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Land and Marine Management Strategy for Grenada

OCTOBER, 2011



Submitted by:



FINAL : Land and Marine Management Strategy Grenada



Plate 1 Map of Grenada Carriacou and Petit Martinique
(http://www.intute.ac.uk/worldguide/html/897_map.html)

FOREWORD

Embarking on the critical work of developing a comprehensive framework for managing our nation's limited land and marine resources is both an ambitious and necessary undertaking. JECO Caribbean began this project with a comprehensive set of analytical tools informed by an understanding that Grenada's land space is the foundation for sustainable development which directly implicates any long-term plans for the marine area. Given the small size of our Islands both resources must be managed as one integrated ecosystem.

The governance challenges associated with meeting our national development needs while protecting our fragile ecosystem have been well articulated in the background report to this Strategy.

The Land and Marine Management Strategy presents a practical framework for addressing the socio-economic drivers and environmental pressures that combine to create varying impacts and degrees of vulnerability manifested in weak institutions and loss in environmental quality. Included in the Strategy are appropriate tools and mechanisms, when combined with enabling legislation and adequate organizational capacity, will serve as the vehicle for achieving the goal of integrated national development that is simultaneously environmentally sustainable.

It is envisaged that the impetus generated during the Strategy formulation process will be sustained through continued engagement of the Project's Steering Committee and the collaborative efforts of all stakeholders. What remains is the need to mobilize resources for implementation of the five-year Action Plan to move from knowledge to practice.

The formulation of this strategy is rather timely, in light of the future expected challenges associated with climate change that appears to be driving notable increases in natural hazard frequency and natural disasters intensities. This highlights the need for urgency at all levels, to take concerted action to ensure that our policy responses lead to increased system resilience.

I trust that this seminal work will be readily adopted as our primary guide in managing Grenada's land and marine resources and that it will be integrated into a national strategic development framework.

Raymond Baptiste
Chairman, GLMMS Steering Committee
Chief Land Use Officer
Ministry of Agriculture, Forestry and Fisheries.

ACKNOWLEDGEMENT

The formulation of this Strategy was possible through the leadership and support of the Project Steering Committee, in particular the Chair Mr. Raymond Baptiste. We are grateful for the feedback provided by the cross section of stakeholders representing public and private sectors, non-governmental organizations as well as the Non-state Panel of Actors.

Dr. Valma Jessamy, land management and development expert, served as the lead consultant on the project providing coordination and direction to the team. The JECO Caribbean team was grateful to have Professor Kerry Turner, the 2007 Nobel Laureate, and Professor Kate Brown who provided keen oversight, insightful review and invaluable input into the Strategy and also through their participation in the stakeholder workshops. Marine expert Dr. Patrick McConney, leveraged his indepth knowledge of the tri-island's marine space to bear upon his analytical review and comprehensive editing of the Draft Strategy while Mr. James Finlay, Grenada's former Chief Fisheries Officer, assisted with the preparation of the background documents.

Importantly, the local stakeholder organizations, in particular the Grenada Solid Waste Management Authority through Ms. Karen Rhoden, as well as all those responsive civic minded individuals who attended the consultations provided critical interventions that were essential to ensuring the utility of the Strategy by providing important analyses of the current state of need across various public/private sectors.

Finally, the coordinating role undertaken with admirable professionalism by the EDF Office permitted the JECO Caribbean team of consultants the perfect quantum of latitude that permitted this work to proceed to completion for which we will always remain profoundly grateful.

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Executive Summary

I Introduction

This project involved a study of the institutional, legislative, regulatory and policy framework for land and marine management in Grenada¹ and the preparation of a comprehensive and coherent strategy for land and marine management through a participative process with relevant stakeholders. The Driving Pressure State Impact Response (DPSIR) framework of analysis was utilized to scope the existing situation and identify policy responses that will lead towards meeting the project goal of sustainable development

The factors that combine to influence the management of land and marine resources in Grenada must be viewed across three broad levels of vertical and horizontal interactions between institutional arrangements at the global, regional and national level. At the national level land and marine management is influenced by the interaction between formal and informal institutions that govern the use of common property public resources and private property. Thorough review of the institutional framework for land and marine management in Grenada revealed that the laws and regulations are outdated having been developed in a colonial, pre-independence and post-hurricane Janet² era between 1897 - 1956. Where recent legislative amendments have been enacted, they are less than adequate to address the dynamic changes that have occurred within the political economy (1956 to 2011), resulting in shifts in development patterns and changing fortunes of an agricultural based rural economy to one dependent on urban tourism and coastal development.

The organizations responsible for land and marine management do not have the requisite legislation with supporting regulations for implementation of their day to day functions. Therefore, recent policies such as the Forest Policy and Environmental Policy cannot be implemented as there are not adequate enabling law and regulations. As such, the projects and programs of action undertaken by the relevant agencies are inconsistent with their legal framework. This mismatch between institutions and organizations means that cultural norms and practice dominate the utilization of land and marine resources resulting in poor governance. With the exception of demarcated national parks and marine protected areas public lands are *defacto* common property resources with limited regulations to govern their use. Likewise, there are limited regulations and codes of best practices for the utilization of

¹ Here Grenada refers to the tri-island state of Grenada, Carriacou and Petit Martinique. The total area of Grenada, the largest of the three islands, is 133 square miles (312 km²); having a width of twelve miles (18 km) and a length of twenty-one miles (34 km). Grenada is located at the southern end of the chain of Lesser Antillean islands, at Latitude 11° 58' and 12° 13' N, and Longitude 61° 20' and 61° 35' West. To the north lies the State of St. Vincent and the Grenadines and to the south lies the State of Trinidad and Tobago (Plate 1).

² Hurricane Janet, 1955, a Category 5 tropical system that devastated Grenada

private lands which is estimated to account for 90% of the island. Coastal and marine resources are similarly regarded as *defacto* common property and in the absence of rules to govern their use, cultural norms and practices predominate. Consequently, initiatives to allocate space occurs on a single sector or project basis and there exists no comprehensive spatial planning or zoning for allocation of use of land and marine resources at the national level.

Governance challenges to be addressed to enable sustainable Land and Marine Management in Grenada include:

- Outdated legislation not consistent with present socio-economic and cultural imperatives;
- Limited coordination of implementation among agencies involved in environmental management;
- No Land Management Agency or Marine Management Authority;
- Absence of a clear policy statement for utilization of land and marine resources;
- Inadequate regulations, codes of practice and standards for natural resource use;
- Promulgation of a Draft Environmental Management Act;
- No comprehensive zoning or spatial planning since planning is sector or project specific; and
- Tourism dependent economy centered around development in coastal areas.

The within Strategy responds to these and other challenges to the current state as it relates to the management of land and marine resources. The Background Strategy Report which is a companion to this document provides a comprehensive situational analysis. Two levels of results were developed during the Strategy formulation process: Level One presents the framework to address the institutional and policy failures that constrain the ability to manage limited resources in a sustainable manner; Level Two applies the framework to address strategic issues and priority areas for integrated land and marine management.

II Strategy Formulation Process

Cognizant of the body of work that exists and initiatives currently being implemented, the approach of this review was to employ a didactic framework of analysis that allows for the identification of areas of convergence, divergence, enabling mechanisms and procedures, constraints and limitations to achieving sustainable land and marine management. The main goal was not to duplicate or conflict with what has already been achieved rather to build and reinforce so that the outputs of the strategy process contributes to meeting overall national sustainable development objectives.

The review process involved three key steps:

1. Data collection and review of existing documents (laws and regulations, policies, projects, programs, management plans, proposals, strategies);
2. Consultations with key stakeholders and management agencies at the fore of land and marine management to refine the outcomes of the review process (discuss gap analysis and strategic options for intervention); and
3. Finalize Background Strategy Document and key priority issues for the development of the national Land and Marine Management Strategy for Grenada.

Following from the series of focus groups meetings and the stakeholder consultation on the background document consensus was achieved on priorities and areas for action to be elaborated in the Strategy. The results from the strategy development process are:

1. A mapping of the current legislative, regulatory, institutional and policy framework and capacity for the integrated management of land, freshwater, coastal and the marine resources of Grenada; all related gaps are identified and a comprehensive set of strategic options are presented;
2. A comprehensive Land and Marine Management Strategy for Grenada is developed; and
3. A broad-based consultative process for the drafting and finalization of the proposed Strategy is engaged.

III Strategy Framework

3.1 Overall Strategy Goal

To achieve integrated national development that is environmentally sustainable.

3.2 Strategy Objective and Strategy Outcomes

To develop a coherent framework with an appropriate set of strategies that will foster productive and optimal utilization of land, freshwater, coastal and marine resources in an environmentally sustainable manner.

Strategy Outcome 1

- Legislative Policy Framework for Land and Marine Management Developed

Strategy Outcome 2

- Network Administrator Organization (s) Established

Strategy Outcome 3

- Tools for Management of Land and Marine Resources Developed

Strategy Outcome 4

- Framework for Planning, Implementation, Monitoring and Review Developed

Aspirations for the Strategy

It is useful for there to be a common vision for the management of Grenada's limited land and marine resources which can help provide a consistent framework for local communities, managers and for policy makers within Government. Drawing on the responses from the series of consultations and from the situational analysis that were involved in the strategy formulation process, the agreed vision for integrated land and marine management were articulated:

- Sustainably managed areas, where competing demands and pressures have been taken into account and the social and economic needs of society have been reconciled with the need for conservation of the natural and historic environment.
- A clear policy and regulatory framework into which the principles of a holistic and coordinated approach are embedded.
- A new strategic management approach in the marine environment which is effectively integrated with the management of the land.
- More consistent application of the best management practices and principles of sound holistic and coordinated management around the coast.
- A management approach that builds on existing structures and responsibilities while encouraging organizations to improve relationships coordinate work plans.
- A flexible management approach, which supports local initiatives and solutions to address local circumstances within an overall regulatory framework.
- Appropriate and effective stakeholder and local community involvement throughout management processes.

IV Strategy Outcomes and Objectives

Strategy Outcome 1

Legislative Policy Framework for Land and Marine Management Developed.

Goal - Outcome 1

To create a legal framework for the implementation of the Land and Marine Management Strategy to facilitate development that empowers individuals to exercise their rights and responsibility to protect the environment.

Objectives - Outcome 1

- To enact legislation and companion regulations to formalize the functions and operations of the Ministry of the Environment;
- To update and modernize existing legislation that provide for management of land, water and marine resources;
- To develop regulations, standards and codes of practice for existing legislation;
- To adopt international conventions and multi-lateral environmental agreements into the national legislative framework;
- To formulate a national land use policy statement; and
- To promulgate new legislation and regulations to address emerging trends and priority issues.

Strategy - Outcome 2

Network Administrator Organization (s) Established.

Goal - Outcome 2

To create the coordinating mechanisms needed to implement the Land and Marine Management Strategy and to ensure that action can be taken at all appropriate levels of decision making.

Objectives - Outcome 2

- To build institutional capacity within the agency responsible for coordination of environment and natural resource management
- To create efficient network administrator organizations for coordination of land and marine resource management
- To establish and strengthen mechanisms for interagency collaboration

- To increase efficiency in the provision of service to clients and customers including line ministries, statutory bodies, private sector, NGOs, communities and individuals
- To improve the rational use and sustainable management of land resources

Strategy - Outcome 3

Tools for management for Land and Marine Resources Developed.

Goal - Outcome 3

To develop and widely utilize tools for creation of a seamless integrated system for management of Land and Marine Resources.

Objectives - Outcome 3

- To provide reliable data on the quantity, degradation status and availability of natural assets to enable effective management and efficient use of limited resources
- To create repositories and access portals for information on natural resources that is real time and can be easily manipulated for forecasting changes in the environment
- To promote awareness and understanding of the need for sustained environmental protection, conservation and management
- To provide the best practical environmental options (BPEO) for management of limited resources cognizant of socio-economic factors, cultural values and beliefs held on the environment
- To ensure that individuals and economic entities are given appropriate incentives for sustainable resource use and environmental protection
- To develop a system and guidelines for environmental impact assessment (EIA), so that adverse environmental impacts can be eliminated or mitigated and environmental benefits enhanced
- To create a seamless geographic information system for land and marine spatial planning for Grenada, Carriacou and Petit Martinique

Strategy - Outcome 4

Framework for Planning, Execution, Monitoring and Review Developed.

Goal - Outcome 4

To facilitate continuity and sustainability in the implementation of plans, programs, policies and other instruments that promote efficient management of land and marine resources.

Objectives - Outcome 4

- To utilize decision support systems (DSS) for selection of policy responses so that they are not mal-adaptive and foster sustainable development
- To include environmental economic analysis as part of monetary valuation in evaluating plans and projects
- To develop distributional and trade-off analysis procedures that involve stakeholders across all levels of participation in development planning
- To include environmental change and future scenario analysis in planning, execution, monitoring and review of development projects

V Requirements for Strategy Implementation

Interagency Collaboration

The challenges related to effective management of land and marine resources cross several sectors often with competing interests. Presently there is no formal mechanism for inter-sector collaboration for project planning, execution and monitoring progress. It is envisioned that the network administrative organizations will provide strong leadership so that there is interagency collaboration in planning, resource mobilization and allocation.

Financial, Human and Technical Resources

There are always national socio-economic development priorities that compete for resources needed to enable adequate environmental management. It is therefore necessary to integrate natural resource management across all sectors and to include as part of sector and national development planning. In order to implement the Land and Marine Management Strategy synergies must be achieved with existing projects that seek to meet the same objectives.

Adoption by Cabinet

In order for the Strategy to be adopted into Grenada's national development agenda there must be buy-in from all stakeholders and approval from the Cabinet of Ministers. There is need for strong leadership and political will for firm decision taking with respect to paradigm shifts and change in the present mode of operation for environmental management.

Enabling factors and constraints

Implementation of this Strategy will benefit from outputs developed by the Sustainable Land Management Project and initiatives for the development of a Land Management Agency for Grenada. Strategic options for creating a network administrative organization for environmental management are consistent with the objectives of the National Environmental Management Strategy for Grenada. There are current projects underway for capacity building

and strengthening of the Environmental Ministry that are consistent with the objectives of this Land and Marine Management Strategy. Notwithstanding current initiatives, interest for investments in environmental quality appears to be low as evidenced by the low priority given to key sectors and stakeholders at the forefront of natural resource utilization. This implies that strong leadership is needed to champion the agenda for adoption of the Strategy and for environmental management for sustainable development as a whole.

VI Recommendations for Strategy Implementation

Given that there are ongoing initiatives for which resources have already been mobilized for implementation, several of the proposed actions for this Strategy can be readily undertaken. Actions that require inclusion in project cycles and budget programming are expected to take longer to be executed. Some actions are secondary steps that must be implemented after progress is made with higher priority activities. Environmental education and public awareness must be ongoing and require a national strategic approach infused across all sectors and levels of society.

A phased approach is thus recommended for implementation of the action plan for the Land and Marine Management Strategy for Grenada. Actions for immediate consideration over the next 6 to 12 months are:

- Establish multi-disciplinary technical advisory council/board to spearhead coordination of Environmental Management;
- Produce State of the Environment Report³;
- Revise and promulgate Environmental Management Act;
- Develop Strategic Action Plan for implementation of the National Environmental Policy and Management Strategy;
- Conduct consultations for the establishment of a Marine Management Agency;
- Formalize arrangements for the establishment of the Land Management Agency; and
- Develop mechanism for inter-agency collaboration for implementation of the Land and Marine Management Strategy.

³Recommended that this become an annual nationally distributed Report from the Ministry of the Environment

1.0 INTRODUCTION - CONTEXT FOR STRATEGY

1.0 Introduction - Context for Strategy

This project involved a study of the institutional, legislative, regulatory and policy framework for land and marine management in Grenada⁴ and the preparation of a comprehensive and coherent strategy for land and marine management through a participative process with relevant stakeholders. The driving pressure state impact response (DPSIR) framework of analysis was utilized to scope the existing situation and identify policy responses that will lead towards meeting the project goal of sustainable development (**Figure 1-1**). The DPSIR framework is an auditing tool that is widely used to scope the complications involved in analyzing integrated watershed management, coastal change and natural resources management. "It is a way of identifying the key issues, questions, data/information availability, land use patterns, proposed developments, existing institutional frameworks, timing and spatial considerations" that are required for an integrated assessment of co-evolutionary bio/geophysical and socio-economic process and allow for a better understanding of complex phenomena" (Turner *et al* as cited in Jessamy, 2003).⁵

The Strategy herein contained responds to the current situation that pertains for the management of land and marine resources. The Background Strategy Report which is a companion to this document, provides a comprehensive situational analysis, briefly summarized in the sections that follow. The Strategy is developed on two levels: Level One presents the framework to address the institutional and policy failures that constrain the ability to manage limited resources in a sustainable manner; Level Two applies the framework to address strategic issues and priority areas for integrated land and marine management.

⁴ Here Grenada refers to the tri-island state of Grenada, Carriacou and Petit Martinique. The total area of Grenada, the largest of the three islands, is 133 square miles (312 km²); having a width of twelve miles (18 km) and a length of twenty-one miles (34 km). Grenada is located at the southern end of the chain of Lesser Antillean islands, at Latitude 11° 58' and 12° 13' N, and Longitude 61° 20' and 61° 35' West. To the north lies the State of St. Vincent and the Grenadines and to the south lies the State of Trinidad and Tobago (Plate 1).

⁵ Jessamy 2003, An Integrated Framework for Natural Hazard Mitigation and Development Planning in the Caribbean. Doctoral Thesis, University of East Anglia, School of Environmental Sciences, UK.

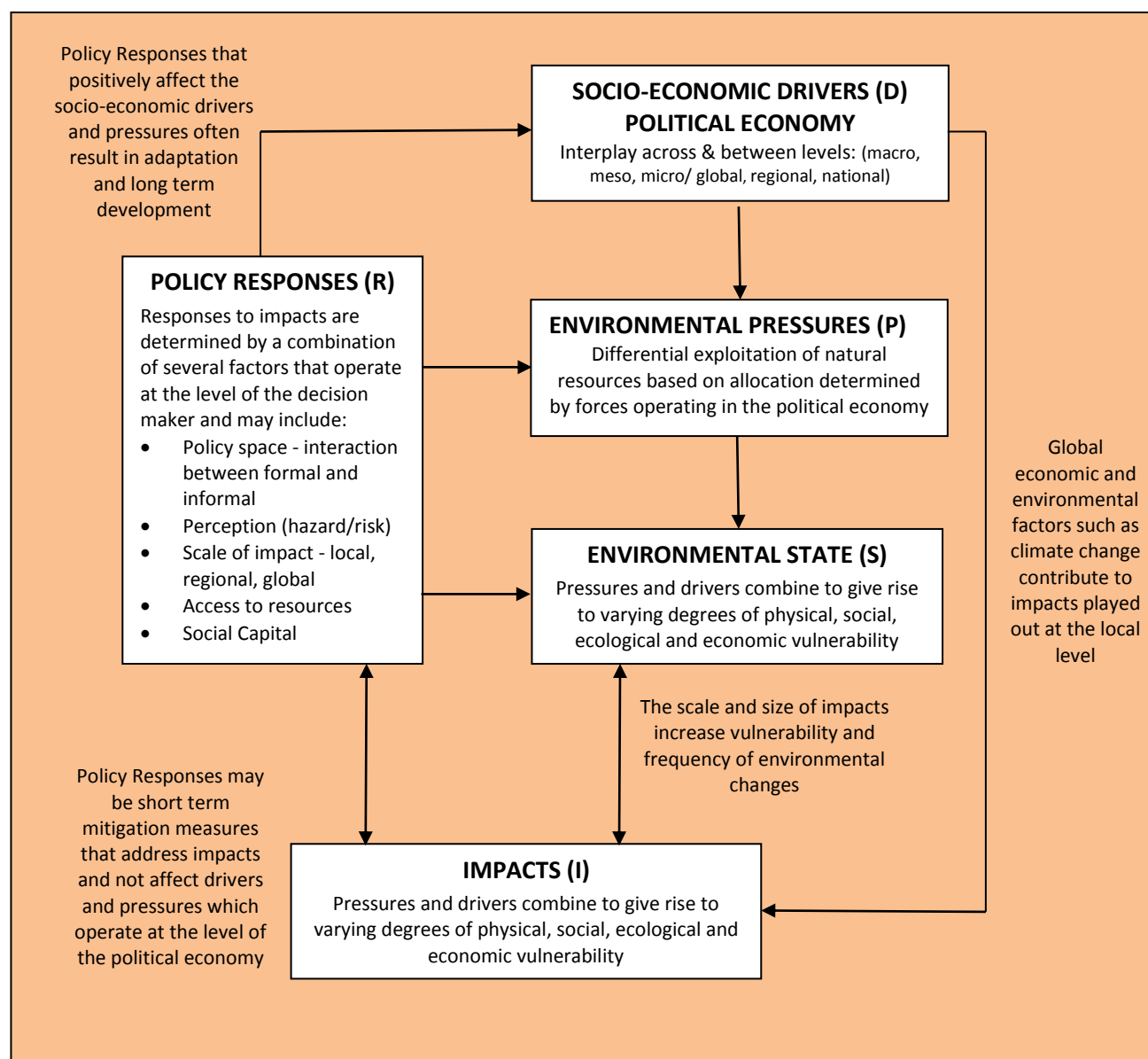


Figure 1-1 Driving Pressure State Impact Response (DPSIR) Framework of Analysis (modified from Jessamy, 2003)

1.1 Macro Political and Socio Economic Drivers

The factors that combine to influence the management of land and marine resources in Grenada must be viewed across three broad levels of vertical and horizontal interactions between institutional arrangements at the global, regional and national level. (Figure 1-2). At the global level, Grenada is signatory to a number of conventions and multilateral environmental agreements (MEAs) that have implications for use of land and marine resources.

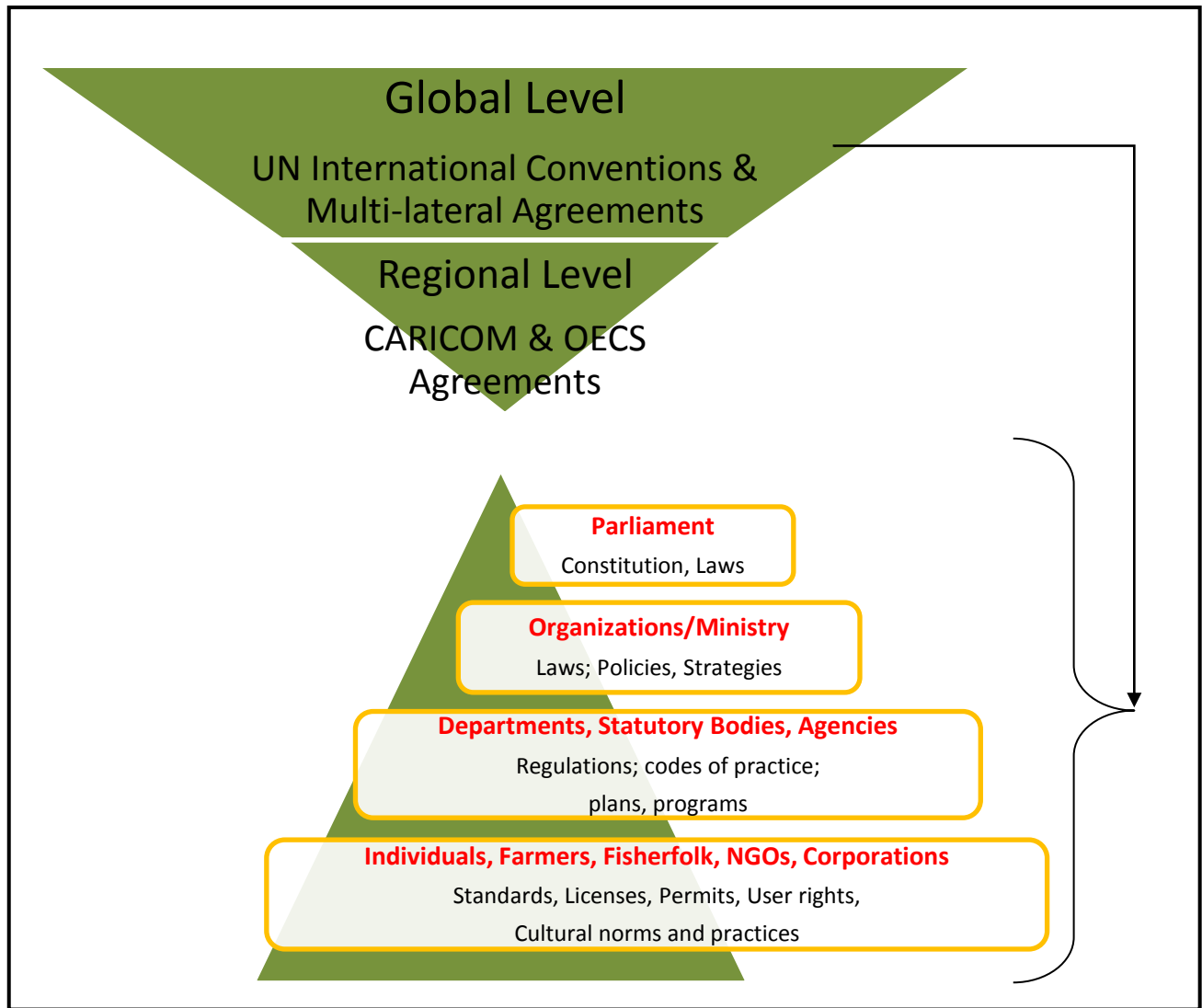


Figure 1-2 Institutional Framework for Resource Management in Grenada

Several of these policy instruments have yet to be adopted into national legislation and as such the impact of their implementation cannot be assessed. **Table 1-1** provides a summary of the legislation, policies, conventions and multilateral environmental agreements that have implications for management of natural resources in Grenada. For land management, Grenada is signatory to the UNCCD (Convention to Combat Desertification) under which it is presently implementing a sustainable land management capacity building project as part of its obligation. Other relevant MEAs include the Conventions for Biological Diversity (CBD) and Climate Change (UNFCCC) for which Grenada has developed action plans for implementation. Global economic and environmental drivers and pressures are readily manifested at the national level due to inherent vulnerability to external shock due to small size and economy.

The designation of the Caribbean Sea as a Special Area means that regional institutional arrangements for environmental protection and marine spatial management have implications at the national level. Caribbean Governments subscribe to international agreements such as the UNCLOS (Convention on Law of the Sea), MARPOL (Convention to prevent Marine Pollution) and Basel Convention on trans-boundary shipment of hazardous wastes. However, in Grenada these have yet to be adopted into national legislation. Regional governments under the Caribbean Challenge, have made commitments to protect 20 percent of their marine and coastal areas by the year 2020.

Still in its incubation stage, the OECS Secretariat has initiated a Sustainable Oceans Governance (SOG) program with the overall objective of promoting regional economic development through the sustainable management of the use of ocean resources and the protection of the marine environment. Under the SOG program, Grenada like its regional counterparts is expected to develop the institutional structure and arrangements for establishing an oceans management unit. Further, bilateral boundary agreements with Trinidad and Tobago and St. Vincent and the Grenadines are important in determining issues related to exploitation of natural resources, marine disposal of waste, trans-boundary movement of wastes and hazardous materials, and protection of the environment.

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Table 1-1 Institutional Framework for Land and Marine Management in Grenada

Government Agency	Key Legislation	Policies, Conventions & Multilateral Agreements	International and Regional Partners
Ministry of Agriculture: Land Use Division, Forestry Division, National Parks and Protected Areas, Fisheries Division, Pesticide Management Unit	▪ Crown Lands Ordinance CAP. 78 of 1990 (1896) ▪ Crown Land Rules SRO No. 36 (1934) ▪ Crown Lands Rules (Amendments) SRO Nos. 3, 19, 39 (1965) ▪ Crown Lands Forest Produce Rules (1956) ▪ Protected Forest Rules SRO No. 87 (1952) ▪ Forest, Soil and Water Conservation Act. CAP. 116 (1949) ▪ Forest, Soil and Water Conservation (Amendment) Ordinance No. 34 (1984) ▪ Beach Protection Act CAP. 29 (1979) ▪ Botanical Gardens Act CAP. 35 (1968) ▪ Grenada Botanical Gardens and Zoological Gardens Rules SRO. 55 (1968) ▪ National Parks and Protected Areas Act CAP. 206 (1990) ▪ Fisheries Act CAP. 108 (1986) ▪ Fisheries (Amendment) Act (1998) ▪ Fisheries (Amendment) Regulations (1999) ▪ Fisheries (Amendment) Regulations (1996) ▪ Fisheries (Amendment) Regulations (2001) - MPA ▪ Fisheries Marine Protected Areas Regulations SRO 78, 2001 ▪ Fisheries Act (Levera Beach Closed Area) Regulations SRO 15, of 2010 ▪ Grenada Fisheries Regulation SRO #9 (1987) ▪ Oyster Fishery Act CAP. 223 (1893) and Regulations SRO 40 (1963) ▪ Pesticides Control Act CAP. 238 (1973) ▪ Pesticides Control Regulations SRO. 10 (1979)	▪ National Forest Policy (1999) and Strategy (2000) ▪ Convention to Combat Desertification and Land Degradation (1992) ▪ Cartagena Convention (1983) and its Protocols concerning SPAW ▪ United Nations Convention on the Law of the Sea (UNCLOS, 1982) ▪ Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, 1973) ▪ Tropical Forestry Action Plan (1985) ▪ Convention on Wetlands of International Importance (RAMSAR, 1971) ▪ Convention on the Protection of Migratory Species of Wild Animals (1972) ▪ Port of Spain Accord on Management and Conservation of the Caribbean Environment (CARICOM, 1989) ▪ Agricultural Policy and Programs of the Ministry of Agriculture (1997-2010) ▪ CRFM	▪ FAO (UN) ▪ OECS/ESDU ▪ CEP/UNEP ▪ CRFAM ▪ GEF ▪ UNDP AND UNEP ▪ EU-STABEX ▪ DFID ▪ CARICOM

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Government Agency	Key Legislation	Policies, Conventions & Multilateral Agreements	International and Regional Partners
Ministry of Communications, Public Utilities and Works: Gravel and Concrete Corp; Physical Planning Unit, Land Development Control Authority (LDCA) NAWASA	- Beach Protection Act CAP. 29 (1979) - Gravel Concrete and Emulsion Production Corporation Act CAP 125 - National Water and Sewerage Authority Act CAP. 208 (1991) - National Water and Sewerage Authority (draft amendment) Act (1999) - National Water and Sewerage Authority Regulations SRO 40 (1993) - National Water Act	- Vienna Convention and its Montreal Protocols of 1987 (Convention for the Protection of the Ozone Layer) - Integrated Watershed Management Policy (in development stage)	- PAHO/WHO - CARICOM/CEHI - CDB
Ministry of Communications and Works; Physical Planning Unit (LDCA)	- Land Development Control Regulations SRO No. 13 (1988) - Physical Planning and Development Control Act 25 (2002) - Grenada Building Codes and Standards (2000) - Town and Country Planning Act CAP. 293 (1958) and Amendments Act 3 (1963), CAP. 339 (1990) - Bathing Places Act, Cap. 28 (1990)	- National Physical Development Plan - Integrated Physical Development and Environmental Management Plan for Carriacou and Petit Martinique	- IMO - CPACC - UNDP/GEF - ECCB - ACS - OECS/ESDU
Ministry of Health; Grenada Solid Waste Management Authority	- Public Health Act CAP. 263 (1925) - Public Health Regulations Sec.15 (1958) - Public Health Ordinance CAP. 237 (1925) and Amendments SRO No. 218 (1957) - Abatement of Litter Act CAP. 1 (1974) - Environmental Levy Act CAP. 5 (1997) - Environmental Levy (Amendment) Act CAP. 2 (2000) - Solid Waste Management Act CAP. 11 (1995)	- OECS/ESDU St. George's Declaration: Principles on Environmental Sustainability - OECS/ESDU Environmental Management Strategy - International Convention for the Prevention of Marine Pollution MARPOL (ANNEX IV)	- PAHO/WHO - OECS/ESDU - CARICOM/CEHI - CEP/UNEP - UNDP
National Disaster Management Agency	Disaster Management Legislation (model Caribbean legislation to be adopted)	- National Disaster Management Plan - National Hazard Mitigation Policy - Shelter Management Policy - Disaster Management Legislation (to be adopted) - Agreement Establishing CDERA - ACS Natural Disasters Agreement	- CDEMA - OAS/CDMP - WORLD BANK - USAID/OFDA - ACS - UNDRO

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Government Agency	Key Legislation	Policies, Conventions & Multilateral Agreements	International and Regional Partners
Ministry of Environment	Draft Environmental Management Act	- OECS/ESDU St. George's Declaration: Principles on Environmental Sustainability - OECS/ESDU Environmental Management Strategy - National Environmental Policy and Management Strategy - UNFCC (1992, 1997); CBD (1992) - Grenada Biodiversity Strategy and Action Plan (2000) - National Initial Communications on Planning for Adaptation to Climate Change - UNCLOS	- CPACC - UNDP/GEF - OECS/ESDU
Ministry of Education: National Science and Technology Council; National Trust; Museum	- Science and Technology Council Act CAP. 298 (1982) - Grenada National Trust Act CAP. 207 (1967) - National Heritage Protection Act CAP. 204 (1990)	- National Physical Development Plan (Advisory roles and membership on National Heritage Protection Committee) - World Heritage Convention (1972)	- UNESCO - OAS - COSALC
Grenada Bureau of Standards	- Standards Act No. 6 (1989) (Several standards and codes of practice based on international codes e.g. ISO 14000 Series)		- ICC - ILO - ISO
Grenada Yachting and Marina Association	Grenada Yachting Act 17 of 2000	Strategic Plan of the Association	IMO
Ministry of Foreign Affairs	- Territorial Sea and Maritime Boundaries Act, Cap #318 (1990) - Maritime Boundary Treaty -TNT / Gd'a (2010)	- UNCLOS II (1982) (Not Yet Available)	- IMO - Govt T&T
Ministry of Finance: Ports Authority; Economic Affairs Division, GIDC	- Territorial Sea and Maritime Boundaries Act CAP. 318 - Oil in Navigable Waters Act CAP. 218 (1928) - LDCA Act (1968) and Amendments (1983) - Grenada Ports Authority Act	- UNFCC (1992, 1997); CBD (1992) - Grenada Biodiversity Strategy and Action Plan (2000) - National Initial Communications on Planning for Adaptation to Climate Change - UNCLOS	- IMO - CPACC - UNDP/GEF - ECCB - ACS - OECS/ESDU

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At the national level land and marine management is influenced by the interaction between formal and informal institutions that govern the use of common property public resources and private property (**Figure 1-3**). Thorough review of the institutional framework for land and marine management in Grenada revealed that the laws and regulations are outdated, having been developed in a colonial pre-independence and post-hurricane Janet⁶ era between 1897 - 1956. Where recent amendments have been enacted they are inadequate to address the dynamic changes that have occurred within the political economy (1956 to 2011), resulting in shifts in development patterns and changing fortunes of an agricultural based rural economy to one dependent on services, urban tourism and coastal development.

Institutions Organizations	FORMAL	INFORMAL
	FORMAL	INFORMAL
FORMAL	Traditional space for development planning and undertaking reform	Propensity for conflicts and poor governance
INFORMAL	Propensity for conflicts and poor governance	Self-regulating “traditional” systems

Figure 1-3 Interactions of Policy spaces for development planning (adopted from Jessamy, 2003)

The organizations responsible for land and marine management do not have the requisite legislation with supporting regulations for implementation of their day to day functions. Therefore, recent policies such as the Forest Policy and Environmental Policy are difficult to implement as there are not adequate enabling legislation and regulations. As such the projects and programs of action undertaken by the relevant agencies are inconsistent with their legal framework. This mismatch between institutions and organizations means that cultural norms and practice dominate the utilization of land and marine resources leading to poor governance (Figure 1-3).

⁶ Hurricane Janet, 1955, a Category 5 tropical system that devastated Grenada.

With the exception of demarcated national parks and marine protected areas public lands are *defacto* common property resources with limited regulations to govern their use. Likewise, there are limited regulations and codes of best practices for the utilization of private lands which is estimated to account for 90 percent of the Island. Coastal and marine resources are similarly regarded as *defacto* common property and in the absence of rules to govern their use, cultural norms and practices predominate. Moreover, initiatives to allocate space occur on a single sector or project basis and there is no comprehensive spatial planning or zoning for allocation of use of land and marine resources at the national level.

A draft Land Use Concept was developed for Grenada, Carriacou and Petit Martinique by the Physical Planning Unit however, that plan has yet to be adopted as a national policy document (**Figure 1-4**). This physical development plan must be revised and updated to include marine spatial planning and creation of a seamless integrated data infrastructure for management of land and marine resources. An integrated spatial plan will, for instance, allow watersheds that border marine protected areas to be included in a ridge-to-reef management plan.

Box 1-1 GOVERNANCE CHALLENGES TO BE ADDRESSED TO ENABLE THE LAND AND MARINE MANAGEMENT STRATEGY

- Outdated legislation not consistent with present socio-economic and cultural imperatives
- Limited coordination of implementation among agencies involved in environmental management
- No Land Management Agency or Marine Management Authority
- Absence of a clear policy statement for utilization of land and marine resources
- Inadequate regulations, codes of practice and standards for natural resource use
- Cultural norms and practices take precedent
- Draft Environmental Management Act needs to be promulgated
- No comprehensive zoning or spatial planning; plans are sector or project specific
- Tourism dependent economy centered around development in coastal areas

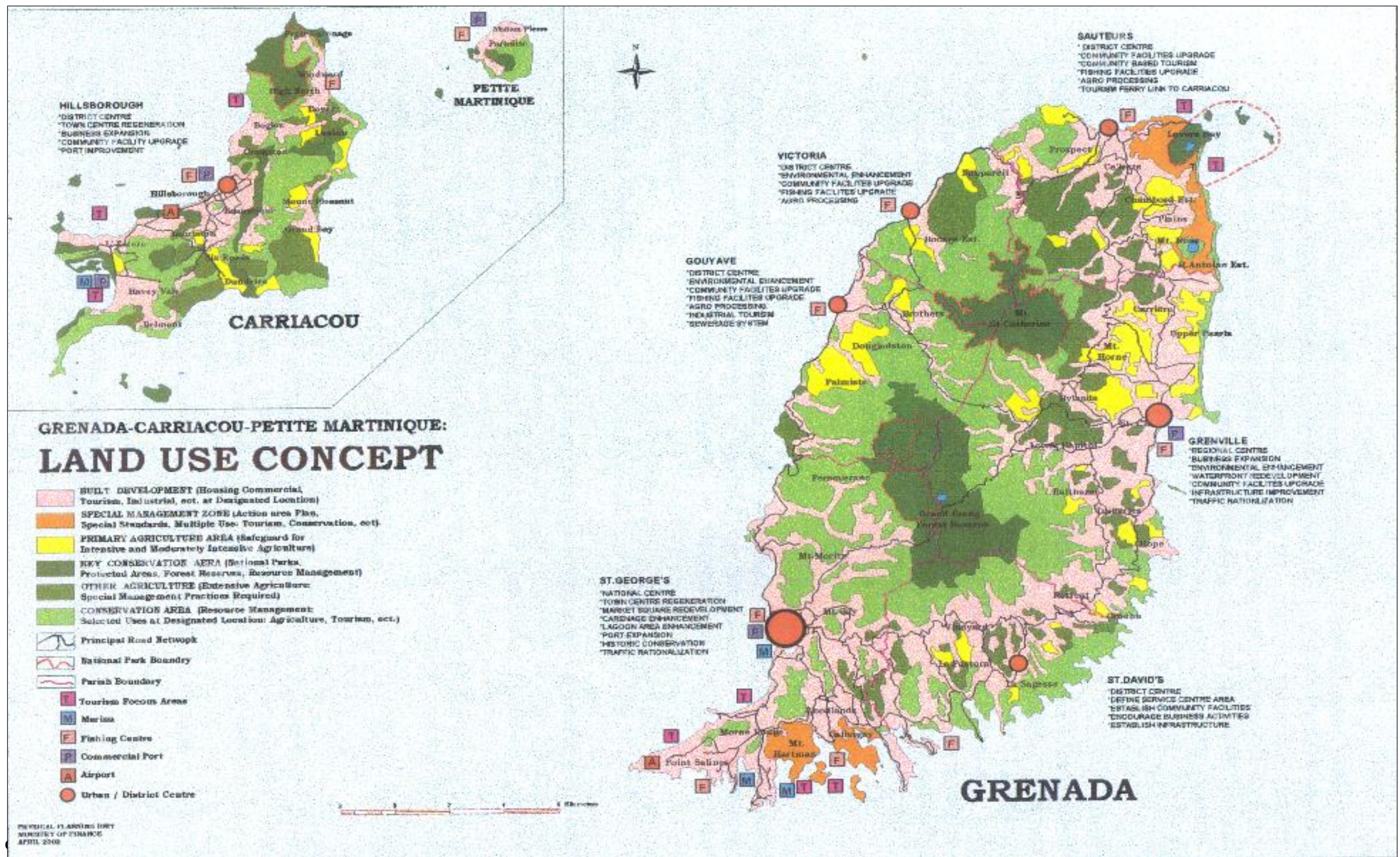


Figure 1-4 Draft Land Use Concept - Needs to be revised and updated as National Land Spatial Plan. Developed by Physical Planning Unit, 2002

1.2 Environmental Pressures

The constraints of small size, mountainous terrain and narrow coastal shelf mean that changes in the environment are readily manifested so that the Island's space must be managed as a single system. These factors also result in development being concentrated in coastal areas and valleys so that environmental pressures are manifested in pockets of concentrated development activities. Land development on steep slopes result in environmental management challenges including problems associated with drainage and improper storm water management, wastewater management; landslides and soil loss; flash flooding in low lying areas. Recent natural hazard events have left negative impacts on forest ecosystems and given current predictions for climate change, it is expected that there will an increase in environmental change and vulnerability particularly in the coastal zone.

While there is little evidence to support claims of present environmental pressures due to global environmental change, recent marked deviations in the normal variability of dry and wet seasons suggests that shifting patterns will affect decisions taken on resource allocation at the national level. One example is the pressures exerted on water production regions to supply the drier but densely populated development centers in the South of the Island.

1.3 Status of Land and Marine Resources

The most recent environmental profile for Grenada was published in 1990. Sector and project specific studies have generated environmental data to allow for the development of management plans such as that for Annandale Protected Watershed, Moliniere Marine Protected Area, Sandy Island and Tyrrell Bay Marine Protected Area. There is no central repository for collating data on natural resources allowing for assessments on change in environmental quality and value of goods and services provided by ecosystems. As such there is need for the production of a "State of the Environment Report" to guide decision making and implementation of this Strategy.

1.4 Impacts of Socio-Economic Development Activities

Current patterns of resource use for human settlement and economic development activities have resulted in several hot spots and highly vulnerable areas in Grenada. Key land and marine management challenges include: Housing settlement in the town of Gouyave; Perseverance Solid Waste Landfill; St. George's and Point Saline marine sewer outfall; St. John's River Watershed Flooding; Impact of marine and coastal habitats by land-based sources of pollution; Loss of coastal habitats and beaches from the impacts of sand mining and sea level rise.

1.5 Policy Responses

In the context of sustainable utilization of natural assets for generating environmental goods and services, the Government of Grenada has adopted a strategy that responds to a number of economic imperatives by identifying five transformational sectors. Accordingly, the Grenada Government explicitly considers the inherited pillars of the economy (Agricultural and Tourism) will be transformed into a five-pillar economy namely: (I) Health Education and Wellness Services; (II) Tourism and Hospitality Services; (III) Agri-business; (IV) Energy Development; and (V) Information Communication Technology (ICT).

Transformation of the economy based on the five pillars listed above means that there must be rational use of land and marine resources so that environmental integrity is maintained. Consequently, the institutional framework must be modernized with revised laws and regulations as well as robust organizational arrangements for their execution. Thus, Government Agencies must be provided with resources for undertaking planning, implementation of plans, monitoring and review.

In 2008 the Government of Grenada established a Ministry of Environment as a separate department within the public service. It is intended that this new Ministry will play a pivotal role in coordinating natural resource management activities including monitoring progress in effectuating obligations under Conventions and Multilateral Agreements and monitoring trends in environmental change.

At the same time plans are underway for the establishment of a Land Agency for Grenada which is expected to function as an executive agency under the Ministry of Finance. Details are presently being finalized but it is proposed that the Land Agency will bring into one functional unit the Physical Planning Unit, Deeds and Lands Registry, Cadastral Survey Unit, Land Use Division and the Lands and Survey Department.

Nonetheless, there is need for new institutional arrangements for management of coastal and marine resources that are consistent with the objectives of the OECS SOG initiative and the national trans-boundary arrangements that Grenada is currently negotiating with its neighbors. With respect to land and marine management, a number of recent initiatives and policy development processes positively contribute to the Strategy. They are:

- Forestry and Wildlife Management Strategy and Action Plan. (2000)
- The National Physical Development Plan (2000)
- National Environmental Policy and Management Strategy (2005)
- The Integrated Watershed and Coastal Area Management initiative (IWCAM)
- Grenada Systems Plan 2008 Proposal for the establishment of the National Parks and Marine Protected Areas - Woburn MPA; Moliniere MPA and Sandy Island MPA
- Sustainable land management initiatives e.g., Capacity building and mainstreaming of sustainable land management project 2009-2012;

From the foregoing analysis which was informed by research, review of past and ongoing initiatives and stakeholder commentary, the institutional framework for land and marine management in Grenada must be formulated around four strategic elements: 1) Legislative framework; 2) Organizational arrangements; 3) Tools for Implementation; and 4) Framework for planning, monitoring and review. The strategy formulation process is described in the following section and the outputs presented in Section 3 of this document. Section 4 presents an elaboration of the framework, Section 5 outlines the factors that are required for implementation and Section 6 describes a phased action plan.

CASE STUDIES - PRIORITY AREAS FOR ACTION

The following priority areas were identified by stakeholders during the strategy policy formulation process. These case studies were developed using the strategy framework and are presented in a companion document to the Land and Marine Management Strategy.

- A.1 Protected Areas and Watersheds - Beausejour Watershed
- A.2 Solid Waste Management - Perseverance Watershed
- A.3 Integrated Watershed Management - St. John's River Watershed
- A.4 Sustainable Agriculture - Silviculture and Best Practices
- A.5 Land Development Guidelines - Drainage and Storm water management
- A.6 Housing and Human Settlement - Gouyave
- A.7 Wastewater Management - Marine Outfalls
- A.8 Coastal Zone Management - Marine Protected Areas
- A.9 Code of Practice for Marinas and Boatyards
- A.10 Hazard Mitigation and Adaptation for Climate Change
- A.11 Fisheries and Marine Resources
- A. 12 Maritime Boundaries & EEZ Management
- A. 13 Tourism Development Planning
- A. 14 Mining of Natural Resources - Quarry Development
- A. 15 Species of Special Concern - Habitat of Marine Birds and Grenada Dove
- A. 16 Land Tenure and User Rights - Formal and informal tenure arrangements
- A. 17 Ecosystem Restoration and Rehabilitation - Quarries, degraded coastal ecosystems

STRATEGY FORMULATION PROCESS

2.0 Strategy Formulation Process

There are several recent and ongoing initiatives that contributed to this strategy formulation process. Specifically, reviews have been conducted on the institutional framework and capacity for integrated land and marine management resulting in the formulation of sector policies, strategies and management plans. Cognizant of the body of work that exists and initiatives currently being implemented, the approach of this review was to employ a didactic framework of analysis that allows for the identification of areas of convergence, divergence, enabling mechanisms and procedures, constraints and limitations to achieving sustainable land and marine management. The main goal was not to duplicate or conflict with what has already been achieved but rather to build and reinforce so that the outputs of the strategy process contributes to meeting overall national sustainable development objectives. For this purpose the driving pressure state impact response (DPSIR) framework of analysis was utilized to map the current situation, identify gaps and present strategic options or policy responses.

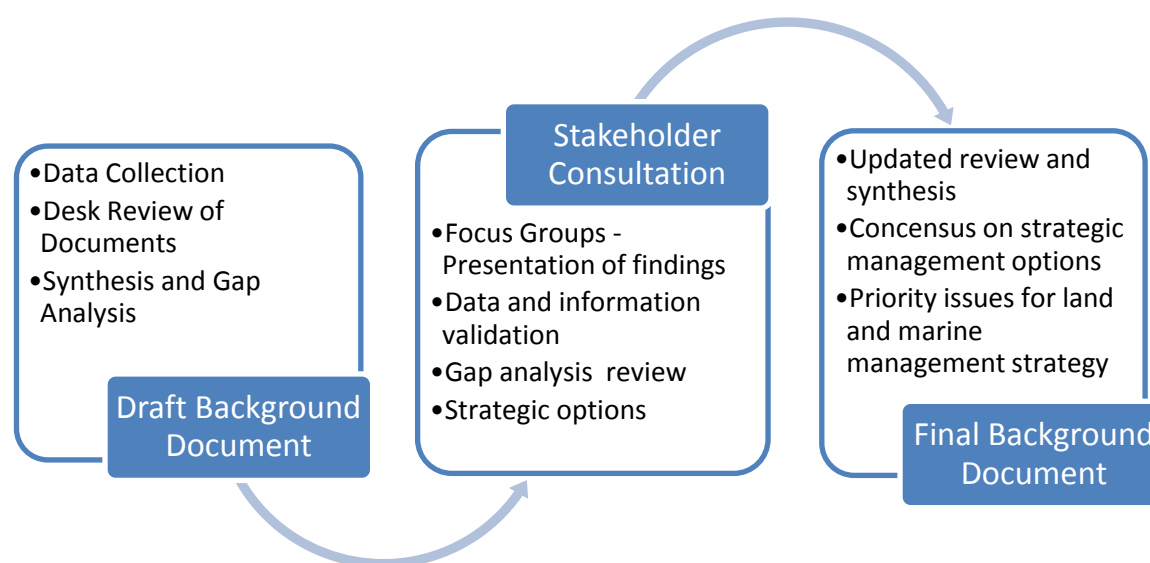


Figure 2-1 Review Process for Identification of Priority Areas for Action

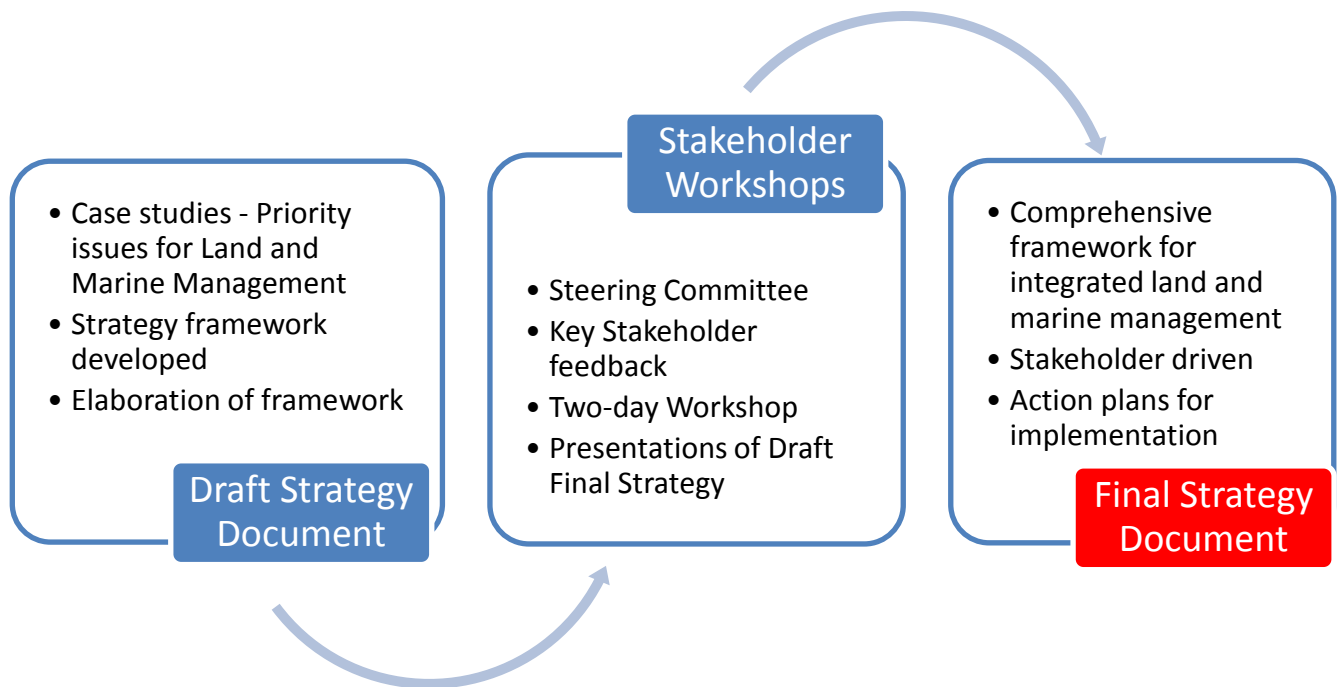
The review process involved three key steps as summarized in the process diagram below:

1. Data collection and review of existing documents (laws and regulations, policies, projects, programs, management plans, proposals, strategies)
2. Consultations with key stakeholders and management agencies at the fore of land and marine management to refine the outcomes of the review process (discuss gap analysis and strategic options for intervention)
3. Finalize Background Strategy Document and key priority issues for the development of the National Land and Marine Management Strategy for Grenada

Box 2-1 Key Documents, Reviews and Assessment Reports for Land and Marine Management in Grenada (partial list)

- Sector Report - Coastal and Marine Resources , National Biodiversity Strategy and Action Plan (Finlay, 2000)
- Sector Report - Land Use and Environmental Planning, National biodiversity Strategy and Action Plan (Jessamy, 2000)
- National Capacity Self Assessment for Land Degradation in Grenada (Jessamy, 2006)
- Final Document - Grenada Capacity Development and Mainstreaming Sustainable Land Management Proposal Submitted to Ministry of Finance (Jessamy, 2006)
- Fisheries Management Plan for Grenada (Finlay, 2001)
- Grenada Protected Area System Plan: Identification and Designation of Protected Areas (Turner, 2009)
- Review and Interpretation of Environmental and Sustainable Development Legislation for the Grenadines Islands (Mattai and Mahon, 2006)
- Socio-economic profile of fisheries in the Grenadines (Gill *et al* 2007)
- Review of Policy, Legislative and Institutional Framework for SLM in Grenada (ESL, 2010)
- Marine Protected Area (MPA) Planning for Carriacou and Petit Martinique (CCA, 2003)
- National Environmental Management Policy and Strategy (GoG, 2005)

Following from the series of focus groups meetings and the stakeholder consultation on the Background Document, consensus was achieved on priorities and areas for action to be elaborated in the strategy. This led to the second phase of the strategy formulation process outlined in Figure 2-2 below.



The results from the strategy development process are:

1. A mapping of the current policy, legislative, regulatory and institutional framework and capacity for the integrated management of land, freshwater, coastal and the marine resources of Grenada; all related gaps are identified and a comprehensive set of strategic options are presented;
2. A broad-based consultative process for the drafting and finalization of the proposed strategy is engaged and;
3. A comprehensive Land and Marine Management Strategy for Grenada is developed.

Box 2-2 Key issues for Consideration

In formulating this Strategy the Stakeholders proposed the following issues for special attention:

- Land /sea access, use and tenure;
- Social and economic drivers of land and marine resource use;
- Environmental management for vulnerabilities and resilience;
- Dependency of rural people on the sustainability of natural resources;
- Marine management strategy accommodating recent strategy documents and new policy measures currently being implemented;
- Recognition of the change-of-use of land/sea resources and the place of integrated planning for utilities infrastructure;
- Recognition of capacity-building measures and action plans for supporting the Strategy;
- Planning for the potential outcomes of the Trinidad/Tobago–Grenada Marine Boundaries delimitation Treaty to be done in the context of
 - Exploitation of petroleum resources;
 - Exploitation of Fisheries resources; and
 - Environmental protection/conservation measures related to each and both.
- Recognition of the decreasing role of traditional agriculture as a key livelihood option and the increasing role of the coastal zone and Tourism as having an increasing potential for livelihood and economy;
- The need for reconciliation/convergence of sector and integrated management to make use of functional co-operation (local) among sectors; and
- An integrated monitoring and evaluation framework as a key dimension to the Strategy that is stakeholder-friendly and having greatest ease of participative compliance (especially by the public sector).

STRATEGY FRAMEWORK

3.0 Strategy Framework

3.1 Overall Strategy Goal

To achieve integrated national development that is environmentally sustainable.

3.2 Strategy Objective and Strategy Outcomes

To develop a coherent framework with an appropriate set of strategies that will foster productive and optimal utilization of land, freshwater, coastal and marine resources in an environmentally sustainable manner.

Strategy Outcome 1

- Legislative Policy Framework for Land and Marine Management Developed

Strategy Outcome 2

- Network Administrator Organization (s) Established

Strategy Outcome 3

- Tools for Management of Land and Marine Resources developed

Strategy Outcome 4

- Framework for Planning, Implementation, Monitoring, and Review Developed

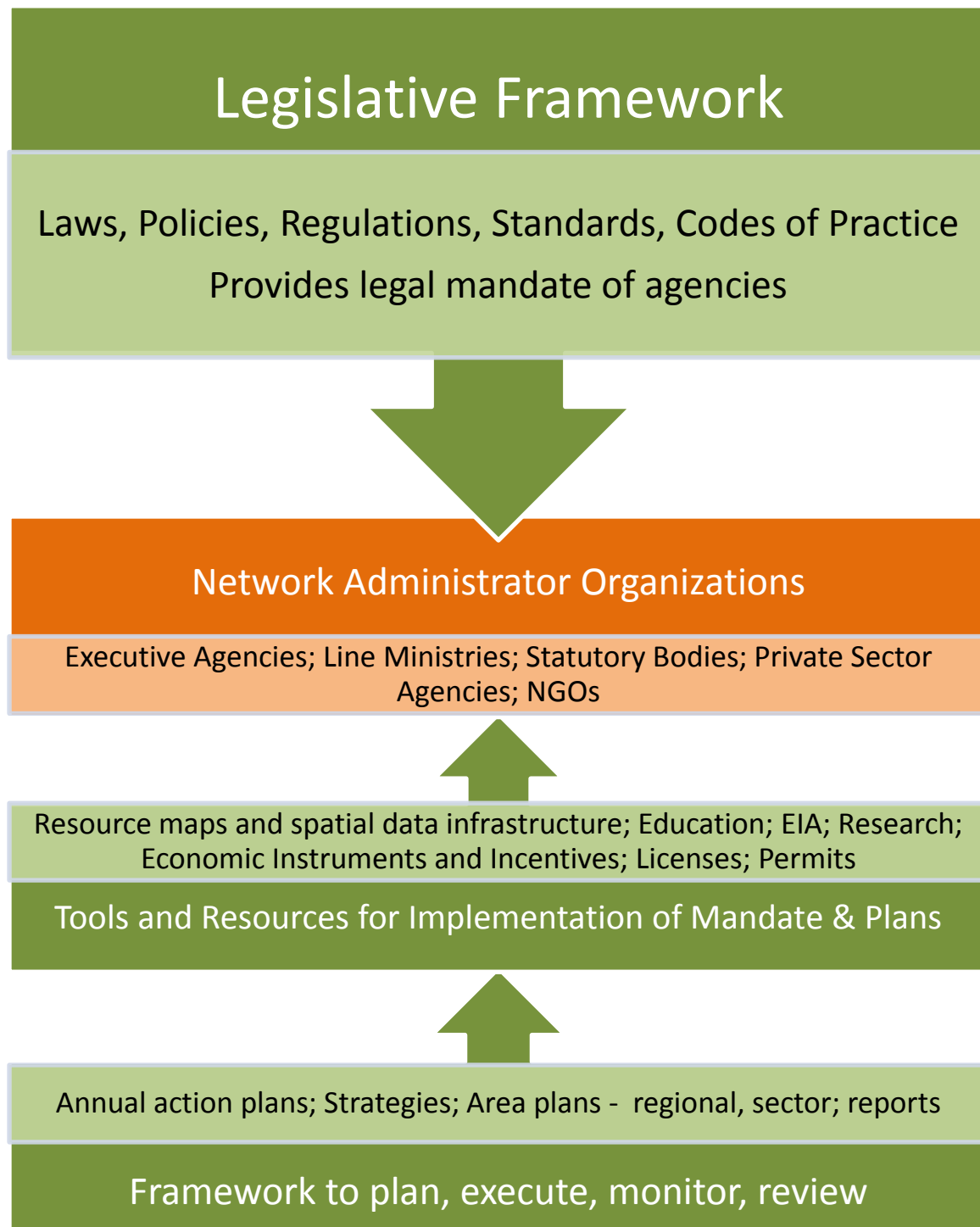


Figure 3-1 Strategic Framework for Land and Marine Management

3.3 Aspirations for the Strategy

It is useful for there to be a common vision for how Grenada's limited land and marine resources should be managed which can help provide a consistent framework for local communities, managers and for policy makers within Government.

Drawing on the responses from the series of consultations and from the situational analyses involved in the strategy formulation process there was an agreed vision for integrated land and marine management.

Our aspirations

- Sustainably managed areas, where competing demands and pressures have been taken into account and the social and economic needs of society have been reconciled with the need for conservation of the natural and historic environment.
- A clear policy and regulatory framework into which the principles of a holistic and coordinated approach are embedded.
- A new strategic management approach in the marine environment which is effectively integrated with the management of the land.
- More consistent application of the best management practices and principles of a comprehensive holistic and coordinated management around the coast.
- A management approach that builds on existing structures and responsibilities whilst encouraging organizations to work better together.
- A flexible management approach which supports local initiatives and solutions to address local circumstances within an overall regulatory framework.
- Appropriate and effective stakeholder and local community involvement

3.4 Guiding Principles

It is our aspiration that the strategy be guided by the following principles of sustainability:

- a) Land management is administered in the context of established property rights: sovereignty of private property on the one hand and public or crown lands as custodial property on the other hand.
- b) Marine management was and is administrated in the context of established property rights: coastal (marine) land as mostly private property on the one hand while the sea bed (as land, according to law), is administered as common property (custodial property). In practice, custodial sea-land is considerably more freely accessible and useable than terrestrial crown lands apart from some small leased sea zones.
- c) Even as the issues of land versus marine management are unique, the need to mend disconnects, to integrate delivery systems, to make policy and policy applications coherent and to provide avenues for inputting participative governance into a consolidated strategy is essential.
- d) Given the short distance and rapid transition from the mountains to the sea, the concept of “Island Systems Management” where the catchment-coastal continuum is managed as a single interactive system, must be employed in decision analysis and selection of best practical environmental management options.
- e) Application of the “precautionary principle”.
- f) Consideration of the “polluter pay principle”.
- g) Recognition of the principle that the “land determines the sea” (access/use).
- h) Recognition of the critical issues concerning user groups sharing both private and common property resources and the conflicts resulting even in the context of existing law and administration.
- i) Consideration of resource utilization in terms of -
 - Valuation of goods and services provided by ecosystems under alternative management scenarios and degradation profiles;
 - Bio-stocks/biodiversity as private and common property;
 - Extractive (exhaustive) and non-renewable resources used for economic reasons;
 - Biological renewable resources in forestry/wild life and in fisheries;
 - Non-consumptive and reserve values for biodiversity and its conservation; and
 - Economic/commercial biodiversity for agricultural stocks.

STRATEGY OUTCOMES AND OBJECTIVES

4.0 STRATEGY OUTCOMES AND OBJECTIVES

4.1 STRATEGY OUTCOME 1 -

LEGISLATIVE POLICY FRAMEWORK FOR LAND AND MARINE MANAGEMENT

4.1.1 Rationale

Grenada has several laws that provide for management of land and marine resources however, there is no umbrella legislation for environmental management. Several institutional reviews and stakeholder consultations have articulated that there is a need for a clear land use policy statement. In 2005 the Government of Grenada approved a National Environmental Policy and Management Strategy as the overarching framework for achieving the goals of sustainable development. To date, no meaningful action has been taken towards the implementation of the policy and strategy as there is no supporting legislation and regulations to make this possible. While Grenada is signatory to -in several stages of implementation- obligations under international conventions and multi-lateral environmental agreements (MEAs), these have not been adopted as national legislation. Additionally, several of the laws that provide for the management of natural resources need to be updated or supported by companion regulations and codes of practice. The recommended legal framework with respect to land, water and marine resources is presented in **Figure 4.1**. The existing laws are presented in **Table 1-1** and only the proposed legislation are listed in the figure on the subsequent page.

4.1.2 Goal - Outcome 1

To create a legal framework for the implementation of the Land and Marine Management Strategy to facilitate development that empowers individuals to exercise their rights and responsibility to protect the environment.

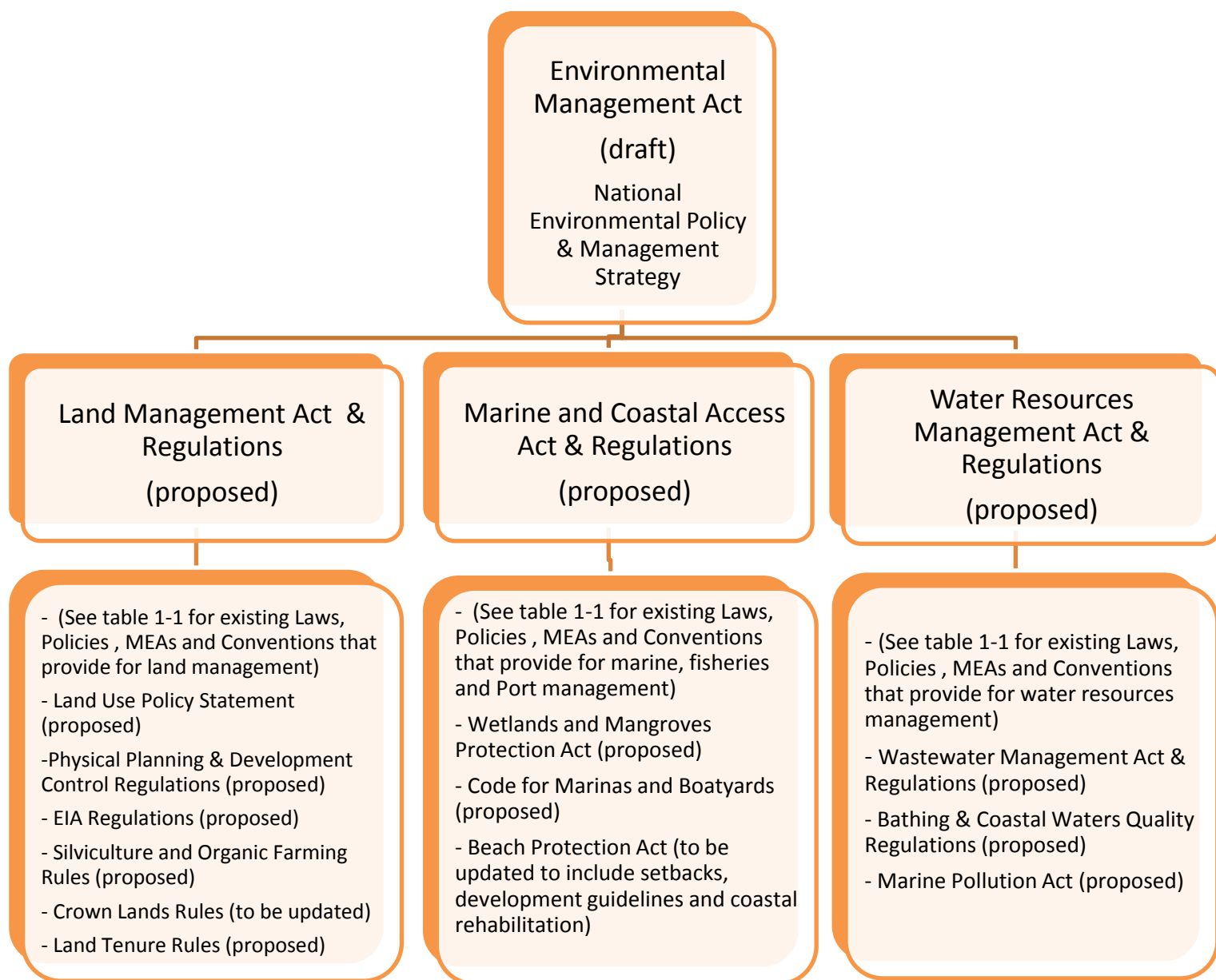


Figure 4-1 Proposed Legislative and Policy Framework for Land and Marine Management

4.1.3 Objectives - Outcome 1

- To enact legislation and companion regulations to formalize the functions and operations of the Ministry of the Environment
- To update and modernize existing legislation that provide for management of land, water and marine resources
- To develop regulations, standards and codes of practice for existing legislation
- To adopt international conventions and multilateral environmental agreements into the national legislative framework
- To formulate a national land use policy statement
- To promulgate new legislation and regulations to address emerging trends and priority issues

4.1.4 Strategic Principles

The respective laws and supporting regulations for management of land, water and marine resources will:

- Be formulated within the political, social, cultural and economic framework prevailing in the country and be grounded in the principles of sustainable development;
- Ensure that all peoples living in the country have the fundamental right to and consequent responsibility for an environment suitable for their health and well-being;
- Provide a framework for formulating, reviewing and updating sectoral laws and regulations for resource utilization to enable sustainable development;
- Provide a broad framework for both punitive and incentive measures;
- Foster regional and international cooperation through agreements, conventions and treaties on sustainable utilization of natural resources and environmental management;
- Provide a framework for encouraging maximum participation of individuals, communities and the private sector in the formulation of policies, laws, development plans and programs for management of the environment; and
- Be consistent with the precautionary principle while making provisions that enables government to declare environmentally sensitive areas/sites as protected.

4.1.5 Enabling factors for Implementation of Outcome 1

As expressed by stakeholders during the strategy formulation process, meeting the objective of this strategy outcome will require concerted efforts by several actors in the short, medium and long term. Recognition is given to ongoing initiatives that will contribute to achieving this outcome thus enabling implementation of the overall Strategy for Land and Marine Management. Among these are:

- Review, updating and creation of Land Legislation to develop the Legal Framework for establishing the Grenada Land Agency - Public Sector Modernization Project funded by the World Bank;
- Review and updating of the Physical Planning and Development Control Act and supporting regulations - Sustainable Land Management Capacity Building Project funded by the Global Environment Facility (GEF);
- Ministry of Environment Program for 2011-2013 - Review of existing legislation and development of regulations, including legalizing this Ministry as the lead organization responsible for coordination of implementation environmental management;
- Development of Water Policy and supporting Legislation as part of project to establish a Water Resources Management Unit - GEF funded Integrated Watershed and Coastal Areas Management Project;
- Establishment of Legal and Institutional Framework for Generating additional Protected Area Financing at the National Level - Sustainable Financing & Management of Eastern Caribbean Marine Ecosystems Project funded by GEF, German Development Bank and the World Bank and implemented through The Nature Conservancy;
- Review and updating of the Beach Protection Act; and
- Review and updating of the Public Health Act with consideration for transferring responsibility for environmental management issues to other relevant Line Ministries.

4.2 STRATEGY OUTCOME 2

NETWORK ADMINISTRATOR ORGANIZATION (S)

4.2.1 Rationale

The organizational arrangements for environment and natural resources management is not well developed and there is need for a lead agency to champion the agenda for sustainable development. In 2008, a Ministry of Environment was established as a department within the Government. It is envisioned that this agency will take up and lead interagency collaboration for land and marine resources management. However, the requisite institutional and human resource capacity for meeting this mandate is lacking. Plans for strengthening the newly established Ministry of the Environment include the hiring of three (3) environmental officers in the upcoming year (2012-2013).

Box 4-1 2011-2013 Program of Ministry of Environment

- Mainstreaming Climate Change into National Development Planning;
- Review of Existing Legislations and the Development of Regulations;
- Develop and Implement Adaptation and Mitigation Projects and Programs to Promote Environmental Responsibility;
- Establish an Environmental Management Information System;
- Integrated Solid Waste Management; and
- Development of a Coastal Zone Management Plan.

Other key network administrative organizations include the proposed Grenada Land Agency and Marine Management Agency. The proposal for the creation of the Land Agency is consistent with an ongoing initiative under the Public Sector Modernization Project mentioned previously. International and regional initiatives promoting the establishment of ocean/marine management agencies at the national level provide the framework and stimulus for the

proposal to setup a marine management agency in Grenada. Further, current development trends and environmental pressures in the coastal zone require that a coordinated mechanism for management of coastal and marine resources is developed. Proposed roles and functions of these agencies are summarized in the sections that follow.

Line ministries such as the Ministry of Agriculture, statutory bodies (e.g. the Grenada Bureau of Standards, National Water and Sewerage Authority, Grenada Solid Waste Management Authority), private sector, NGOs and users of land and marine resources also feature in the network as both clients and customers. Efficiency of the network will be determined by the quality and number of services that are provided to various stakeholders.

4.2.2 Goal - Outcome 2

To create the coordinating mechanisms needed to implement the Land and Marine Management Strategy and to ensure that action can be taken at all appropriate levels of decision making.

4.2.3 Objectives - Outcome 2

- To build institutional capacity within the agency responsible for coordination of environment and natural resource management
- To create efficient network administrator organizations for coordination of land and marine resource management
- To establish and strengthen mechanisms for interagency collaboration
- To increase efficiency in the provision of service to clients and customers including line ministries, statutory bodies, private sector, NGOs, communities and individuals
- To improve the rational use and sustainable management of land resources

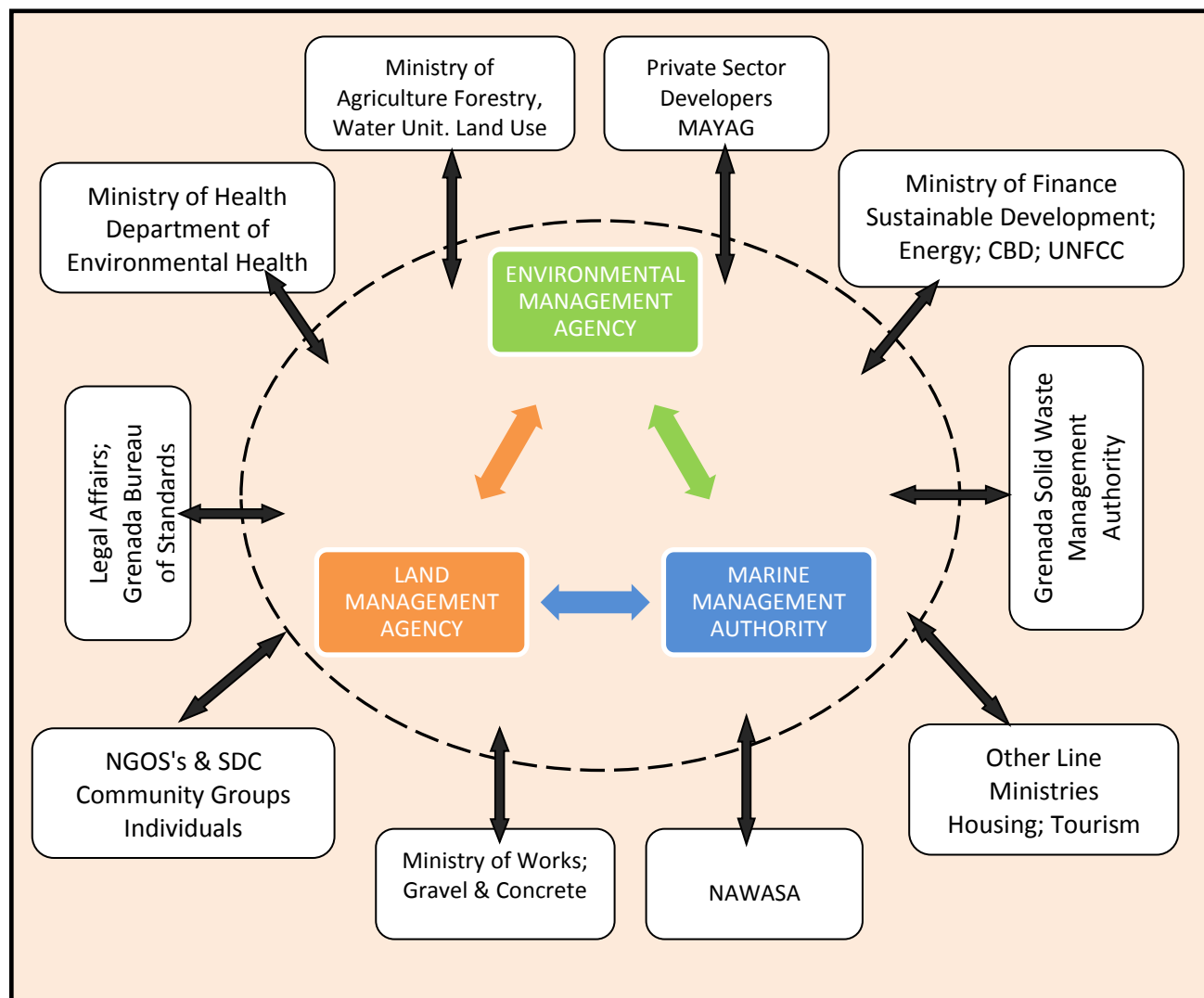


Figure 4-2 Proposed Network Administrative Organizations

Inter-organizational networks have become a common mechanism for delivery of public services. Networks deliver services through formal and informal arrangements to clients, stakeholders and agents at the community level and to participant organizations in the network.

4.2.4 Strategic Principles - Outcome 2

- Environmental management needs strong leadership and a powerful voice not only for advocacy for environmental protection and conservation but also to ensure effective cross-sector coordination;
- The Environmental Management Agency (Ministry) should avoid implementing activities that can be implemented by sector departments and agencies;
- Formulation of overall environmental policies and coordination of environmental activities of sector ministries can best be achieved from organizations that have a very high profile within the national governance and administrative structure;
- Land and Marine Management agencies should be seen as professional bodies whose opinions are considered as such and should be beyond individual, political and business persuasions;
- Agencies must be legally constituted and derive their authority under provisions of broad legal frameworks for environmental management. They should have a legal mandate to enforce compliance with national standards and have legal authority to enforce remediation whenever there is non-compliance; and
- There must be close links and liaison between land and marine management agencies and all line ministries, NGOs, the private sector and local communities.

4.2.5 Enabling factors for Implementation of Outcome 2

Building efficient management agencies backed by the relevant legal mandate and resources is expected to be phased over a period of time. By linking the objectives of the Land and Marine Management Strategy with those of ongoing initiatives designed to address the same policy goals and objectives of sustainable development, it is anticipated that there will be momentum and shortened timeframe to achieve success. Enabling activities include:

- Regional Disaster Vulnerability Reduction Project - The project is being co-financed by the World Bank and the Climate Investment Fund to the tune of USD\$26.2 million (EC\$70.4M).

This includes a grant of USD\$8 million (EC\$21.6M). The program will be implemented over a five (5) year period and two of the complementary activities are:

- Strengthening capacities of public institutions to develop proper policies and plan effectively to build resilience to natural disaster.
 - Strengthening collaboration nationally, regionally and internationally on a wide range of climate related impact and environment issues such as coastal zone management, watershed management, building practices, legislative framework, among others.
- OECS Sustainable Ocean Governance (SOG) program will provide stimulus and attract donor finance for developing the institutional framework for creation of national marine and ocean management entities.
- The 2011-2013 program of the Ministry of the Environment fits within the overall goal and objectives of the Land and Marine Management Strategy. Legalizing and strengthening this agency will contribute towards implementation of the priorities herein discussed. Overall function of the Ministry are:
 - General Oversight over Line Ministries that Deal with Environmental Issues and MEAs; and
 - Initiate the process of dealing with other environmental issues and MEAs that are NOT covered by other Line Ministries.
- Grenada Land Agency has approval from the Cabinet and is expected to be established June 2012. A three-year business plan for the Agency is completed and recruitment of the Executive Director and senior management staff is underway.

4.2.6 Recommendations for the Environmental Management Agency

Given that environmental protection must be addressed as a cross sector priority issue and that roles and responsibilities for environmental management is shared by several ministries and agencies, there is need for a multi-disciplinary *technical* advisory council or board (TAC) to spearhead the work of the lead Environmental Management Agency (Ministry). The Council/Board will have statutory duties and terms of reference prescribed in the

Environmental Management Act (to be enacted). Composition of the TAC must be institutional and functional and must NOT represent individual or political interests. The day to day actions required to facilitate implementation of the national environmental policy, management strategy and action plan will be undertaken by the permanent staff of the Environment Agency. The TAC will be responsible for reviewing, approving and monitoring all environmental and development projects including environmental impact assessments (EIA) for the same. As such, the TAC will replace the functions of the Environmental Review Committee under the provisions of the Physical Planning and Development Control Act. Special cross sector technical sub-committees and/or working groups can be established to implement specific projects from time to time.

It must be reiterated that the role of the Ministry is coordination, regulation, monitoring and not implementation. The Environment Management Agency (Ministry) with oversight from the TAC must be provided with the necessary resources to carry out its mandate through the following actions:

- a) Advise government on all environmental matters through collaboration with line Ministries;
- b) In close collaboration with line Ministries and other stakeholders, facilitate review and formulate environmental policies and strategies for consideration by the Government;
- c) Assist sector Ministries to integrate environmental considerations into their sector strategies;
- d) Develop institutional linkages, coordinate and liaise with line Ministries, local governments, local committees, the private sector, the NGO community, and international and bilateral donors;
- e) Assist line Ministries and agencies to develop guidelines for their respective environmental management and protection functions; and
- f) Advise concerned Ministries, agencies or otherwise duly authorized agencies in enforcement of environmental legislation, regulations and standards; monitor

compliance with environmental legislation and arbitration of environment-related conflicting interests;

- g) Monitor adherence to international treaties and agreements, provide relevant information and advise the concerned ministries or agencies regarding new regional or international agreements on environmental issues;
- h) Enhance national capacity for environmental management through the promotion and coordination of environmental training, formal and non-formal education; enhance environmental awareness among all sectors of the Grenadian society;
- i) Advise government and support initiatives on decentralization as it relates to the environment (i.e. strengthening district capacity for environmental management, enforcement of standards, community environmental activities, environmental extension to villages and/or farmers);
- j) Ensure that sectoral policies and supporting legislation to be implemented by line Ministries, departments and other institutions are consistent with and support the guiding principles and specific provisions of the National Environmental Policy and Management Strategy;
- k) Facilitate the coordination and harmonization of the policies, plans and activities of non-governmental organizations (NGOs), the private sector and individual actors in the environment and natural resources fields;
- l) Promote the formation and functioning of various environmental committees i.e. Village, Area and Parish Environmental Committees, in order to ensure coordination at the local level and effective public participation in environmental decision-making processes and implementation;
- m) Ensure that all line Ministries and other agencies establish environmental focal points in order to achieve strong linkages on environmental concerns and close working relationships with the Ministry; and
- n) Establish professional organizations for individuals and organizations that provide environmental management services to public and private sector organizations to ensure quality and consistency with national policy objectives.

4.2.7 Proposed Grenada Land Agency

Grenada Land Agency will be created by bringing together all the key agencies involved in the administration of land in country namely: Deeds and Lands Registry, Lands and Survey Unit, Physical Planning Unit, Cadastral Survey/Valuations Unit. The vision for GLA is to be a modern Land Management Agency supporting the sustainable development of Grenada. GLA's mission is to build and maintain an efficient National Land Management System that is accessible 24/7 to all stakeholders and provides citizen centric service delivery. The Objectives of the Agency are:

- **Service Delivery:** To be a citizen-centric agency that provides services in an efficient and transparent way with a focus on its clients: the citizen, investors, government agencies and visitors to Grenada.
- **Land Registration:** To build and operate an efficient and secure land registration system that can transform into a land titling system that will guarantee security of tenure.
- **Land Valuation:** To build and operate a national land valuation system that provides for equitable property taxation.
- **Crown Lands:** To build and operate a crown land management system that ensures optimal use of government-owned lands.
- **Planning & Development:** To ensure the orderly physical development of Grenada in accordance with sustainable development principles and national social, environmental and economic policies.
- **National Land Data & Revenue Center:** To build and maintain the foundation of a national spatial data infrastructure to share with the community and to ensure that all land related revenues are collected on a timely basis.

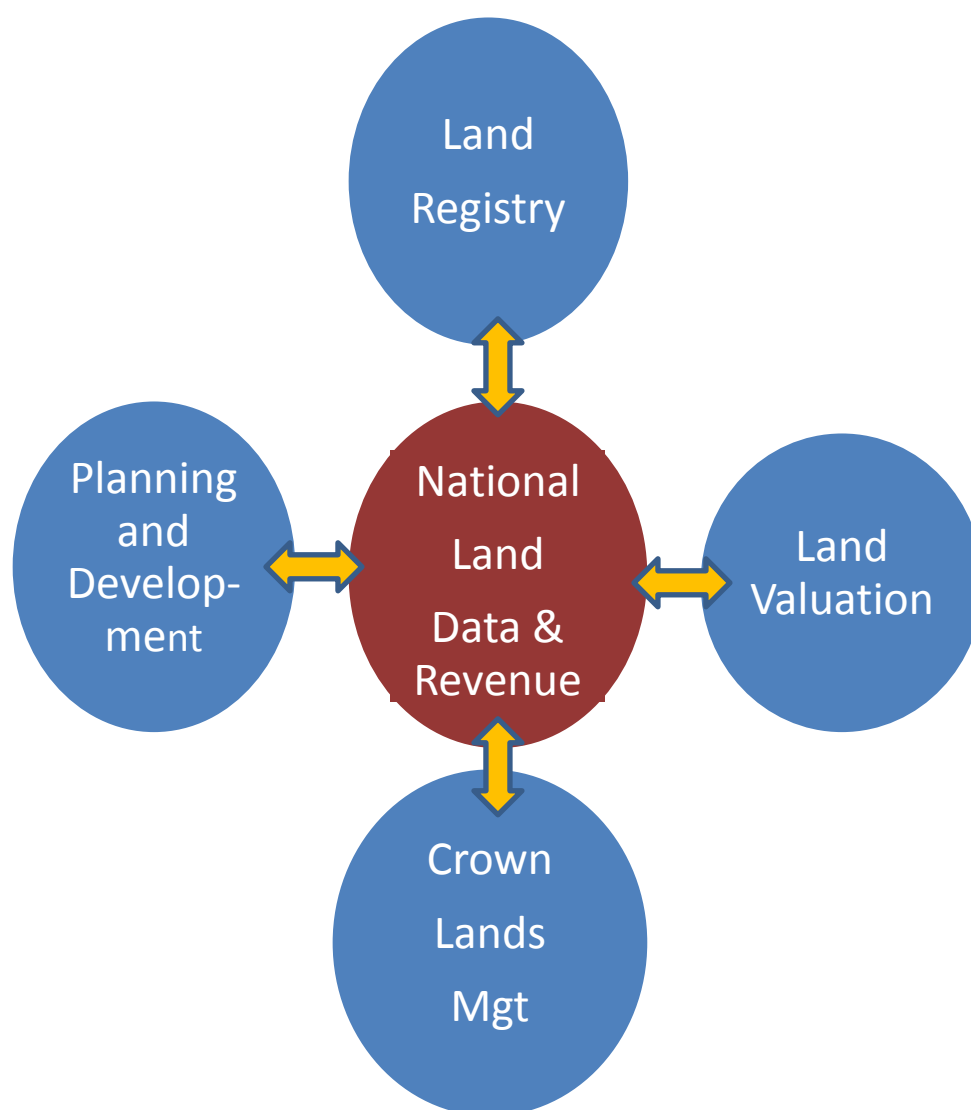


Figure 4-3 Core functions of Units that make up the GLA

4.2.8 Recommended functions of Marine Management Agency

The Marine Management Authority (MMA) will bring together all agencies responsible for utilization of marine and coastal resources in Grenada. It is proposed that a Marine and Coastal Access Act (bill) be promulgated that will legitimize the functioning of the MMA. To regulate development and use of resources in the coastal zone the MMA will establish a Coastal Zone Management Unit. Other agencies and entities functioning under the jurisdiction of the MMA

will include the Grenada Ports Authority, Fisheries Department, Grenada Marina and Yachting Association and a department to deal with Maritime Boundaries and the EEZ. The work of these agencies will be supported by the Grenada Coast Guard and the National Disaster Management Agency (NADMA).

Several options may be considered for the organizational arrangements for the MMA. Those options will provide for the implementation of the marine component of the Land and Marine Management Strategy through the following functions and actions:

- a) Advise Government on all matters related to use and development of coastal and marine resources in the state of Grenada;
- b) Promulgate a Marine and Coastal Access Act that will introduce a new system of marine planning which will be the key tool for the Government of Grenada to achieve its vision for strategic management of the marine environment;
- c) Develop a Marine Policy Statement using information about spatial uses and needs in those areas;
- d) Develop and implement a new system of marine spatial planning within the national environmental policy framework that will allow for linking marine and land planning particularly for marine protected areas;
- e) Marine plans will guide decisions on license applications and other issues and provide users of the sea with tradable permits and rights;
- f) Adopt international agreements and conventions on the law of the sea, trans-boundary movement of waste, pollution prevention among others;
- g) Develop a Code of Practice for Marinas and Boatyards; and
- h) Promulgate regulations for protection and use of coastal wetlands and mangrove ecosystems.

4.3 STRATEGY OUTCOME 3

TOOLS FOR MANAGEMENT OF LAND AND MARINE RESOURCES DEVELOPED

4.3.1 Rationale

Execution of laws and regulations will be difficult if relevant agencies do not have companion tools and resources to carry out their mandate. At present there is limited data available on the status of natural resources and there are no functional repositories for accessing what exists. One very usable model is evident in the economic instruments and incentives that have been successfully applied to develop a cost-recovery mechanism for the introduction of the national solid waste management program. This mechanism can be widely adopted to improve delivery in services for protection of the environment providing that the revenue generated is used for the intended purpose.

Education and public awareness are cross cutting issues that must be systematically addressed at the level of the resource manager all the way through to policy makers and user groups. Coupled with standards and codes of practice, it is expected that cultural norms that are exploitative will give way to best management practices for sustainable livelihoods. Decision making can then be informed by resource maps and assessments and spatial plans for both land and marine resources.

4.3.2 Goal - Outcome 3

To develop and widely utilize tools for creation of a seamless integrated system for management of Land and Marine Resources.

4.3.3 Objectives - Outcome 3

- To provide reliable data on the quantity, degradation status and availability of natural assets to enable effective management and efficient use of limited resources.
- To create repositories and access portals for information on natural resources that is real-time and can be easily manipulated for forecasting changes in the environment.

- To promote awareness and understanding of the need for sustained environmental protection, conservation and management.
- To provide the best practical environmental options (BPEO) for management of limited resources cognizant of socio-economic factors, cultural values and beliefs held on the environment.
- To ensure that individuals and economic entities are given appropriate incentives for sustainable resource use and environmental protection.
- To develop a system and guidelines for strategic environmental impact assessment(s) so that adverse environmental impacts can be eliminated or mitigated and environmental benefits enhanced.
- To create a seamless geographic information system for land and marine spatial planning for Grenada, Carriacou and Petit Martinique.

4.3.4 Strategic Principles - Outcome 3

Natural Resource Assessment

- Natural resources and environmental assets are limited and as such their utilization must be guided by regular assessments
- Sector resource assessment reports must be developed to guide strategic plans for allocation of best use and management

Information Management

- Information management is critical for institutional memory and enabling effective development planning
- Quality data is required for tracking changes in environment, for forecasting trends and decision taking on resource use and/or conservation

Standards and Codes of Practice

- Standards and codes of practices must be guided by the precautionary principle for resource utilization.

- Periodic review and updating must be undertaken for all standards and codes of practice in keeping with changes in environmental quality as reflected in the delivery of goods and services.

Environmental Education and Public Awareness

- The cultural values and beliefs held on the environment shall inform the format and delivery of environmental education and public awareness programs.
- Environmental education shall be taught on a multi-disciplinary basis and integrated into on-going curriculum review at the pre-school, primary, secondary and tertiary levels.
- Environmental education and awareness shall be promoted through formal and informal education channels by all government organizations, NGOs, and the private sector.
- An environmental education and public awareness program shall be targeted to all those in public and private sectors whose activities affect the environment in one way or another as well as to the general public.

Economic Instruments and Incentives

- Economic incentives can often induce changes in the behavior of people and economic entities more effectively than enforcement.
- Priority will be given to establishing an enabling economic environment in which market prices provide appropriate incentives for sustainable natural resource use and environmental protection.
- Implementation strategies will focus more on establishing an appropriate economic environment to promote sustainable natural resource use and less on traditional government-run development projects.
- Prices should reflect opportunity costs and externalities.
- Market failure with regard to the pricing of natural resources will be corrected through the assessment of user fees and taxes or the use of tax reductions and other incentives.

- Government departments and local communities shall have the right to revenue generated from sustainable utilization of natural resources on public and customary lands in order to provide positive incentives and self-financing for such continued use.

Environmental Impact Assessment (EIA)

- EIA(s) will be required by the Physical Planning and Development Control Act (2002) to ensure that public and private sector development options are environmentally sound and sustainable and that any environmental consequences are recognized early and taken into account in project design and implementation.
- EIAs will consider not only biophysical impact but will also address environmental impact in terms of existing social, economic, political and cultural conditions.
- Natural hazard impact assessment will be included for as part of the EIA process for development plans and projects.
- Environmental Mitigation Plans will be required for all activities where the EIA has determined a negative environmental threshold.
- Environmental Audits, including inspections, record-keeping and monitoring will be required for activities as determined by the mitigation plans or otherwise.
- Environmental Impact Assessments and Statements shall be made public and comments invited and considered as part of the project approval process.
- EIA procedures should be cost effective, appropriate, reasonable and commensurate with the size, scope and relative impacts of the project or program in question.

GIS and Spatial Planning - Land Use

- Land Use Plans must adopt a watershed management approach so that externalities from one system do not negatively impact another.
- Protected watershed plans must be created for adjacent marine protected areas so that land based sources of pollution are minimized or eliminated where possible.

- Land use plans will guide development away from vulnerable areas and give consideration to future natural hazard and climate change impacts.
- Environmental and natural hazard impact assessments must be conducted for all land use plans.
- Forward plans for zoning of land use must include mitigation banking and securing land for solid and hazardous waste landfills and public as well as private cemeteries. The designation of land for these uses must be informed by strategic environmental impact assessments

GIS and Spatial Planning - Marine Planning

- Marine planning will clarify our marine objectives and priorities for the future, and direct decision-makers and users towards more efficient, sustainable use and protection of Grenada's marine resources.
- Marine planning will encompass all marine activities, including the way in which activities interact, the conflicts between them, and their cumulative impacts.
- Marine Plans developed within the national environmental policy framework will lead the process of joining up between marine and land planning.
- Marine Plans will both have regard to the specific marine protected area plans and watershed managements so that land based activities are considered.
- Marine Plans will guide decisions on license applications and other issues, and provide users of the sea with more certainty.
- Marine planning will offer new opportunities for coastal regulators and communities to have a voice in management of Grenada's marine environment similar to their contribution into land planning at the coast.
- A participatory planning approach from an early stage will ensure greater transparency and enable increased public understanding of the marine environment.
- The proposed Marine Planning Authority will be required to ensure, as far as reasonably possible, compatibility with adjacent terrestrial plans.

- Plans prepared by a public authority or private developer in that marine plan area must be consistent with the national marine spatial plan of the Marine Authority. This will facilitate integration and include national development planning within the National Development Framework, Coastal zone Management Plans, and Watershed Management Plans.

4.3.5 Enabling factors for Implementation of Outcome 3

- Land data infrastructure will be developed as one of the priority areas for Grenada's Land Agency. This will create a common platform for all agencies involved in land management to share and access real time data.
- The marine-ecosystem project funded by the World Bank and coordinated by The Nature Conservancy is expected to contribute towards marine spatial planning and mapping of resources for improved management of marine protected areas (MPAs) and for the creation of new ones.
- As part of the 2011-2013 program of action the Ministry of Environment plans to address the issue of information management and build a platform for the same.
- Environmental Education and Public Awareness initiatives are presently being conducted under the Sustainable Land Management Capacity Building project. It is expected that all environmental project initiatives will contain a component of education and awareness building thus contributing to the objectives of the Strategy.
- Economic Valuation studies have been conducted for pilot watersheds in protected areas. The lessons learnt and output from these initiatives which were spearheaded by the Forestry Division within the Ministry of Agriculture starts the process for including the value of environmental goods and services in national development planning and decision making frameworks.

4.4 STRATEGY OUTCOME 4

FRAMEWORK FOR PLANNING, EXECUTION, MONITORING, AND REVIEW

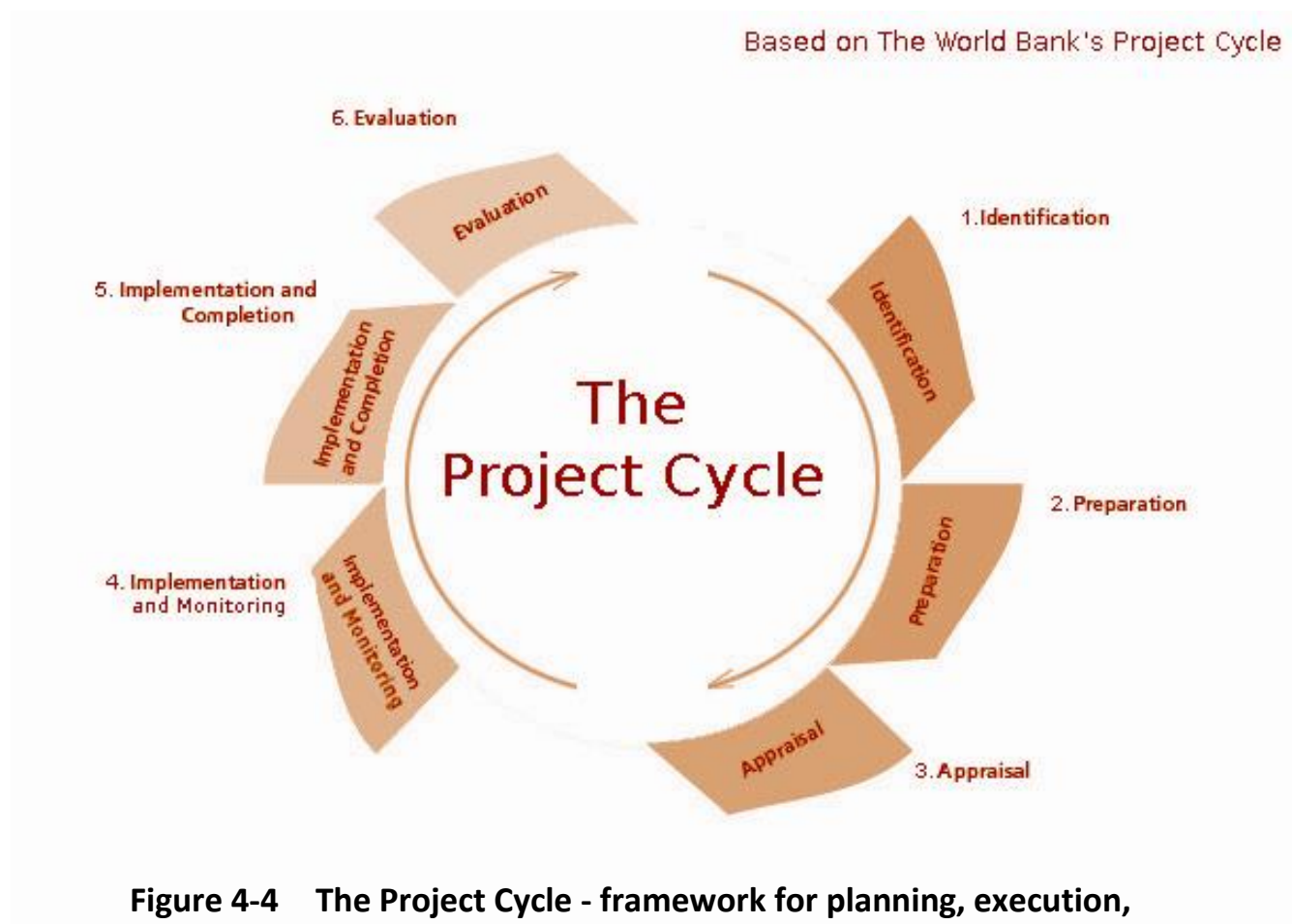
4.4.1 Rationale

A combination of factors contribute to low implementation rate for national plans, policies and strategies. Chief among them being lack of adoption of an integrated approach to planning. There is limited adoption of decision support tools such as the driving pressure state impact response (DPSIR) framework, Logical Framework Approach (LFA), Economic or Trade-off analysis as core tools in formulating national development plans. Planning is largely undertaken at the sector level within line Ministries and then fed into national budgets. There is no formal mechanism for inter-sector planning and execution of projects nor for monitoring and reviewing progress made in implementation. To ensure that the Land and Marine Management Strategy contributes to meeting the goal of integrated national development that is sustainable, planning and decision taking must be deliberative so that execution can be monitored and reviewed.

The Land and Marine Management Strategy must be reviewed within two years to evaluate progress in implementation of the various actions and progress towards meeting the overall objectives and goal. This process must be led by the key agencies within the network administrator organizations with active participation from line Ministries, statutory bodies, NGOs, private sector and individuals involved in resource management and development. The project cycle provides an approach for using the different decision support systems and analysis tools at various stages (**Figure 4-4**)

4.4.2 Goal - Outcome 4

To facilitate continuity and sustainability in the implementation of plans, programs, policies and other instruments that promote efficient management of land and marine resources.



4.4.3 Objectives - Outcome 4

- To utilize decision support systems (DSS) for selection of policy responses so that they are not mal-adaptive and foster sustainable development
- To include environmental economic analysis as part of monetary valuation in evaluation plans and projects
- To develop distributional and trade-off analysis procedures that involve stakeholders across all levels of participation in development planning
- To include environmental change and future scenario analysis in planning, execution, monitoring and review of development projects

4.4.4 Strategic Principles

- An annual State of the Environment Report and national spatial plans (land & marine) will be the guide for national development planning and the implementation of development programs.
- The dynamic and changing nature of socio-economic development needs and ecosystem balance requires that the Land and Marine Management Strategy as well as sector strategies are constantly reviewed to meet the stated goal.
- Local and watershed specific environmental action plans are formulated with consideration of local concerns and needs and are disseminated to the public.
- Ensure that local and watershed management plans are consistent with national development policies and priorities.
- Adequate capacity building is critical in planning, impact assessment, monitoring, evaluation and review in the core Ministries and other relevant sectors.
- The Logical Framework Approach (LFA) and multi-level trade-off analysis must be used in scoping the needs of stakeholders simultaneous with analysis and option selection.

4.4.5 Enabling factors for Implementation of Outcome 4

- The National Strategic Development Plan for Grenada which was finalized for implementation in 2007 is presently being reviewed to be updated by November 2011. This is timely and provides an opportunity for integration of the Land and Marine Management Strategy for Grenada into the national development project cycle.
- National stakeholder consultations are being undertaken starting from October 2011 as part of the process for preparation of a national sustainable development plan leading up to the Rio+20 global summit on sustainable development. The aspirations of stakeholders for management of land, water and marine resources as articulated by this Strategy must be incorporated into the objectives of the national sustainable development plan.

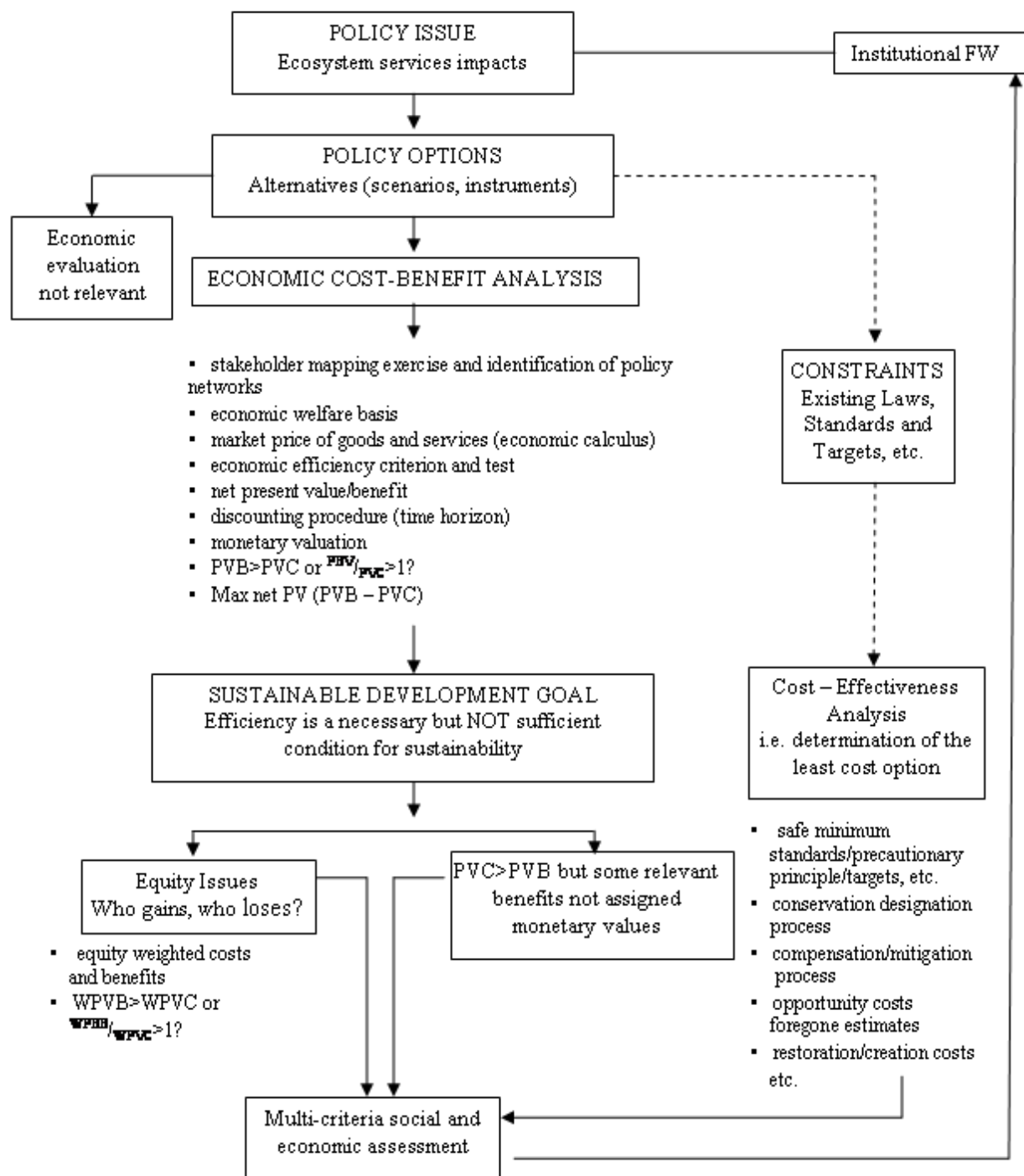


Figure 4-5 Framework for Social and Economic Assessment within Integrated Environmental Management and Planning, Turner *et al* 2010

REQUIREMENTS FOR STRATEGY IMPLEMENTATION

5.0 Requirements for Strategy Implementation

5.1 Interagency Collaboration

The challenges related to effective management of land and marine resources cross several sectors often with competing interests. At present there is no formal mechanism for inter-sector collaboration for project planning, execution and monitoring progress. It is envisioned that the network administrative organizations will provide strong leadership so that there is interagency collaboration in planning, resource mobilization and allocation.

5.2 Financial, Human and Technical Resources

There are always national socio-economic development priorities that compete for resources needed to enable adequate environmental management. It is therefore necessary to integrate natural resource management across all sectors and to include it as part of sector and national development planning. In order to implement the Land and Marine Management Strategy synergies must be achieved with existing projects that seek to meet the same objectives.

5.3 Adoption by Cabinet

In order for the Strategy to be adopted as a national policy document there must be buy-in from all stakeholders and approval from the Cabinet of Ministers. There is need for strong leadership and political will for firm decision-taking with respect paradigm shifts and change in the present mode of operation for environmental management.

5.4 Enabling factors and constraints

Implementation of this Strategy will benefit from outputs developed by the Sustainable Land Management Project and initiatives for the development of a Land Management Agency for Grenada. Strategic options for creating a network administrative organization for environmental management is consistent with the objectives of the National Environmental Management Strategy for Grenada. There are current projects underway for capacity building and strengthening of the Environmental Ministry that are consistent with the objectives of this

Land and Marine Management Strategy. Notwithstanding current initiatives, interest for investments in environmental quality appears to be low as evidenced by the reduced priority given to key sectors and stakeholders at the forefront of natural resource utilization. This implies that strong leadership is needed to champion the agenda for adoption of the strategy and for environmental management for sustainable development as a whole.

ACTION PLAN FOR IMPLEMENTATION

6.0 Recommendations for Implementation

Given that there are ongoing initiatives for which resources have already been mobilized for implementation, several of the proposed actions for this Strategy can be readily undertaken. Actions that require inclusion in project cycles and budget programming are expected to take longer to be executed. Some actions are secondary steps that must be implemented after progress is made with higher priority activities. Environmental education and public awareness must be ongoing and require a national strategic approach infused across all sectors and levels of society.

A phased approach is thus presented for implementation of the action plan for the Land and Marine Management Strategy for Grenada:

- Phase I - Short term: actions of ongoing projects 1-2 years
 - Review and updating of Legislation
 - Strengthening and creation of network organizations
 - Environmental Education and Public Awareness
 - Development of Management Plans
- Phase II - Medium term 3 to 5 years
 - Development of Regulations, codes of practice
 - Review and evaluation of Phase I; Strategy update
- Phase III - Long term 5 to 10 years
 - National spatial plans fully developed
 - Organizations fully functional and Strategy implemented

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STRATEGY OUTCOME 1 - LEGISLATIVE POLICY FRAMEWORK FOR LAND AND MARINE MANAGEMENT DEVELOPED

GOAL: To create a legal framework for the implementation of the Land and Marine Management Strategy to facilitate development that empowers individuals to exercise their rights and responsibility to protect the environment.

STRATEGY OUTCOME	OBJECTIVES	ACTIONS FOR IMPLEMENTATION	RESPONSIBLE AGENCY	TIMEFRAME
Outcome 1: Legislative Policy Framework Developed	1. To Enact legislation to provide the mandate for the Ministry of the Environment to serve as the focal agency to coordinate environmental management and by extension sustainable development	1.1 Review draft Environmental Management Act and update to reflect current organizational arrangements 1.2 Develop regulations with terms of reference for key personnel required to implement the Environmental Act 1.3 Develop regulations to include considerations for international conventions and MEAs 1.4 Develop regulations for establishing an Environmental Fund 1.5 Constitute inter-sector Advisory Committees and formalize terms of reference with appropriate regulations 1.6 Conduct consultations with stakeholders on draft legislation and regulations 1.7 Promulgate Environmental Management Act and supporting regulations 1.8 Amend Grenada's constitution to Include individual rights for a clean and healthy environment and their duty to protect the same.	Legal Affairs Department (LAD); Ministry of Environment (MOE); Constitution Review Committee	Phase I 2011 - 2013

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Outcome 1: Legislative Policy Framework Developed	OBJECTIVES	ACTIONS FOR IMPLEMENTATION	RESPONSIBLE AGENCY	TIMEFRAME
	2. Develop Land Use Policy Statement through broad based stakeholder participation.	2.1 Compile existing legislation that contain provisions for administration, tenure, use and management of land 2.2 Conduct public awareness programs on legislation for land administration 2.3 Prepare draft Land Use Policy Statement 2.4 Achieve consensus and finalize Policy 2.5 Adopt by Parliament 2.6 Publish and conduct public awareness programs on the Policy	Grenada Land Agency (GLA); Ministry of Agriculture (MOA) Forestry and Land Use; LAD	2.1: 2011- 2012 6 months 2.2: 2012 - 2013 1 year 2.3: 2012 2.4: 2013 2.5: 2013 2.6: 2013-2014
	3. Conduct Education and awareness programs on the laws and regulations that provide for effective natural resource utilization and management.	3.1 Conduct survey on knowledge, attitude, practice on environmental issues, local laws and policies with wide cross section of stakeholders 3.2 Develop public education and awareness program based on findings of survey 3.3 Develop training program for public sector officials on the legal framework for land and marine resources management	Ministry of Environment; LAD	2012 2012 2012-2013
	4. Publish laws and regulations in easy accessible formats for various users (brochures; website; booklets; manuals)	4.1 Prepare summary brief on the provisions of laws for land and marine management. 4.2 Publish brochure with list of laws for land and marine management 4.3 Develop booklet with summary brief on environmental and natural resource management laws	LAD; Government Printery; MOA; MOE; GLA; GPA	2011-2012 2011 2012

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		4.4 Publish manual with laws and regulations for managers, heads of departments and key staff		2012
		4.5 Publish brochure on official website of relevant Ministries and departments		2012
	5. Promulgation of laws and regulations as follows:	5.1 Enact Water Resources Management Act to provide for the operations and functions of the Water Resources Unit 5.1.1 Develop regulations for catchment protection 5.1.2 Develop regulations and fee system for user rights to water resources 5.1.3 Develop regulations for protection of groundwater resources	NAWASA; MOA; Ministry of Health (MOH)	2013
		5.2 Enact Wastewater Management Act update and/or repeal public health regulations for wastewater management 5.2.1 Develop regulations including guidelines for domestic wastes for single residential units and multiple units 5.2.2 Develop regulations, wastewater quality standards and discharge permits for industrial wastes 5.2.3 Develop regulations for agricultural wastes including livestock farms 5.2.4 Develop regulations for sub-divisions and housing developments 5.2.5 Develop regulations for commercial wastes including hotels and restaurants		

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		5.2.6 Develop code of practice and design standards for wastewater treatment systems and plants		
		5.3 Enact Bathing and Coastal water quality Act 5.3.1 Develop regulations for activities not permitted in bathing areas 5.3.2 Develop regulations and water quality standards for fresh water bodies 5.3.3 Develop regulations and water quality standards for beaches and coastal bathing areas	NAWASA; Ministry of Health (MOH); Grenada Bureau of Standards (GBS); MOT: GBT	2013-2014
		5.4 Enact legislation for Protection of wetlands, mangroves and coastal habitats 5.4.1 Develop regulations to define boundaries and land tenure rules for wetlands, mangroves and coastal habitats 5.4.2 Develop regulations to guide and restrict development of wetlands, mangroves and coastal habitats that border private lands	MOA; MOE; MMA	2013-2014
		5.5 Adopt Code of Practice for Development and Operation of Marinas and Boatyards 5.5.1 Review and update IMO code of practice for marinas and boatyards in the Caribbean 5.5.2 Conduct consultations with industry stakeholders 5.5.3 Promulgate code of practice for marinas and boatyards	MMA; GPA	2013

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		5.6 Enact Marine Pollution Act 5.6.1 Review draft Caribbean Marine Pollution Act and make revisions to suit local institutional framework 5.6.2 Conduct consultation with key stakeholders to get feedback and build consensus on Act 5.6.3 Conduct public awareness program on Act with marine and shipping stakeholders to encourage voluntary compliance	MMA; GBS; MOH; MOE	2012-2013
		5.7 Develop Silvi-culture and Organic farming rules 5.7.1 Produce visual aids and brochure on best practices for soil and land conservation for farmers	MOA; Grenada Organic Agriculture Movement (GOAM)	2013-2013
	6. Update existing legislation and develop supporting regulations:	6.1 Crown Lands Ordinance to include arrangements for management of State owned land	GLA; LAD; MOA Forestry and Land Use	2013-2014
		6.2 Land tenure including transfer rights and procedures for formalizing unregistered lands	GLA; LAD	2013
		6.3 Solid Waste Management Bill including regulations for management of liquid and hazardous wastes	MOH: Grenada Solid Waste Management Authority (GSWMA)	2012-2013
		6.4 Beach Protection as it relates to beach sand mining and including guidelines for coastal development and restoration of degraded coastlines	Ministry of Works (MOW); PPU	2013
		6.5 Forest, Soil and Water Conservation include regulations for land development in water catchments and	MOA	2012-2013

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		protected watersheds		
		6.6 Gravel and Concrete Emulsion Corporation - subsidiary regulations as it relates to development and rehabilitation of closed quarries to functional ecosystems	MOW; PPU; MOE	2014-2015

STRATEGY OUTCOME 2 - NETWORK ADMINISTRATIVE ORGANIZATIONS ESTABLISHED

GOAL: To create the coordinating mechanisms needed to implement the Environmental Management Act and to ensure that action can be taken at all appropriate levels of decision making.

STRATEGY OUTCOME	OBJECTIVES	ACTIONS FOR IMPLEMENTATION	RESPONSIBLE AGENCY	TIMEFRAME
Outcome 2: Network Administrative Organizations established	1. To build institutional capacity within the agency responsible for coordination of environment and natural resource management	1.1 Develop business plan for Ministry of Environment consistent with sector strategic plans 1.2 Based on business plan identify human, technical and financial resource requirements 1.3 Develop training program for personnel including education on national legislative framework for natural resources management and related areas	MOE; MOF	2011-2013
	2. To create efficient network administrator organizations for coordination of land and marine resource management	2.1 Establish formal committee for planning and tracking progress in implementation of the Land and Marine Management Strategy 2.2 Establish Land Agency in keeping with plans already underway 2.3 Undertake consultations with key	MOE; MOF; MOG - Fisheries; GPA; OECS SOG; Foreign Affairs; Legal Affairs	2011 2012

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		stakeholders at the regional and national level to determine framework for Ocean/Marine Management Agency		2012-2013
		2.4 Establish Marine Management Agency		2013-2014
	3. To establish and strengthen mechanisms for interagency collaboration	3.1 Map and formalize procedures and mechanism through which stakeholders collaborate; sign MOUs 3.2 Establish interagency committees working groups and task forces to plan work programs and to review progress in implementation of projects 3.3 Develop online and hardcopy directory of stakeholders including links to websites 3.4 Develop portal for accessing information on projects and programs being undertaken by different agencies, NGOs and community groups	MOE; MOA; MOE; MOA; MOW MOE MOE	2012 2012 2012 2011 - ongoing
	4. To increase efficiency in the provision of service to clients and customers including line ministries, statutory bodies, private sector, NGOs, communities and individuals	4.1 Set bench marks and customer performance targets for Network organizations and line Ministries 4.2 Hire public relations officers and train all staff in customer relations 4.3 Develop mechanism for public reporting on environmental problems and issues 4.4 Develop log with profile on environmental problems and management issues and provide public report on progress in resolving issues	MOE; GLA; MMA	2012 - ongoing 2012 2012 2012
	5. To improve the rational use and sustainable	5.1 Review composition and functions of EIA review committee and update	PPU/GLA; MOE	2011/2012

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	management of land and marine resources	where necessary 5.2 Create formal links between farmer and fisher organizations, private sector developers, real estate agents, land surveyors, contractors, engineers, consultants, user groups and network organizations	GLA; MOA; MOE	2012
		5.3 Create mechanism for interagency and user groups collaboration in tracking changes in land use	MOA - land use; GLA	2013
		5.4 Develop interagency system for monitoring changes in the use of public, coastal and marine resources	MMA (MOA - fisheries)	2013

STRATEGY OUTCOME 3 - TOOLS FOR MANAGEMENT OF LAND AND MARINE RESOURCES DEVELOPED

GOAL: To develop and widely utilize tools for creation of a seamless integrated system for management of Land and Marine Resources

STRATEGY OUTCOME	OBJECTIVES	ACTIONS FOR IMPLEMENTATION	RESPONSIBLE AGENCY	TIMEFRAME
Outcome 3: Tools for Seamless Resource Management Developed a) natural resource assessment	1. To provide reliable data on the quantity, degradation status and availability of natural assets to enable effective management and efficient use of limited resources	1.1 Develop guidelines and protocols for data collection and resource assessment for all major ecosystems	MOE; Statistics Department; MOA; Met Office-MBIA	2012
		1.2 Produce annual State of the Environmental Report	MOE	2012 - ongoing
		1.3 Include legal provisions for production of state of environmental report as duty of head of environmental Ministry in the Act	MOE; LAD	2012
		1.4 Produce annual report on the status of marine resources as required by the Fisheries Act	MMA/MOA-fisheries	2012 - ongoing

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		1.5 Conduct resource valuation studies under different degradation profiles 1.6 Adopt Caribbean Development Bank guidelines for performing natural hazard impact assessments as part of EIA(s) 1.7 Publish annual reports and make accessible to all user groups in hard copy and electronic form	MOE; Forestry MOE; NADMA; PPU MOE	2013-2014 2012 2012 - ongoing
b) Information Management	2. To create repositories and access portals for information on the natural resources that is real time and can be easily manipulated for forecasting changes in the environment	2.1 Develop protocols for data capture from multiple sources and sharing among user groups 2.2 Develop a fee and access system for making data available to all users 2.3 Create digital database with backup stores for all available natural resource data 2.4 Create website and online database with linkages to other resource centers 2.5 Conduct training in environmental intelligence, information management, trend impact analysis and forecasting including predicting climate change future scenarios	MOE; Statistics Department MOE; MOF MOE; Statistics; Library MOE; ICT MOE; OECS; UWI International partners	2012-ongoing 2012 2012-2013 2012 2013-2015
c) Education and public awareness	3. To promote awareness and understanding of the need for sustained environmental protection, conservation and management	3.1 Using data from KAP survey from Outcome 1 - design an intense public education and awareness campaigns on critical issues 3.2 Update science curriculum to infuse environmental issues including contemporary issues such as climate change 3.3 Make environmental education and awareness courses mandatory for all	MOE Min of Edu Min of Edu; DHR	2012 2012-2014 2012-2015

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		formal and informal training programs 3.4 Design informal education seminars and workshops for private sector, NGOs, community groups 3.5 Provide training in specialized areas for key personnel in line Ministries and agencies involved in environmental and resource management 3.6 Encourage and finance collaborative research programs on environmental management with nations, regional and international institutions	MOE; MOEd MOE; MOF; MOEd MOE; OECS; UWI; UN	2012-2014 2012-2015 2013-ongoing
d) Standards and Codes of Practice	4. To provide the best practical environmental options (BPEO) for management of limited resources cognizant of socio-economic factors, cultural values and beliefs held on the environment	4.1 Develop best practices for watershed management and land development on steep slopes 4.2 Develop silvi-culture and organic farming standards and conduct training for all extension workers and farmers 4.3 Develop effluent discharge standards and permits for all industries 4.4 Develop code of practice for environmental professionals and regulate compliance with the code 4.5 Adopt ISO 14000 and other international environmental standards as national standards 4.6 Make annual environmental audits a statutory requirement for existing industries	MOA; Forestry MOA; GOAM MOE; MOH; GBS MOE; GBS; Coalition of Service Providers GBS; MOE GBS; MOE	2013 2012-2013 2012-2013 2013 2012 2012
e) Economic Instruments and Incentives	5. To ensure that individuals and economic entities are given	5.1 Establish economic values for key watersheds, protected areas and natural resources so that incentives can	MOE; Forestry; MOF	2012-2014

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	enhanced	6.3 Require that any person, private or public organization desiring to develop a specified project to submit a project brief for which an environmental impact assessment may be required 6.4 Prescribe guidelines and regulations concerning the conduct of environmental impact assessments and the preparation of environmental impact statements, audits, monitoring and evaluations 6.5 Conduct professional review of Environmental Impact Statements and take necessary actions to ensure that no projects that may cause significant and irreparable damage to the environment are implemented	PPU; MOE; MOA PPU; MOE; MOA PPU; MOE	
g) GIS and Spatial Planning	7. To create a seamless geographic information system for land and marine spatial planning for Grenada, Carriacou and Petit Martinique	7.1 Revise and update National Physical Development Plan (NPDP) to include coastal zone management considerations; MPAs and protected areas 7.2 Develop integrated watershed management plans for sensitive habitats and protected areas 7.3 Make the NPDP and area plans statutory 7.4 Publicize the Plan 7.5 Develop and implement local area	PPU; MOE; MOA, Forestry and Fisheries MOA, Forestry and Fisheries PPU/GLA; LAD PPU/GLA PPU	2012 - 2013 2013 2014 2014 2014

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		plans by parish		
		7.6 Improve the capacity of the executing agency to monitor implementation of area plans	MOE; MOA; MMA	2012-ongoing
		7.7 Identify and zone lands for quarries, solid and hazardous waste landfills	Land Agency	2013
		7.8 Identify and zone lands for cemeteries	Land Agency	2013
		7.9 Create marine spatial plan and link to land use plans	MMA/Fisheries	2013-2015

STRATEGY OUTCOME 4 - FRAMEWORK FOR PLANNING, EXECUTION, MONITORING AND REVIEW

GOAL: To ensure the preservation of environmental quality and to enhance the regenerative capacity of ecosystems to sustain national socio-economic development.

STRATEGY OUTCOME	OBJECTIVES	ACTIONS FOR IMPLEMENTATION	RESPONSIBLE AGENCY	TIMEFRAME
Outcome 4: Framework for Planning, Monitoring, Enforcement and Review Developed	1. To utilize decision support systems (DSS) for selection of policy responses so that they are not mal-adaptive and foster sustainable development	1.1 Conduct training workshops and seminars to build capacity in strategic planning utilizing DSS	MOE; MOF	2012-2014
		1.2 Review and update national and sector strategic plans utilizing DSS and economic valuation data from studies in outcome 3	All agencies	2012-ongoing
	2. To develop distributional and trade-off analysis procedures that involve stakeholders across all levels or	2.1 Create mechanisms for inter-sector planning for national work plans as well as area management plans and projects	All agencies	2012
		2.2 Conduct workshops and training in distributional and trade-off analysis for	MOE; MOF; GLA; MOA	2012 - 2014

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	participation in development planning	all stakeholders including NGOs and private sector 2.3 Use trade-off analysis to finalize Grenada System Plan; proposals for MPA; National Physical Development Plan and plans for protected areas and watersheds 2.4 Perform trade-off analysis in making decision for exploitation of energy, minerals and natural resources	MOE; PPU; MOA MOF; MOE; MOA	2013 2012
	3. To include environmental change and future scenario analysis in planning, execution, monitoring and review of development projects	3.1 Train key staff of agencies in using environmental and climate data for planning (formal and informal) 3.2 Conduct workshops and seminars on techniques for trend analysis and portraying climate futures 3.3 Make future scenario analysis, plans and data available to development agencies and private developers	MOF; MOE; MOA MOF; MOE MOE; PPU	2012-2015 2013 2013
	4. To include environmental economic analysis as part of monetary valuation in evaluation plans and projects	4.1 Improve capacity in conducting environmental economic analysis 4.2 Infuse EE into budgets and monetary valuation of investment decisions 4.3 Perform impact analysis of projects and investment decisions including environmental costs and benefits	MOF; MOE MOF MOF; all project managers	2013 2012-ongoing 2013-2015