment facilities. On the basis of this plan the followed have been identified for inclusion in the NPA to protect the marine and coastal environment from LBS/LBA.

The table below outlines existing and upcoming projects as well as areas where gaps exist in light of the overall goal of the NPA.

Table 1 (a) Sewering Projects

2003 -2018	2003 -2008	
Existing Flow West KSA	Upcoming Port Antonio Falmouth Oracabessa St. Ann's Bay Port Maria Savannah La Mar Lucea	New (TBD)

Table 2 (b) Rehabilitation and Expansion Projects

2003 -2008	2003 -2008	2003-2013
Existing KSA Western and Greenwich	Upcoming Harbour View	New Ocho Rios Negril Montego Bay Independence City/Portmore

(ii) Waste reception facilities for ship generated waste for the Port of Kingston the countries busiest port will be implemented. Its establishment will also satisfy the requirements of the 1973 International Convention for Prevention of Marine Pollution from Ships as modified by the Protocol of 1978 (Marpol 73/78). The NPA should be used as the vehicle to find funding for the project. (See Section 3.4).

Objective 2: To review the policy, legal and institutional framework to effectively manage the implementation and operation of sewage solutions.

(i) The Water Sector Policy (WSP) was developed in support of the National Industrial Policy (NIP) and completed in June 2000. This policy had as an objective the sewerage of all major towns by 2020. The WSP is articulated through the Water Sector Strategy and Action Plan. Through the NPA LBS/LBA, this plan should be immediately reviewed in light of the issues of the NPA to examine issues of;

- ✓ Enforcing/revising existing legislation re the connection to and fees for sewage treatment;
- ✓ Institutional strengthening of the organisation through training and recruitment;
- ✓ Private sector financing of the construction, operation and maintenance of sewage facilities; and
- ✓ Economic incentives for demand side management strategies.

The review should be a short-term project funded by grant funded through GEF or similar fund as a capacity assessment study whose output will drive the reform of the sewage treatment sector as a whole.

(ii) The collection, analysis and dissemination of data are critical to guide the decision-making within the NPA as well as monitor and evaluate key environmental indicators. The stakeholders agreed to the establishment of a National Environment and Monitoring Programme (NEMP), which would have a number of components and involve a number of agencies.

The United States Agency for International Development (USAID) has supported Jamaica's environmental programmes through three projects, Environment Audits for Sustainable Tourism (EAST), Coastal Water Quality Improvement Project (CWIP) and Ridge to Reef (R2R). CWIP officially ended in June 2003 and R2R will end by 2005. USAID's strategic objective for its environment programme is to '*improve the quality of key natural resources in selected areas that are both environmentally and economically significant*'. Its work through CWIP and R2R has sought to reduce the pollution to the coastal and marine.

USAID will be developing a new environment programme for Jamaica, which will run from 2005-2009. In the interim the Conservation and Action for Sustainable Projects (COAST) will fill the gap. The purpose of the COAST Project is '*to develop pilot integrated management approaches to improve coastal water quality*'. The COAST Project will involve a number of initiatives in water quality monitoring. **Intermediate Result 2: Develop a Blue Flag beach marina certification programme for selected pilot sites, supported by a national water quality monitoring programme** will be the basis of the NEMP. It will develop on NEPA's proposed National Water Quality Programme and Strategy of July 2002. In addition, it will be the basis of further partnering with USAID to provide support for the NEMP in its 2005-2009 environmental programme.

Objective 3: To expand and improve public education on the effect of sewage on the environment and to provide cost effective alternatives sewage treatments.

(i) The issue of public education is an overall objective of the NPA. The Ocean and Coastal Zone Policy, which was prepared by the National Council on Ocean and Coastal Zone Management (NCOZM) contains a detailed action plan. In the plan, **Programme Area 6: Public Education** has identified three projects (**Annex IV**), which deal with:

- Preparation of Instructional Materials for Environmental Education and Awareness – a five year project valued at US \$ 742,500
- Incorporating Studies on Environment and Coastal Issues and Training of Teachers to Teach Courses on Environment and Coastal Management – a five year project valued at US\$26,950
- Developing Non-Formal Methods of Promoting Coastal Management Education and Awareness – a five-year project valued at US\$ 38,500.

These projects will be incorporated within the NPA and executed through NEPA the National Focal Point for the NPA, with the support of National Environment and Education Committee (NEEC) and the Ministry of Education (MOE).

(ii) NEPA currently houses the National Environment and Education Committee (NEEC) whose mandate is *to guide and mobilise environmental education in support of sustainable development in Jamaica*. The Programme has several elements including national public awareness. The membership of is broad based.

NEEC's work has received some funding support from the CIDA/ENACT Programme. CIDA is soon to be writing a new environmental programme for its work in Jamaica. Additionally, the country is soon to embark on a National Capacity Self Assessment Project (NCSA) funded through UNEP/GEF, one of the elements of the fifteen (15) month project will be an evaluation of the capacity issues surrounding environmental education which has been identified as a significant cross cutting issue for the environment sector as a whole.

Through alliances with the Environmental Foundation of Jamaica (EFJ), CIDA and UNEP/GEF Jamaica will develop and implement a public education programme, which will deal with the issue in a holistic rather than piecemeal fashion. The issue of public education will be projectised into a short to medium term project the outcome of which must result in the strengthening of institutional capacity to sustain the effort.

3.3 Agricultural Practices (soil conservation, pesticides and fertilizer usage)

A. Objective 1: To reduce and minimise soil loss.

(i) The Ministry of Agriculture's Medium Term Agricultural Production Plan 2002-2004 is relatively silent on the issue of soil conservation except in terms of reference to the Forestry Plan and some land husbandry issues. This area of soil conservation has been identified as a gap, which will require a renewed focus in the context of the NPA LBS/LBA.

There are some existing project mechanisms, which may help to support some initiatives in the context of sustaining productive soils by preventing/minimising soil loss. With leadership from the Ministry of Agriculture (MOA) through its Rural Physical Planning Division and Rural Agricultural Development Agency (RADA) a project/programme will be developed to integrate and revitalise the soil conservation focus within the Ministry. The project will have a capacity building for example training, documentation and research component as well as an operational aspect through RADA and MOA extension services. The project should be considered as a high priority pilot project within the NPA because it has implication not only for reducing the sediment loading to the marine environment but also nutrients from fertilisers and pesticide residues. The Agricultural Support Services Project (ASSP) is a four-year project that commenced in 2001 and is valued at US\$ 31 million. Through its Agricultural Research Facility funding can be allocated to soil conservation efforts. Another funding source is through the European Union (EU) Banana

Support Programme – Water Management Project. The EU project will end in the year 2008 and greater emphasis can be placed on the issue of soil conservation in the remaining years.

(ii) Tree planting has identified as one of key strategies to reduce and minimise soil loss. The Forest Management and Conservation Plan 2001 articulates a comprehensive eleven point strategy to deal with forestry management. One of its goals - Goal 3 is to *Restore Tree Cover* by supporting the following activities:

- Reforestation
- Survey Crown Land for Leasing
- Establish nursery system
- Operate nursery system
- Develop and implement research programme
- Mining and reclamation support
- Mangrove protection and restoration

The Plan has in part been supported by CIDA through the Trees for Tomorrow Project. However, its implementation has been stymied by inadequate funding. Goal 3 was estimated to cost J\$395 million over five years (US\$ 7 million). This component should be extracted, reviewed and developed as a project through the NPA and could be considered as a pilot project. The execution of this project would also fulfil a goal within the National Strategy and Action Plan on Biological Diversity in Jamaica (NSAPBD) (**Annex V**).

B. Objective 2: To reduce pesticide and fertilizer contamination of waterways that discharge into the coastal zone.

(i) The NSAPBD has also identified a project, which has been given a rating of highest priority with the plan *'the reduction of pollution in fresh water and marine environments'* (**Annex VI**). The objective is to reduce the current level of pollution in streams, rivers and the near shore marine environment by the reduction and control of agricultural run-off and deliberate discharge of industrial waste, domestic waste (sewage) and other waste. It is scheduled to take two years.

(ii) The MOA will formalise its policy on Integrated Pest Management with the supporting programmes for effective implementation. This programme will be funded through GOJ recurrent expenditure.

(iii) The Ministry of Agriculture and the relevant boards, Sugar Industry Research Institute (SIRI), the Banana Board and others will be part of the NEMP discussed in Section 3.2.

C. Objective 3: To review the policy and legal framework to effectively manage the importation, packaging, distribution and application of pesticides and fertilizers.

(i) The Land Policy is still to be finalised and within the management structure of the NPA guidance will be given to its finalisation in light of issues of IPPM Policy. The MOA will work closely with the Ministry of Health (MOH) Pesticide Control Authority (PCA) and the Ministry of Land and Environment (MLE).

D. Objective 4: To expand and improve targeted education of the agricultural sector.

(i) The training of farmers is an ongoing exercise through the College of Science and Agriculture and the GOJ extension services. However, there is a significant gap between best practice and existing cultural practices particularly as it relates to soil conservation (husbandry), use of fertilisers and pesticides. A project will be developed to focus on this deficiency across the agricultural sector but targeted at small to medium sized hillside farmers.

3.4 Collection and Disposal of Solid Waste

Objective 1: To expand and improve the solid waste collection network.

Objective 2: To rationalise disposal site location and improve disposal site operation.

Objective 3: To review the policy, legal and institutional framework to effectively collection, disposal and management of solid waste.

(i) All of the objectives, which have been identified within this priority area can and will be addressed within the National Solid Waste Management Project Phases 1 and 2. Although there may need to be some adjustments in the areas of implementation priorities and areas of emphasis than in the present construct of the project. For example, the closure of disposal sites adjacent to coastal areas should be given a higher priority as too collection services for informal communities situated along gullies and riverbanks. This approach is part of the preventative strategies to minimise pollution as against the 'end of pipe' approach.

Phase 1 of the National Solid Waste Management Project (NSWMP) is funded by the GOJ/IDB to the tune of US\$ 16.5 million dollars. The elements of the project are as follows:

- Institutional and legislative improvement;
- Upgrade of Riverton City landfill (adjacent Hunts Bay) to a sanitary landfill;
- Closure of dump sites;
- Policy on medical waste disposal;
- Site selection and design of regional landfill sites (3) and transfer stations;

The Phase 1 of the project was due to end in 2003 but will be extended to 2004. To date only twenty two (22%) of the funds allocated has been spent resulting in many of the slated outputs not being achieved.

A number of initiatives planned for Phase 1 are in keeping with the objectives and strategies outlined in the NPA. These include (i) development of national solid waste management twenty year plan, (ii) divestment of collection to private sector (private sector investment), (iii) divestment of disposal sites in 5 to 10 years, and (iv) strengthening institutions and legislation.

The failure to advance further has been largely due to inadequate GOJ funding. Given that the NPA is intended to integrate issues and establish a better framework for national development planning. Placed within the NPA as a priority area of action the linkages and holistic view, which comes from the development and implementation of an NPA, should ensure that the National Solid Waste Management Project receives proper funding. It will be one of the remits of the Inter Ministerial grouping, which will have responsibility for the NPA at the highest level of government (Chapter 4).

(ii) Waste reception facilities for ship generated waste for the Port of Kingston the countries busiest port will be implemented. Its establishment will also satisfy the requirements of the 1973 International Convention for Prevention of Marine Pollution from Ships as modified by the Protocol of 1978 (Marpol 73/78). A feasibility study for the facility has already been completed (March 2001). The facility will be designed to handle liquid and solid waste. The responsibility for its construction will be a corporative venture between the Port Authority and Shipping Association of Jamaica and offers an opportunity for private investment. The NPA should be used as a vehicle to find project funding for this venture.

(iii) The National Solid Waste Management Authority (NSWMA) has as one of its mandates data collection. This Authority will contribute to the NEMP, which will be designed to support the NPA as discussed in Section 3.2.

Objective 4: To expand and improve public education concerning solid waste disposal, recovery and reuse and the effect on the environment.

Phase 2 of NSWMP when implemented will focus on the construction of landfill sites and transfer stations. The scope timing and cost of the project is yet to be finalised and any additional issues for example support for public education and training should be incorporated in the project design working with the Ministry of Local Government through the Inter Ministerial Grouping and the National Steering Committee.

Also see Section 3.1 Objective # 3.

3.5 Potential Pilot Projects

The table below list the potential pilot projects.

Table 3 A list of Potential Pilot Projects

Potential Pilot Project	Priority Area/ Supporting Element
1. Rehabilitation & Expansion Harbour View Sewage Treatment System	Sewage Treatment and Disposal
2. Tree Planting Goal 3 To Restore Forest Cover – Forest Management and Conservation Plan (US\$7)	Agricultural Practices (soil conservation)
3. Construction Waste Reception Facility – Port of Kingston	Sewage Treatment and Disposal and Solid Waste
3. Review and Harmonisation of the Policy and Legal Framework	Supporting Element – Policy and Legal
4. Establishment of Clearing House	Supporting Element - Communication

In addition, gaps have been identified in the area institutional arrangements and the need for capacity building and for agricultural practices there are gaps in achieving objectives 1 and 4 and these have been described.

3.6 Timeframe

(to be discussed with NEPA)

CHAPTER 4



4.0 ARRANGEMENTS FOR IMPLEMENTATION

4.1 Institutional Arrangements

Ministerial Support

An Inter-Ministerial Committee (IMC) will be formed under the Chairmanship of the Minister of Land and the Environment. Its membership will be Ministers of Government. The IMC will be guided by the Focal Point and the National Steering Committee with respect to the necessary policy decision, which will be necessary to drive the implementation of the NPA. The Committee's composition will comprise those ministries whose actions are critical to the success of the NPA. It is intended to be the vehicle for effective inter-ministerial coordination and GOJ resource allocation.

The following ministries will be members of the IMC;

- Ministry of Land and Environment
- Ministry of Finance
- Ministry of Water and Housing
- Ministry of Local Government

The IMC will meet at the inception of the project and on a quarterly basis thereafter and will receive programme reports and resolve issues, which may be cross sectoral. The IMC through its Chair will provide quarterly reports to the Cabinet and yearly reports to the parliament on the progress of the NPA.

Lead Agency

The National Environment and Planning Agency (NEPA) has been designated the Lead Agency. The responsibility to coordinate environmental management in Jamaica lies with NEPA, which is an Executive Agency. It represents a merger of a number of organizations formed as part of the modernization process. The Government recognised that urban and rural planning must be done within the context of the wider thrust of environmental management and established the National Environment and Planning Agency. This new agency an arm of the Ministry of Land and the Environment (MLE) represents an amalgamation of the Natural Resources Conservation Authority (NRCA), which has a statutory mandate for the conservation, protection and proper management of the natural resources of Jamaica, the Town and Country Planning Department which has the mandate to ensure the orderly planning of Jamaica, and the Land Development and Utilization Commission.

National Steering Committee (NSC)

There is an extensive network of organisations in the government, private sector and civil society whose input will be essential for the execution of the NPA. The NSC will co-ordinate and oversee the implementation of the NPA and its membership should be both tran-sectoral and interdisciplinary, including scientific, technical and socio-economic experts.

The management framework within which to place the NPA will require the full participation of all stakeholders in their respective roles. Within government interagency cooperation will be of vital importance. In addition, the issue of building capacity in all organization should be one of the strategies employed by the NPA.

There will be private sector representation on the National Steering Committee. The role of the private sector in terms of environmental management is sometimes blurred as they often see themselves as a regulated sector and as a result tends to be reactive rather than proactive. This sector however, is an important link in the NPA both in terms of the technical capacity as well as the opportunity to engage in investments project in the NPA. The challenge will be to fully engage the sector in the development and implementation of Jamaica's NPA and the NSC will be one if not the only mechanism aimed at achieving full participation in the implementation of the NPA.

Civil society including the NGO sector and educational institutions play a significant role within the environmental sector, some NGOs have been delegated responsibility for protected areas. The Universities provide invaluable technical support as well as graduates who work in the environment. Other organizations like the Environmental Foundation of Jamaica (EFJ), professional bodies and CBOs also partner in some way to support environmental management initiatives in the country. Effective representation from all these will be engaged through an agreed mechanism in the work of the NSC.

The membership of the NSC will be drawn from the following sectors.

- ✓ Agriculture
- ✓ Environment
- ✓ Health
- ✓ Housing
- ✓ Land
- ✓ Local Government (Parish Councils)
- ✓ Maritime
- ✓ Mining
- ✓ NGOs
- ✓ Solid Waste
- ✓ Tourism
- ✓ Private Sector
- ✓ Water

Strengthening Capacity

There is a clear recognition that the capacity within all organisations involved in the NPA will need to be strengthened to some degree. Some of these issues will be dealt with in the consideration of programme elements outlined in Chapter 3 and other in outlining the supporting elements mainly policy legal and funding issues. The upcoming NSCA Project will also deal with others such issues. Additionally, within the OCZMP a project as been conceptualised in **Programme Area 4: Human Resources and Institutional Capacity Building** to strengthen local government, NGOs and CBOs which should be implemented (**Annex VII**).

There will be a need careful monitoring of the range of projects to avoid duplication and to ensure all the capacity gaps are adequately addressed.

4.2 Supporting Elements

Policy and Legal Issues

In many ways, Jamaica is at an advantage in developing its NPA because there is a policy, legal and institutional framework on which it can build. This advantage however, also represents a

challenge, as there are gaps in policy, laws and intuitional capacity. There are also issues of roles and responsibilities and overlapping jurisdiction. Perhaps however, the NPA should be viewed as a unique opportunity to development a framework that will strengthen the Jamaica's institutional capacity, policy and legal mechanisms as well as meet some of its international obligations. There has long been the recognition within the country for the need to harmonise policy and strengthen the legislation related to environment and sustainable development issues. The success of the NPA will to a large degree be dependent on the effectiveness of the supporting elements.

The policy and legal issues which underpins the NPA relate to; the requirements to meet the country's international obligations which have some bearing on the protection of the coastal and marine environment from LBS/LBA, local development planning, land use matters, waste management and other environmental concerns. Annex VIII contains a listing of the policy, legislative and international conventions which Jamaica must address and harmonise during the execution of the NPA.

Programme Area 3: Consolidation of Legal, Administrative and Enforcement Framework within the OCZMP identifies a project, which will address the integration of coastal zone issues within the NPA (Annex IX). However, there will need to be a project, which reviews, evaluates and recommends actions on the issues of policy harmonisation. This work should be considered as a potential pilot project.

Funding

Funding has often been the 'Achilles heel' of programme implementation within Jamaica. It will therefore be a key concern of the IMC and NSC. The NSC will designate an Investment Project Task Team (IPTT) will be defined, that will be in charge of preparing project investment profiles for the selected items. Its main task is to secure support from external partners for selected priority actions. Other responsibilities will include:

- Provision of assistance for facilitating project preparation, especially by local stakeholders; and,
- Advisory services during implementation phases.

Consultations with the Inter-Ministerial Committee will be undertaken to ensure GOJ 's support both in recurrent as well as capital budgets. Private sector participation will be actively sought and promoted. Very early in the implementation of the NPA the IPTT will then present the potential intervention/investment projects identified for sign off by the NSC and IMC.

Partners for funding the activities should include:

- International Financial Institutions (IFI) managing portfolios dealing with coastal and marine issues
- IFI currently financing projects in the country
- Regional Financial Institutions currently financing projects in the country
- National Investment Banks
- Planning Institute of Jamaica (PIOJ)
- Private Sector

Additionally, the OCZMP identified approaches to mobilising financing. *Programme Area 2: Programme Preparation, Project Identification and Mobilisation of Financial and Technical Resources* elaborates five (5) projects to address the matter of financing ICZM (Annex X). These projects ideas will be reviewed, expanded or implemented as appropriate but the actions taken will be an integrated one, which is in sink with the approach previously described..

Communication/Clearinghouse Mechanism

Through the Lead Agency, NEPA a clearinghouse will be developed for the NPA, which will provide access to stakeholders and interested parties. It will provide a medium for access to information to local organisations, regional partners, the GPA Secretariat and donor/funding agencies. The development of the clearing house will build on existing information technology capabilities within NEPA but will require additional financial and human resources to be effectively implemented. The provision of these requirements will be projectised and has been identified as a potential pilot project.

4.3 Monitoring and Evaluation

The NSC will monitor the overall goals and objectives of the NPA and the related environmental indicators in the short, medium and long term. The results will be reported annually to the IMC and allow for review and change as is necessary to achieve the overall goals of the NPA.

The execution of NPA is an iterative process, which should:

- ✓ Facilitate accountability
- ✓ Provide an opportunity for review
- ✓ Provide a systematic management framework

Each of the project which are implemented within the NPA will have it own set of performance criteria and outcomes. It will be the responsibility of the Executing Agency to monitor and report on these within a project management framework. These reports will be submitted and evaluated by the NSC in light of the requirements of the NPA and recommendation provided as deemed necessary.

4.4 Continuous Improvement

The Plan, Do Check and Act Management Framework will guide Jamaica's execution and review of the NPA in order to ensure accountability, flexibility and continuous improvement.

The Plan is the NPA document which drives the process at the macro level. The Do will be the actual execution of the NPA, which will involve further planning at the micro level and across sectors and organisations. The Check will involve to a large extent the Lead Agency and the NSC who will review and monitor the NPA along the stated parameters. Given the dynamic and long term nature of the NPA process there will be the need over time to adjust priority areas, objectives and strategies this is illustrated in the Act aspect of the PDCA Management Framework.

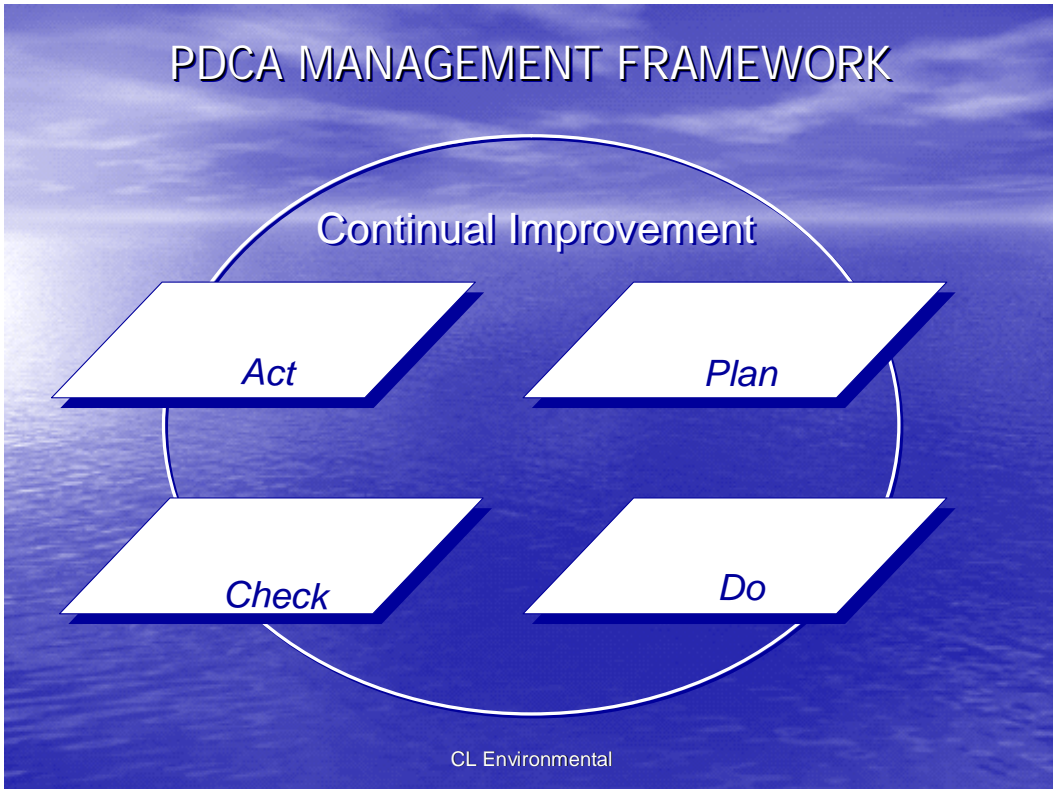


Figure 3 Plan, Do, Check and Act Management Framework

CHAPTER 5



5.0 CONCLUSIONS

The development of Jamaica's NPA has been built on existing policy, legal and institutional frameworks. There is a recognition that the existing frameworks will need to be strengthened and integrated in way, which will allow for effective management of complex cross sectional issues. Although the technical environmental issues present challenges perhaps the most challenging matter will be the implementation of effective mechanisms for the cross-sectorial management framework. That is, the implementation of a cooperative, effective management arrangement, which will ensure that decision making and planning at all levels, achieves the goals of the NPA. Its effectiveness will be an important critical success factor for the NPA. As too will the political commitment to the process.

Priority areas of action were established based on the severity of the negative environmental impact on the environment. The process of developing a 'national project pipeline' for addressing the impact of sewage, agricultural run-off and solid waste on the coastal and marine environment has to a large extent been based on existing projects or project concepts. Additionally, where gaps exist these have been identified to be developed as full scale projects. In many areas pilot projects have been identified for immediate implementation. Finally, the work of the IPTT will be critical in financing projects.

The development of a NEMP will be a key activity, which will better inform the NPA process by providing comprehensive information for decision-making.

A sustained and cohesive public education which will eventually lead to change in behaviour among the country's population will also be important in the implementation of the NPA over the short, medium to long term.

There will be a number of critical next steps in the initial stages of the implementation of the NPA. These could be described as:

- Mobilisation of Lead Agency;
- Establishment of IMC;
- Institution of the management coordination and support mechanism;
- Implement short term projects;
- Monitor existing actions that are deemed adequate; and
- Develop reporting requirements.

ANNEXES

Annex I**List Of Invitees National Workshop**

Ms.	Helene	Coley-Nicholson	"Nature Call"
Mr.	Codrick	Farquharson	Agro Grace Ltd.
Ms.	Carla	Reid	Alumina Partners of Jamaica
Mr.	Condell	Stephenson	APM Terminacs Jamaica Ltd.
Mrs.	Judy	Schoenbein	Appleton Rum Estate
Mr.	Adrian	Strachan	Auditor General's Department
Mr.	Fraser	Beckford	Auditor General's Department
Mrs.	Effie	McDonald	Canada/Jamaica Green Fund
Mr.	Luc	Frechette	Canadian High Commission CIDA
Miss	Janice	Abrahams	Caribbean Bottlers (Ja) Ltd.
Mr	Martin	Howell	Caribbean Cement Company Ltd.
Mr.	Basil	Jones	Coffee Industry Board
Mr.	Timon	Waugh	Coffee Industry Board
Mr.	Louis	Daley	CWIP
Mr	J.J.	Bellamy	ENACT
Ms.	Elecia	Myers	Environmental Foundation of Jamaica
Mr.	Ian	Gage	Environmental Foundation of Jamaica
Mr.	Peter	Knight	Environmental Health Unit, Ministry of Health
Ms.	Jeanne	Bennett	Estate Industries Ltd.
Ms.	Maria	Polo	European Union
Ms.	Nicole	Foga	Foga, Daley & Company
Ms.	Hannah	Clarendon	Food & Agriculture Organisation
Mr.	Albert	McKenzie	Forestry Department
Mr.	Owen	Evelyn	Forestry Department
Mrs.	Dorothy	Gordon-Smith	Garbage Disposal & Sanitation Systems
Mr.	Hudson	Walters	Industrial Chemicals Company

Dr.	Odelley	Henry	J. Wray and Nephew
Mr.	Parris	Lyew-Ayee	Jamaica Bauxite Institution
Mrs.	Nastania	Davis	Jamaica Bauxite Mining Ltd.
Mr.	David	Mair	Jamaica Broilers Cogeneration Plant
Mr.	Wayne	McKenzie	Jamaica Energy Partners Ltd.
Mrs.	Donna	Sharpe	Jamaica Flour Mills
Ms.	Garseth	Gayle	Jamaica Private Power Company
Mr.	Ffrench	Campbell	Jamaica Private Power Company
Mrs.	Michelle	Dunn	Jamaica Public Service Company Ltd.
Mr.	Lindley	Jarrett	JAMALCO
Mr.	Luke	Thomas-Shorter	Kemicals Worldwide Ltd.
Mrs.	Elena	Girvan	Le Meridien Hotel
Captain	Steven	Spence	Maritime Authority
Lt. Com.	Richard	Russell	Maritime Authority of Jamaica
Ms.	Kay-Ann	Williams	Mines & Geology Division
Mr.	Bridget	Lawrence	Ministry of Agriculture
Mr.	Vincent	Campbell	Ministry of Agriculture
Dr.	Richard	Harrison	Ministry of Agriculture
Mr.	Aaron	Parkes	Ministry of Agriculture
Ms.	Cheryl	Gordon	Ministry of Foreign Affairs & Foreign Trade
Mr.	Peter	Knight	Ministry of Health
Mrs.	Donna	Blake	Ministry of Land & Environment
Ms.	Gillian	Guthrie	Ministry of Land & Environment
Mrs.	Anastasia	Calnick	Ministry of Land & Environment
Ms.	Leonie	Barnaby	Ministry of Land and Environment
Mrs.	Jacqueline	daCosta	Ministry of Land and Environment

Ms.	Lorna	Perkins	Ministry of Local Government & Community Dev.
Mr.	Clinton	Thompson	Ministry of Mining & Energy
Ms.	Althea	Johnson	Ministry of Tourism & Sport
Mr.	David	Minott	Minott Services Ltd.
Mr.	Mark	Kerr-Jarrett	Montego Bay Chamber of Commerce & Industry
Ms.	Makeda	Solomon	Montego Bay Chamber of Commerce & Industry
Mrs.	Laleta	Davis-Mattis	National Environment & Planning Agency
Ms.	Cynthia	Vaughn	National Environment & Planning Agency
Ms.	Janice	Ansine	National Environmental Societies Trust
Mrs.	Carole	Excell	National Environment & Planning Agency
Mr.	Shani	Dacres	National Housing Trust
Mrs.	Elizabeth	Stair	National Land Agency
Dr.	Evadne	Williams	National Public Health Laboratory
Mr.	Don	Streete	National Water Commission
Ms.	Cheyenne	Caine	National Water Commission
Mr.	Errol	Mortely	National Works Agency
Mr.	Cliff	Reynolds	Negril Chamber of Commerce
Mr.	Dwight	McKoy	NEPA
Mrs.	Paulette	Kolbush	NEPA
Mr.	Tevor	Ramikie	NEPA
Mr.	Franklin	McDonald	NEPA
Mr.	Dean	Bennett	NEPA
Ms.	Onyje	Chigozili	NEPA- Pud-Ed
Mr.	Percival	Stewart	North Coast Wastewater
Mr.	Garfield	Murray	NSWMA
Ms.	Marcia	Thompson	Pesticides Control Authority
Mr.	G. Alwyn	Brown	PETCOM

Mr.	Gladstone	Ivey	Petrojam Refinery Ltd.
Mr.	Richard	Jones	Petrojam Refinery Ltd.
Dr.	Raymond	Wright	Petroleum Corporation of Jamaica
Dr.	Wesley	Hughes	Planning Institute of Jamaica
Mr.	Hopeton	Peterson	Planning Institute of Jamaica
Mr.	Noel	Hilton	Port Authority of Jamaica
Mrs.	Paulette	Brown	Projects Manager/ NEPA
Mr.	Mark	Nolan	Ridge to Reef
Mr.	Leo	Douglas	Ridge to Reef Project
Mr.	Josef	Forstmayr	Round Hill Hotel & Villas
Mr.	Graeme	Clack	Rugby Jamaica Lime and Minerals Ltd.
Mr.	Neville	Williams	Sanitation Support Unit
Mr.	Nicholas	Shorthose	Shell Company (W.I.) Ltd.
Mr.	Ludlow	Stewart	Shipping Association of Jamaica
Mr.	Garfield	Guy	Texaco Caribbean Inc.
Ms.	A. Sandy	Chung	TPDCo
Mr.	Neil	Denny	TPDCo.
Ms.	Judy	Wheeler	UNEP Caribbean Environmental Programme
Mr.	Luc	St. Pierre	UNEP Caribbean Environmental Programme
Mr.	Tim	Kasten	United Nations Environmental Programme
Mr.	Amani	Ishemo	University of Technology, Building Department
Mr.	Howard	Batson	USAID
Mrs.	Karen	McDonald-Gayle	USAID
Ms.	Natalie	Ferguson	Water Resources Authority
Mr.	Basil	Fernandez	Water Resources Authority

Mr.	Herbert	Thomas	Water Resources Authority
Mrs.	Michelle	Watts	Water Resources Authority
Mr.	David	Wong-Ken	Western Cement Company Ltd.
Mr.	Basil	McFarlane	Western Regional Health Authority
Mr.	Godfrey	Dyer	Wexford Court Hotel
Mr.	Leslie	James	WINDALCO
Ms.	Marcia	Douglas	WINDALCO

LIST OF PARTICIPANTS SECTORAL WORKSHOPS

A. Agriculture Sector

Name	Job Title & Organisation	
Andrea Sweeney	COO	The Jamaica Livestock Ass.
Randolph Watson	Manager, Land Use Branch	NEPA
Errol Jennings	Enforcement Officer	NEPA
Michael Barrett	Regional Officer	Forestry Department (Western)
Albert McKenzie	Senior Director	Forestry, Head Office
David Grapine	Supervisor	Forestry, Western Region
Clarence Fearon	Agronomist	SIRI
Janet Conie	Director of Research	Banana Industry
Wendy Lee	Executive Director	St. Ann Environment Protection Ass.
Robert Logan	Director	Portland Environment Protection Agency
Marcia Thompson	Deputy Registrar	Pesticide Control Authority
Stanley Dodd	Parish Agricultural Manager	RADA- Portland
Nicole Smith	Coordinator	NEPA
Timon Williamson	Sr. Research Director	Bodles Research Station
Norman Baugh	Land Husbandry Officer	RADA
Cornelia Forrester	Env. Officer	NEPA
Kerrine Senior	Env. Officer	NEPA
Roy Wilks	Land Husbandry Officer	RADA
Hugh Graham	Watershed Management Specialist	R2RW
Anita Baker	Ass. Liason Officer	CIB
Timon Waugh	Research and development	CIB

Devon Ricketts	Agr. Extension Officer	RADA
Anthony Patterson	Env. Officer	NEPA
Dillard Knight	Manager, EMA	NEPA

B. Manufacturing, Utilities & Shipping

C. Tourism

D. Waste Management

First name	Last name	Position	Organization
Cheyenne	Caine	Environmental Analyst	National Water Commission
Natalie	Ferguson-Morgan	Hydrologist	WRA
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Ivan	Anderson	CEO	NWA
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Charmaine	Clarke	Editor	The Jamaica Observer
Helene	Coley- Nicholson	Editor	Nature Call
Jacqueline	daCosta	Permanent Secretary	Min. of Land and Environment
Selvyn	Thompson	Conservation Officer	NEPA
Michael	Ward	Manager	Ward's Cesspool Co. Ltd
Marceline	Wheatle		Public Health Depart. Cornwall Regional Hospital
Jill	Williams	Exec, Director	Montego Bay Marine Park
Neville	Williams	Project Coordinator	Sanitation Support Unit
Carlton	Wilson		Westmoreland Parish Development Comm.
Maureen	Rowe	Com. Laison Officer	CWIP
Rowland	Deputy Myor/ Councillor	Portland Parish Council	1 Gideon Avenue Portland
Wilfred	Small		Jamaica 4H Club Eastern Office
Lloyd B.	Smith	Managing	Western Mirror

		Director	
Bentley	Steer	Parish Manager	North east Regional Health authority
Don Streete	Manager Quality Assurance and Environment	NWC	
Dillard	Knight	Manager EMA	NEPA
Barrington	Taylor	Env. Officer	NEPA
Barbara	Quarry	Secretary	Portland Parish Coucil
Gordon	Ramsey	Operations Manager	Western Parks And Market Ltd
Peter	Knight	Environmental Health Unit	Ministry of Health
Phyllis	Reynolds	Acting Chief Education officer	Min. of Education and Culture
Eugene	Richards	System/ Distribution Supervisor	NWC
Theodore	Rhone	Deputy Director	EWS
Randall	Williams	MD	Garbage Disposal And Sanitation Systems
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Donna	Blake		Min of L&E
Gillian	Guthrie		Min. of L&E
Anastasia	Calnick		Min. of L&E
David	Minott		Minott Services Ltd
Tim	Kasten		United Nations Environmental Programme
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Maxine	Johnson	Director Project Administrator	USAID
Loraine	Hosang	Parish Coordinator	Social Development Commission
Anthony	Gooden	Environmental Officer	NEPA
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Annmarie	Rodriques		NSWMA
Garfield	Murray		NSWMA
Ianthe	Smith		NSWMA
Anna	Treasure	President Caribbean Water	Pan American Health

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Rob	Holbrook	Watershed Education Officer	Portland Environmental Protection Agency
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Samantha	Gayle	Environmental Officer	Jamaica Social Investment Fund
Ian	Gage	Manager – Special Project	EFJ
Basil	Fernandez	Executive Director	WRA
Alfred	Farquharson	Custos, Rotulorum, St. Elizabeth	St. Elizabeth Parish Council
Owen	Evelyn	Trees for Tomorrow	Forestry Department
Shani	Dacres		NHT
Onyijie	Chigozilie	Pub Ed	NEPA
Carol	Esson	News Director	HOT 102 FM
Florence	Logan	Regional General Manager	NWC
Donna	Lowe	Watershed and Soil Conservation Officer	Forestry Department
Angella	Manning	Dir. Of Research	Consumer Affairs Commission
Scott	McCormick	Chief of Party	CWIP
Basil	McFarlene	Regional Environmental Officer	Western Region Health Authority
Richard	Meghoo	Senior Scientific Officer	NWC
Peter	Wilson-Kelly	Coordinator	Coastal Zone Mgmt Branch
Learie	Miller	Director	
Melburm	Ming	System / Distribution Supervisor	NWC
Janice	Ansine	Director	National Environmental Societies Trust

Annex II

Table Major Problems Affecting the Marine, Coastal and Freshwater Environments.

Issue	Causes/Consequences
Deforestation	A rate of 3%/yr. Slash- and-burn cultivation and charcoal burning Serious impacts on soil degradation; water siltation and sedimentation; loss of habitats
Water Pollution	Surface, ground and sea waters; health risks Industries; agriculture; mining; watershed degradation; poor sewage system
Watershed Degradation	Poor land use practices Short water supply; land degradation and loss of top soil; sedimentation; impacts on coral reefs and sea grass beds; flooding
Unplanned Human Settlements	Shortage of water and basic services; health risks; solid waste disposal; sewage
Reef Degradation	Water pollution in particular nutrients and sediments; explosives; souvenir collecting; ship anchors; hurricanes and tropical storms
Beach Erosion	Sand mining; coral reef destruction; mangrove cutting
Air Pollution	Main urban centres Refineries; power station; chemical processing facilities, cement plant; bauxite mining and processing; sugar production, other industrial activities; motor vehicles and traffic congestion.
Industry	Non compliance with effluent and emission standards; solid waste dispose in streams and sinkholes
Sources: Environmental Synopsis (1993) & NEAP (1995)	

Annex III

Table List of Action Plans for Jamaica

Action Plans
National Forestry Management and Conservation Plan
Biodiversity National Strategy and Action Plan
National Solid Waste Management Programme
Sustainable Tourism Action Plan
National Environment Action Plan
Coastal Zone Management Action Plan
Kingston Harbour Rehabilitation Project
Port Antonio Master Plan
Jamaica Coral Reef Action Plan
Blue Flag Programme
South Coast Tourism Development Plan

Annex IV

Program Area 6: Public Awareness and Education

Levels of public awareness in Jamaica are very low and pose a serious threat to the realization of the general objectives relating to integrated coastal zone management. Increased public awareness is needed, not only for the wider understanding of integrated coastal zone management, but also for reducing threats to it, and for human resource development.

The program will support activities leading to the preparation of instructional material, formal and informal training of citizens, and the training of trainers.

Project 13: Preparation of Instructional Material for Coastal Environmental Education and Awareness Programs

Objective

- To provide the relevant material for guidance of students, instructors, drafters of curricula and syllabuses, as well as producers of audio-visual and non-formal educational aids.
- To prepare instructional material for non-formal community education.

Activities

- Review the existing syllabuses with a view to including coastal environmental issues.
- Conduct a survey of the existing environmental education and environmental promotional activities in the following areas:
 - Education
 - Government agencies involved in the management of marine environment
 - Police force
 - Judiciary

The above survey will include the level of infrastructure that exists for environmental promotional activities.

- Prepare instructional materials for educational institutions as well as, the various entities mentioned above.
- Regular review and update of the education material.

Scope

National – to inform all programs.

Timing/Duration

The project should start at the beginning of the program (year 1), so that material would be available to service the other projects. It is conceived as on going, covering the entire duration of the Action Plan, i.e. 5 years in this instance.

Overall Responsibility

Council, Ministry of Education

Secondary Responsibility

NEPA, AGD, JDF, UWI, CMI, UTECH, EFJ, local government administrations

Budget (5 years)	US\$
Project coordinator	by relocation
Survey/research	5000
Salaries of teachers (5)	450000 (@US\$ 1500/month x 5 years)
Teacher trainer (1)	120000 (@ US\$ 2000/month x 5 years)
Salary of science writer (1)	90000 (@ US\$ 1500/month x 5 years)
Salary of coordinator	filled by relocation
Travelling & subsistence (Coordinator & trainers)	10000
Workshops (5)	7500
Material	5000
Contingency (10%)	68750
TOTAL	756,250

Performance indicators

- Early formation of multidisciplinary team
- Compilation of relevant environmental data
- Production of instructional material

Means of verification

- Multi-disciplinary team constituted.
- Mechanism established for garnering of information on coastal resources.
- Timely production of materials required to implement projects in program.

Project 14: Incorporating Studies on Environment and Coastal Issues and Training of Teachers to Teach Courses on Environment and Coastal Management

Objective

- To ensure that pupils/students of all schools receive formal instruction on the nature and value of coastal resources and on the inter-relationship between sustainable use of coastal resources and the coastal environment. Non-formal approaches may also

be pursued, where these may help to reinforce concepts covered in the formal syllabus.

- To train teachers to teach the courses on environment and coastal issues adumbrated in project above.

Activities

- Develop recommendations for the integration of environmental education into school curriculum.
- Promote use of distance education methods as a training tool.
- Periodical monitoring of environmental awareness levels including sociological research to study the efficiency of environmental awareness and promotion measures.
- Organize a national environmental studies competition, contest, and quizzes on annual basis.
- Include a chapter on promoting environmental education and public participation in the State of the Environment Report (published by NEPA / NRCA).
- Conduct advanced environmental education training for teachers (including pre-school).
- Conduct nature conservation and environmental protection courses at UWI (basics for all faculties, specific courses obligatory for obtaining teachers qualification).
- Development of teaching materials for primary and secondary schools in accordance with the principles of environmental education.
- Creation of advanced teaching materials for teachers and journalists.
- Stimulate interdisciplinary environmental training in pedagogy and behavioural sciences.
- Training of members of NGOs.
- Identify capacity needs of agencies that will be responsible for training personnel from public and private sectors.

Scope

- This project is conceived as one that is national in scope, involving the entire formal education system.
- A survey of curricula of schools will be undertaken to determine the extent to which coastal management issues are addressed, and to recommend changes, which would help to achieve project objectives.

- With the collaboration of the Ministry of Education and relevant NGOs, pilot projects will be instituted to ensure viability of the proposed course/subject offerings.

Timing/Duration

It is intended that this project will be introduced from the inception of the program and will cover the entire period in Phase I and Phase II.

Overall Responsibility

Council, Ministry of Education

Secondary Responsibility

UWI, CMS, NEPA, MA, MLE, EFJ, NGOs

Budget (5 years)	US\$
Workshops (5)	7500
Honoraria for instructors	15000
Project coordinator	filled by relocation
Local travel for coordinator	5000
Materials	2500
Contingencies (10%)	3000
TOTAL	33,000

Performance Indicators

- Establishment of task force drawn from local parties.
- Progress reports on development of curricula and syllabuses.
- Syllabus for training of teachers on issues of coastal environment implemented by the schools/UWI.

Means of Verification

- Task force constituted, periodic reports (6 monthly) of task force submitted, progress reports on curriculum and syllabus reforms.
- Progress reports on performance of teacher trainees submitted in a timely manner.
- Adjustments to syllabus based on progress reports.

Project 15: Developing Non-Formal Methods of Promoting Coastal Management Education and Awareness

Objective

- To provide a vehicle for the rapid and effective dissemination of information on the role of coastal management in conserving coastal resources at all levels.

(The project is intended to complement formal programs of instruction on the same theme, so that the general population may become aware of coastal management

issues and thereby contribute to conservation and responsible use of coastal resources).

Activities

All the activities noted below are geared to involve the public at large in the short-term that will help in a change of attitude in the long-term. However, the long-term goal can only be achieved when the activities below are not a one-time exercise but a continuous and a regular process.

- Organize regular radio program linked to radio news (e.g. “the most important coastal environmental event of the week”).
- Publish local coastal environmental information maps.
- Organize regular forums and dialogues between the NGOs and the Government.
- Study the scope of garnering financial support for environmental activities and environmental studies coordinated by NGOs.
- Establish an NGO advisory panel at the Ministry of Environment.
- Encourage private enterprises to support the activities of NGOs with financial and non-financial means (e.g. renting of bus, making it possible to use their equipment etc.).
- Create an association of environmental journalists.
- Provide training and education for outside parties to mediate/facilitate/arbitrate in disputes, with schemes and guidelines for the recognition of qualified mediators/facilitators/arbitrators.
- Identify courses and programs suitable for managers and decision-makers.
- Educate and motivate people to connect to the sewage system.
- Promote awareness of the need to preserve cultural and archaeological heritage sites.
- Promote alternative tourism options such as eco-tourism, heritage and community based tourism.

Scope

National

Timing/Duration

The project is recommended for immediate implementation and will continue for the duration of the plan.

Overall Responsibility

Council, Ministry of Education

Secondary Responsibility

UWI, UTECH, CMI, NEPA, EFJ, NGOs

Budget (5 years)	US\$
Local project activities	20000
Coordinator	filled by relocation
Travelling and subsistence	10000
Materials	5000
Contingency (10%)	3500
TOTAL	38,500

Performance Indicators

- Reports on workshops and seminars conducted by sectoral agencies, regional and local administrations
- Preparation and distribution of flyers, brochures, posters and other public education campaign materials, use of electronic and print media in propagation of information to public.
- Efforts of NEPA to train local “facilitators” and produce visual aids to promote awareness at the level of communities, and involvement of community members in preparation of local coastal resource inventories.

Means of Verification

- Workshops and seminars conducted.
- Information literature prepared and distributed, and media participation secured.
- Community involvement stimulated by “facilitators” trained by NEPA.

Annex V

Goal 1 Conserve Biodiversity

Title: Declaration of Forest Reserves

Lead Agency: Forestry Department

Supporting Government Agencies: Ministry of Agriculture, Ministry of Land and Environment, National Environment and Planning Agency

Other Partners: Suitable organisations in civil society

Objective: To declare as forest reserves all outstanding areas of Crown Lands not yet declared, and privately owned lands as appropriate.

Rationale: There are forest areas that are Crown Lands, currently managed by the Forestry Department, which have not yet been declared as forest reserves. The CBD states that *in-situ* conservation is a fundamental requirement for the conservation of biodiversity. Establishment of protected areas is a priority and the establishment of forest reserves will assist the conservation of essential forest resources by providing regulatory control over its use and development.

Specific Activities: Specific activities are required in sequence: identification of Crown Lands not yet declared forest reserves; assessment of areas to be declared as protected; assessment of privately owned unprotected natural forests; survey and demarcation of these areas; declaration of outstanding forested Crown Lands as forest reserves; declaration of privately owned natural forests, as appropriate; preparation of guidelines for declaring forest protected areas; identification of suitable partner organisations; preparation and signing of co-management agreements.

OUTPUT	Year 1	Year 2	Year 3
Crown lands and private forests reviewed	X	X	--
Lands surveyed and demarcated	X	X	--
Outstanding areas declared	X	X	X
Legal instruments prepared	--	--	X
Co-management agreements prepared	--	X	X
Guidelines for declaring forest protected areas developed	--	X	--

Goal 1 Conserve Biodiversity

Title: Rehabilitation of Degraded Forests

Lead Agency: Forestry Department

Supporting Government Agencies: National Environment and Planning Agency, Rural Agriculture Development Authority, National Irrigation Commission, National Water Commission, Fire Department

Other Partners: Suitable organisations in civil society, environmental non-governmental organisations, landowners groups and committees

Objective: To rehabilitate existing degraded forests including reserves.

Rationale: Many forest reserves have suffered from the effects of illegal settlement, clearing for small-scale agriculture, and unsustainable harvesting practices. It is essential that these areas are identified and an effective reforestation/rehabilitation programme be put in place to prevent further degradation of these areas.

Specific Activities: Identification of degraded areas; survey and assessment of degraded areas; prioritisation of degraded areas; preparation of a rehabilitative programme for degraded areas; systematic implementation of rehabilitative programmes.

OUTPUT	Year 1	Year 2	Year 3	Year 4	Year 5
Survey, assessment, identification and prioritisation of degraded areas	x	x	x	x	x
Community consultation held	--	x	x	x	--
Rehabilitative programme developed and implemented	--	--	x	x	x

Annex VI

Goal 1 Conserve Biodiversity

Title: Reduction of Pollutants in Freshwater and Marine Environments

Lead Agency: National Environment and Planning Agency

Supporting Government Agencies: Ministry of Land and Environment, National Water Commission, Ministry of Health, Urban Development Corporation

Other Partners: Ministry of Agriculture, Water Resources Authority, community-based organisations, University of the West Indies

Objective: To reduce the current level of pollution in streams and rivers and the near-shore marine environment, by reduction and control of agricultural run-off and deliberate discharge of industrial waste, domestic waste (sewage) and other waste into these environments.

Rationale: High levels of agro-chemical residues; waste from agro-industries; discharge from shore-based industries and sewage disposal, all contribute to degradation of the aquatic environment and reduction of habitat quality for the organisms that live in these systems. In addition persons who depend on these systems for potable water sources are affected. Pollutants are introduced from terrestrial run-off or direct discharge into the marine environment, rivers or sinkholes. Discharges must be regulated and all effluent disposers licensed and monitored. This project builds on initiatives already in place, which address the problem of polluted coastal waters, i.e., The Natural Resources Conservation Authority (NRCA) Coastal Water Quality Improvement Programme (CWIP), the Kingston Harbour Rehabilitation Project and the NRCA Permit and License System.

Specific Activities: Specific activities will include chemical analysis of selected rivers and streams and near-shore sites; licensing of all effluent disposers; regulation of disposal methods, sites and quantities; biomonitoring; preparation of a monitoring programme for chemical levels in conjunction with analysis of biological effects; and increased penalties and fines for offenders.

<i>OUTPUT</i>	Year 1	Year 2
Survey and analysis of rivers, streams and coastal sites conducted	X	--
Effluent disposers surveyed and licensed	--	X
Current disposal regulations reviewed, including establishment of increased penalties and fines for offenders	X	--
Monitoring programme developed and established	--	X
Disposal practices monitored	--	X
Major sources of pollution identified and assessed	X	--
Impacts of agro-chemical pollution identified	X	--

Annex VII

Core Policies

NEPA's CORE BUSINESS AREA	POLICY RESPONSES	INSTITUTIONAL RESPONSIBILITY/COMMENT
Land Development and Spatial planning	<p><u>CORE POLICIES REVIEWED</u> National Physical Plan Regional Framework for Planning Land Policy</p> <p><u>OTHER POLICIES</u> National Industrial Policy Mining and Quarrying Policy</p>	<p>NEPA NEPA Ministry of Land & Environment</p> <p>Ministry of Local Government Ministry of Land & Environment</p> <p>Indicates importance of incentives Being prepared</p>
Management & Conservation of Environmental Resources	<p><u>CORE POLICIES REVIEWED</u> Beach Policy Ocean and Coastal Zone Management Protected Areas National Strategy on Biodiversity Watershed Policy National Policy for the Conservation of Sea Grasses Mangrove and Coastal Wetlands Policy Coral Reef Protection and Preservation Policy Mariculture Policy Protected Animals in Captivity Policy</p> <p><u>OTHER POLICIES</u> Energy Sector Policy Water Sector Policy National Solid Waste Policy Policy Framework for the Management of Plastic Packaging Material and Hazardous Waste for Jamaica National Forest Management and Conservation Plan Master Plan for Sustainable Tourism Development</p>	<p>NEPA</p> <p>Ministry of Foreign Affairs NEPA NEPA NEPA NEPA NEPA NEPA NEPA Ministry of Foreign Affairs/NEPA</p> <p>Requires NEPA's support Requires NEPA's support Requires NEPA's support</p> <p>Requires NEPA's support Requires NEPA's support Requires NEPA's support</p>
ENVIRONMENTAL PROTECTION	<p><u>CORE POLICIES REVIEWED</u> Environmental Management Systems</p> <p><u>OTHER POLICIES</u> Sewage Connection Policy</p>	<p>NEPA</p> <p>Policy already implemented by NWC</p>

Source Policy Analysis Report, March 2003

Principal Environmental Laws

Environmental Law	Authority
Natural Resources Conservation Act	To protect and manage natural resources and control pollution
Watersheds Protection Act	Watersheds protection
Public Health Act	Environmental health; waste management; pollution control
Clean Air Act	Control of air pollution
Forest Act	Declaration and management of forest reserves
Solid Waste Management Act	Control of solid waste
Water Act	To establish board and water courts
Underground Water Act	To protect underground resources
Beach Control Act	Control of sand removal from beaches
Wildlife Protection Act	Control hunting of wildlife/ noxious waste
Marine Park Regulations	To establish national parks and protect their resources
Mining Act	Control of mining
Petroleum Act	Control of petroleum as a hazardous substance
Quarries Control Act	Control of quarrying activities
Town and Country Planning Act	Physical planning and building control
Land Utilisation Act	Land use planning and development control
Local improvements Act	Amelioration of poor infrastructure amenities in communities
Urban Development Corporation Act	Urban physical planning and development
Pesticides Act	Control of importation, use and disposal of pesticides
Litter Act	Control of litter in public places
Harbours Act	Control of harbour pollution (oil spills)
Shipping Act	Control of shipping
Source: NEAP (1995)	

Existing International Environmental Agreements Relevant to the Development of Jamaica's NPA

Name	Ratification ®/Accession (A)	Focal Point
United Nations Convention on Law of the Sea	March 1983 (R)	Ministry of Foreign Affairs
Convention on the Prevention of Marine Pollution by Dumping Waste (IMO)	March 22, 1991 (A)	Maritime Authority
International Convention on Oil Pollution Preparedness, Response and Cooperation	September 2000 (A)	Maritime Authority
International Convention for the Prevention of Pollution from Ships (MARPOL)	June 13, 1973 (A)	Maritime Authority
Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention)	April 1, 1987 (R)	National Environment and Planning Agency
United Nations Framework Convention on Climate Change (UNFCCC)	April 5, 1995 (R)	The Metrological Service
United Nation Convention on Biological Diversity (UNCBD)	January 6, 1995 (R)	National Environment and Planning Agency
Convention on Wetlands of International Importance (RAMSAR)	October 7, 1997 (A)	National Environment and Planning Agency
United Nations Convention to Combat Desertification/Land Degradation (UNCCD)	November 12, 2007 (A)	Ministry of Water and Housing

Annex VIII

Program Area 4: Human Resources and Institutional Capacity Building

Jamaica's public and private sectors and NGOs experience a shortage of expertise in areas related to coastal zone management. Institutional capacity is weak throughout the sectors that will eventually be involved in the integrated management of the coastal zone. Together, these two realities combine to present a serious obstacle to the achievement of the national goals relating to the management of the coastal zone.

The program will address these weaknesses by developing human resources and institutional capacity for the management of the coastal zone. Capacity will be focused at the central level and will be complemented by a program of public awareness and education. A more fundamental purpose of the activities under this program is to help ensure that there is capacity for the implementation of the Action Plan.

Project 10: Strengthening of Local Government, NGO and Community Organizations

Objectives

- To strengthen the capabilities of local government, non-governmental agencies and community organizations to plan their coastal management priorities.
- To strengthen the capabilities of local agencies to assist in the implementation of projects identified in the action plan.

Activities

- Central government to oversee strengthening of local government agencies because only when local government is involved can the policy be implemented effectively.
- Human resource capacity building – Training NGOs, Local government and community leaders in each Parish
- Training in sourcing of funds
- Convene local meetings (Parish Coastal Zone Management Committees) on the Action Plan (for the purposes of education, orientation, implementation and sharing knowledge) with:
 - Representatives of the Parish council,
 - Local/municipal organizations
 - Local NGOs
 - Community Groups
- Convene short fund-raising, training and project planning workshops for these local organizations
- Implement a pilot project on integrating coastal management into local planning
- Upgrade local institutional capacity for technical assessment and enforcement to monitor water quality

- Develop partnerships between NGOs, local government and local community organizations to identify and disseminate best coastal management practices.
- Train in enforcement of laws.
- Convene meetings with groups from two or more parishes to share ideas.

Scope

Parish Councils

Timing/Duration

At the end of year 1 of Phase I to beginning of Phase II (Years 2 to 3)

Overall Responsibility

Council, NEPA

Secondary Responsibility

Parish Councils, community groups, NGOs

Budget (2 Years)	US\$
Project coordinator	to be filled by relocation
Pilot project leader	to be filled by relocation
Community organizer specialist	48000 (US\$ 2000/month x 24 months)
Workshops (2)	3000
Pilot project (1)	5000
Miscellaneous	1000
Budget (2 Years)	US\$ (...Contd.)
Contingencies (10%)	5700
TOTAL	62,670

Performance Indicators

By the end of Phase 1, the completion of:

- Commencement of pilot project
- Workshops
- Educational outreach activities

Means of Verification

Progress report on each of the following:

- Pilot project
- Workshops
- Educational outreach activities

Annex IX

Program Area 3: Consolidation of Legal, Administrative and Enforcement Framework

The legislation relating to integrated coastal zone management is fragmented and incomplete in so far as the integration of various sectors is concerned. The policy and legal foundations are basic to the development of other initiatives, and therefore, would require priority attention.

The program includes actions that involve the comprehensive review of national legislation, policy and programs that affect the coastal zone with a view to making them compatible with national needs and concerns relating to integrated coastal zone management. It will also address protection and compensation of local knowledge on coastal management.

Project 9: Comprehensive Review and Updating of National Legislation Relating To Coastal Management

Objectives

- To review and upgrade national capability to regulate access to and use of coastal resources and to integrate the efforts of coastal zone management.

Justification

The legal and institutional framework for integrated coastal zone management in Jamaica is fragmented. Government departments and agencies, as well as private sector are often in competition or conflict with each other over their differing roles and interests. Although, Jamaica is an archipelago, land and development issues have often been treated as more important than, and even separate from, water and coastal issues. And, the importance of the richness and variety of the seawater resources has not always been fully appreciated resulting in inadequate legal and financial support for initiatives to conserve those resources and keep them sustainable for the future.

Activities

- Development of a broad-based Coastal Zone Management Act to be considered in the long run which, would take into account linkages with other key environmental and natural resources laws (i.e. fisheries, forestry, agriculture, land etc.)
- Role of fisheries department regarding coastal zone management and planning coordination to be clarified and better defined to ensure the protection and enhancement of both the coastal zone area and fishery resources in the Act
- The role of the Council on Ocean and Coastal Zone Management is to be clarified in the Act taking into account the Centre of Excellence and the Council's Secretariat as the focal point for implementation of the Policy.
- The role and involvement of local planning authorities and Parish Councils, as well as NGOs and general public is to be strengthened and formalized in the Act.
- Develop a framework for accountability for responsible agencies
- Implementing legislation for Public trust doctrine as regards coastal zone (Common Heritage of Jamaicans)

- Allow NGOs and community groups to have locus stand in respect of advocacy for natural resources.
- Develop legislation to incorporate the provisions of international conventions on prevention of pollution from ships (MARPOL, London Convention, OPRC, CLC, and FUND Conventions).
- Develop legal provisions to support certification of sea and airports under ISO 14000.
- Support initiatives for revision of contingency plans.
- Develop rules that govern Alternative Dispute Resolution.
- Ensure by law that a cost-benefit analysis (including environmental costs) is carried out for prospects such as for any port expansion.

Overall Responsibility

Council

Secondary Responsibility

AGD, UWI, NEPA / NRCA, CMS, SRC, MAJ, PAJ

Budget

Nil (in house)

Timing/duration of implementation

By the end of Phase I.

Annex X

Program Area 2: Program Preparation, Project Identification and Mobilization of Financial and Technical Resources

The present level of Jamaica's human and financial resources makes it necessary to seek additional financial and technical resources to develop capacity necessary to implement the policy and the action plan. The achievement of this target will require the mobilization of considerable financial and technical resources. This program is therefore very critical for the implementation of the entire plan and will be given absolute priority in the early stages of this phase. The program will seek different sources of funding for the activities making up the Action Plan and establish mechanisms for financing the integrated coastal zone management in the long run.

Project 3: Elaboration of Program Areas

Objectives

- To source skills to implement the projects.
- To prioritise the projects.

Activities

- Create and fill a position of project development specialist with the Council (Secretariat). The responsibilities of this position are to elaborate each program area, identify the staff, equipment and other materials required to achieve those objectives within a specified time frame.
- Design and apply methodologies and indicators for monitoring and evaluating project progress.

Timing/Duration

First six (6) months in Phase I

Overall/Secondary Responsibility

Council

Budget (6 Months)	US\$
Project development specialist	12,000 (US\$ 2000/month x 6 months)
Computer	1,500
Travel	500
Research costs	3,000
Communication	3,000
Contingencies (10%)	2,000
TOTAL	22,000

Performance Indicator

- At the end of first six months of the implementation of the plan, the completion of:
- Project documents relating to the Policy and this Plan.

Project 4: Ensure Short and Long-Term Financing and Sustainability of the Action Plan

Objectives

- To source the skills to obtain short and long-term financing for sustainability of the Action Plan.
- To design and implement sustainable financing mechanisms for plan implementation.

Activities

- Create and fill the position of fund raising specialist with the Council. The responsibilities of this position are to identify projects and obtain financial and technical support for the projects under the action plan.
- Develop the following categories of initiatives (by the fund raising specialist):
 - Mobilization of financial resources from national sources:
 - Public
 - Private
 - Community
 - Mobilization of financial resources from the sustainable use of coastal resources and other innovative funding mechanisms
 - Mobilization of financial resources from the international donor community:
 - Public
 - Private
 - Creation of a coastal management trust fund
 - Up-grade skills of counter-part to the fund raising specialist through participation in key training workshops (e.g. GEF project development workshops).

Duration/Timing

Immediate and, throughout Phase I of the plan.

Overall/ Subordinate responsibility

Council, NEPA

Budget (Two years)	US\$
Fund raising specialist	60,000 (US\$ 2500/month x 24 months)
Equipment	covered under project 2
Computer	covered under project 2
Training of counterpart	5,000
Travel	3,000
Research costs	3,000
Communication	15,000
Contingencies (10%)	8,600
TOTAL	94,600

Project 5: Mobilization of Financial Resources from National Inputs

Objectives

- To obtain necessary financial support for integrated coastal management initiatives.
- To complement the local investment, encourage foreign donor support in coastal resource conservation.

Activities

- Review of opportunities by fundraising specialist. Areas to be examined include:
 - Community inputs: in-kind contribution (knowledge, information, and labour)
 - Private sector: funds and in-kind contribution (sponsorship of activities, green investment funds, “adopt-a-beach/forest” schemes; lottery proceeds)
 - Non-governmental: funds and in-kind contribution
 - Governmental: increased government budget
- Develop demonstration projects to test selected priorities
- Accessing and administering funds
- Design and indicators for monitoring and evaluating impacts.
- To upgrade the level of contingency planning in terms of equipment and training of personnel.

Duration/Timing

Six months after the implementation of Phase I; throughout Phase II

Overall Responsibility

Council, NEPA

Secondary Responsibility

PAJ, MAJ, SAJ, SRC, CAA, MTW, AAJ, NRCA, WRA, NWC, PAJ, FD, UWI, RADA, MOH, PCs, MPM, SWMA, MGD, EHU, NGOS

Budget (Five years)	US\$
Fund raising specialist	covered under project 4
Project coordinator	filled by relocation
Local travel	5000
Research	5000
Communication	covered under project 4
Workshops (3)	4500
Demonstration project	5000
Contingencies (10%)	1950
TOTAL	21450

Performance Indicators

- Expenditure reduction through reduction of duplication of effort, streamlining activities, and strategic actions to ensure maximum mileage by the coastal management coordinator

Project 6: Mobilization of Financial Resources from International Donor Community

Objectives

- To encourage donor investment in the integrated management of Jamaica's coastal zone.
- To use the donor investment as a basis to develop project documents for the priority elements of the plan.

Activities

- Identify multilateral, bilateral, and private donor agencies to be targeted.
- Convene meetings with the pertinent agencies to match their interests with project priorities.
- Prepare project proposals.
- Strengthen abilities of members of the Council, agencies and groupings involved in coastal management (including public, private and community) to seek their own funding for integrated coastal management activities. This will include covering a series of proposal preparation and fundraising workshops.

Duration/Timing

Immediate; throughout Phase I and Phase II

Overall/Secondary Responsibility

Council, NEPA

Budget (Five years)	US\$
Fund raising specialist	covered under project 4
Meeting with donors (individually and collectively)	1500
Workshops – 3 (project preparation and fundraising)	4500
Research	3000
Follow up with agencies	1000
Communication	15000
Contingencies (10%)	2500
TOTAL	27500

Project 7: Review of Incentives and Disincentives for Conservation and Sustainable Use of Coastal Resources

Objective

- To review incentives and disincentives and thereafter put in place incentive measures that would be economically and socially beneficial and contribute to the conservation of coastal resources.
- To develop mechanisms to return profits from the sustainable use of coastal resources to the management of coastal resources i.e. bridge the gap between the private benefits and the costs of conservation.

Activities

- Review opportunities and methodologies developed by fund raising specialist.
- Select priorities in light of Jamaica's specific cultural and social context.
- Develop pilot projects to test selected priorities.
- Design and apply methodologies and indicators for monitoring and evaluating impacts.
- To utilize returns from nature tourism.
- Regularize local markets for sand to reduce illegal sand mining.
- Conduct a feasibility study for the development of cooperatives within the small-scale industry sector to utilize semi precious stones and marbles.
- To study the economic implications of tax incentives to promote the establishment and preservation of protected areas.
- To study the economic implications of channelling the user fees, taxes, fines, levy and surcharges into the ICZM program.
- Provide incentives to encourage parties to negotiate and utilize alternative conflict resolution.
- To study the financial implications of developing an award system for the sectors that are certified under ISO 14000.

Scope

Incentive measure to be reviewed and considered under the project will be national in scope.

Timing/Duration

Six months after the start of implementation of the Plan and throughout Phase II.

Overall Responsibility

Council, NEPA

Secondary Responsibility

Ministry of Finance, Fisheries Division, Agriculture Department, Forestry Department, Commission of Mines, MGD, UWI, NRCA, PCs, MPM, MFA, PIOJ, EFJ, MLE, AGD, CPC, NGOs

Performance Indicators

- Recruitment of consultant
- Participation of stakeholders

Means of Verification

- Consultant's report
- List of incentives/disincentives

Budget (Five years)	US\$
Hiring of consultant (3 months)	7500
Research/Training of counterpart	3000
Communication	3500
Pilot project	5000
Miscellaneous	2000
Contingencies	2100
TOTAL	23,100

Project 8: To Create a Coastal Management Trust Fund

Objective

- Invest endowment funds for sustainable financing of coastal zone management.

Activities

- Access administer and protects funds.
- Receive project applications for coastal zone management and disburse funds.

Duration/Timing

The project to begin at year 2 of the Plan and continue to the end of Phase I

Overall Responsibility

Council

Secondary Responsibility

NEPA

Budget (2 years)	US\$
Project coordinator	filled by relocation
Local travel	3500
Research	5000
Communication	3000
Workshops (3)	4500

Contingencies (10%)	1550
Total	17050

Performance Indicators

At the end of Phase I, the trust fund should be functional.