

Draft III

Review of Policy, Legislation & Institutional Structures

For the

GEF “Integrating Watershed & Coastal Areas Management in Caribbean Small Island Developing States (GEF-IWCAM)”Project

REPORT BY ENVIRONMENTAL ADVISORS INC.



EXECUTIVE SUMMARY

November 2007

CONTENTS

1 EXECUTIVE SUMMARY.....16

(i) Scope and methodology of the Report.....18

(ii) Major IWCAM Issues.....20

(iii) National Reports- Legal and Institutional Frameworks.....22

(iv)	Summary of analysis of legal, policy and institutional arrangements.....	24
(v)	Summary of recommendations.....	25
2.	GENERAL INTRODUCTION.....	30
2.1	Overview	
3.	NATIONAL REPORTS: ANTIGUA AND BARBUDA.....	34
3.1	<i>LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH.....</i>	34
3.2	Oil Pollution of Maritime Areas Act, 1995	
3.3	Merchant Shipping Act, 1985	
3.4	Pesticides Control Act, Cap. 235	
3.5	Public Health Act, Cap. 353	
3.6	National Solid Waste Management Act, 1995	
3.7	Litter Act Cap. 250	
3.8	<i>LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT</i>	35
3.9	Beach Protection Act, Cap. 46	
3.10	Beach Control Act	
3.11	Maritime Areas Act, Cap 260	
3.12	Marine Areas (Preservation and Enhancement) Act, Cap. 259	
3.13	Port Authority Act, Cap. 333	
3.14	Fisheries Act 2006	
3.15	<i>LEGISLATION RELATING TO LANDUSE.....</i>	36
3.16	Physical Planning Act, 2006	
3.17	Land Development and Control Regulations, 1996	
3.18	Public Works and Roads Act, Cap. 360	
3.19	National Parks Act, Cap. 290	

3.20	Radioactive Minerals Act, 1948	
3.21	Mineral (Vesting) Act, 1949	
3.22	LEGISLATION RELATING TO WATERSHEDS.....	36
3.23	Forestry Act, Cap. 178	
3.24	Public Utilities Act, 1973	
3.25	Watercourses and Waterworks Regulations, 1961	
3.26	LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION.....	37
3.27	Wildbirds Protection Act, Cap. 472.	
3.38	Plant Protection Act, Cap. 329	
4.	NATIONAL REPORT: THE BAHAMAS.....	38
4.1	LEGISLATION REALTING TO POLLUTION CONTROL AND PUBLIC HEALTH.....	38
4.2	Merchant Shipping (Oil Pollution) Act, 1976	
4.3	Port Authority Act, 1962	
4.4	Environmental Health Services Act, 1987	
4.5	LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT.....	39
4.6	Archipelagic Waters and maritime Jurisdiction Act, 1993	
4.7	Fisheries Resources (Jurisdiction and Conservation) Act, No. 477	
4.8	Coast Protection Act, 1968	
4.9	Continental Shelf Act	
4.10	LEGISLATION RELATING TO LANDUSE.....	39
4.11	Town Planning Act, 1961	
4.12	Local Government Act, 1966	

4.13	Conservation and Protection of the Physical etc Act, 1977	
4.14	Private Roads and Subdivision Act, 1961	
4.15	LEGISLATION RELATING TO WATERSHEDS.....	39
4.16	Water and Sewerage Corporation Act, 1976	
4.17	LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION.....	40
4.18	Wildlife Conservation and Trade Act, 2004	
4.19	Bahamas National Trust 1959	
4.20	Wild Animals (Protection) Act, 1968	
4.21	Marine Mammal Protection Act, 2005	
4.22	Wildlife Conservation and Trade Act, 2004	
5.	NATIONAL REPORT: BARBADOS.....	41
5.1	LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH.....	41
5.2	Marine Pollution Act, 1998-40	
5.3	National Conservation Commission Act, Cap. 323	
5.4	Pesticides Control Act and Regulations, Cap. 395	
5.5	LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT.....	41
5.6	Coastal Zone Management Act, 1998-39	
5.7	Fisheries Act 1993 and Fisheries (Management) Regulations, 1998	
5.8	Marine Boundaries and Jurisdiction Act 1979	
5.9	Marine Areas (Preservation and Enhancement) Act 1976	
5.10	LEGISLATION RELATING TO LANDUSE.....	42
5.11	Town and Country Planning Act, Cap. 240	
5.12	Town and Country Planning Development Order, 1972	

5.13	Town and Country Planning Regulations, 1972	
5.14	Highways Act, 1971	
5.15	Public Works Act, 1971	
5.16	LEGISLATION RELATING TO WATERSHEDS.....	43
5.17	Underground Water Control Act, 1953	
5.18	Preservation of Floods Act, 1952	
5.19	LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION.....	43
5.20	Draft Environmental Management Act, 1998	
5.21	Trees (Preservation) Act, 1981	
5.22	Soil Conservation (Scotland) District Act, 1959	
6	NATIONAL REPORT: CUBA.....	43
6.1	LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH.....	45
6.2	NV-27-1999	
6.3	Decree No. 179 of 1995	
6.4	Resolution 87/99 of Oct. 1999	
6.5	Resolution 53/2000	
6.6	Resolution 41/2001	
6.7	Law No. 81, Law of the Environment	
6.8	LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT.....	46
6.9	Law No. 81	
6.10	Resolution 936	
6.11	Decree Law 212	
6.12	Decree Law 230	
6.13	LEGISLATION RELATING TO LANDUSE.....	47

6.14	Law No. 81 – Environmental and Landuse Planning	
6.15	LEGISLATION RELATING TO WATERSHEDS.....	47
6.16	Title 6, Law No. 81	
6.17	Decree 280 of March 2007, Chapter III	
6.18	Law No. 85, Forestry Law	
6.19	Decree 179, Protection Use and Conservation	
6.20	Decree Law 1218	
6.21	Decree 199	
6.22	LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION.....	48
6.23	Law No. 81	
6.24	Decree law 201 of 1999	
6.25	Law of Mines	
6.26	Resolution No. 330	
6.27	Cuban Norm 93-01-206	

7 NATIONAL REPORT: DOMINICA.....51

7.1	LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH.....	51
7.2	Water Catchment Rules, 1995	
7.3	Forestry and Wildlife Act	
7.4	Soil Water and Management Act, 2002	
7.5	Environmental Health Services Act, 1997	
7.6	Litter Act	
7.7	LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT.....	52
7.8	Fisheries Act	

7.9	Fisheries (Marine Reserve) Regulations	
7.10	Mines and Minerals Act	
7.11	LEGISLATION RELATING TO LANDUSE.....	53
7.12	Physical Planning Act 2002	
7.13	LEGISLATION RELATING TO WATERSHEDS.....	54
7.14	Forests Act	
7.15	Water and Sewerage Act	
7.16	Water and Sewerage (Catchment Area) Regulations 1995	
7.17	LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION.....	54
7.18	National Parks and Protected Areas Act	
8	NATIONAL REPORT: DOMINICAN REPUBLIC.....	55
8.1	LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH.....	55
8.2	Law No. 42	
8.3	Law No. 311	
8.4	Decree No. 217 of 1999	
8.5	Law No. 146 of 1971	
8.6	Title III – Protection of the Environment	
8.7	LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT.....	56
8.8	Law No. 305 of 1968	
8.9	Decree No. 318	
8.10	Decree No. 249 of 1986	
8.11	Law 3003	

8.12	Constitution of the Dominican Republic	
8.13	<i>LEGISLATION RELATING TO LANDUSE.....</i>	57
8.14	Law No. 6232	
8.15	Decree No. 233	
8.16	<i>LEGISLATION RELATING TO WATERSHEDS.....</i>	58
8.17	Chapter II -Water Pollution	
8.18	<i>LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION.....</i>	58
8.19	Decree No. 303	
8.20	Decree No. 1728	
8.21	Law No 64	
9	NATIONAL REPORT: GRENADA.....	59
9.1	<i>LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH.....</i>	59
9.2	Oil in Navigable Waters Act	
9.3	Civil Liability for Pollution Damage	
9.4	Pesticide Control Act	
9.5	Public Health Act	
9.6	Grenada Solid Waste Management Authority Act, 1995	
9.7	Draft Marine Pollution Act	
9.8	<i>LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT.....</i>	60
9.9	Beach Protection Act Cap. 29	
9.10	Carriacou land Settlement and Development Act, Cap. 42	
9.11	Crown Lands Act	
9.12	Territorial and Maritime Boundaries Act Cap. 318	
9.13	Fisheries Act	

9.14	Bathing Places Act Cap. 28	
9.15	Port Authority Act Cap. 247	
9.16	<i>LEGISLATION RELATING TO LANDUSE.....</i>	61
9.17	Physical Planning and Development Control Act 2002	
9.18	Grenada Building Code	
9.19	Crown Lands Act	
9.20	Land Development and Control Act	
9.21	Roads Act	
9.22	<i>LEGISLATION RELATING TO WATERSHEDS.....</i>	63
9.23	Forest, Soils and Water Conservation Act Cap. 116	
9.24	Crown Lands Forest Produce Rules	
9.25	Grand Etang Forest Reserve Act	
9.26	National Water and Sewerage Authority Act Cap. 208	
9.27	<i>LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION.....</i>	64
9.28	Draft Environmental Management Act	
9.29	National Parks and Protected Areas Act	
9.30	Birds and Other Wildlife (Protection) Act, 1990	
9.31	National Trust Act	
9.32	Tourist Board Act Cap. 321	
10	NATIONAL REPORT: HAITI.....	66
10.1	<i>LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH.....</i>	66
10.2	Constitution of the Republic of Haiti, Decree of October 27, 1978	
10.3	Decree of March 3, 1983	
10.4	<i>LEGISLATION RELATING TO COASTAL AREAS</i>	

	MANAGEMENT.....66
10.5	Constitution of the Republic of Haiti, Decree of April 6, 1977
	LEGISLATION RELATING TO LANDUSE.....66
10.6	
10.7	Law of August 27, 1963
	LEGISLATION RELATING TO WATERSHEDS.....66
10.8	
10.9	Law of May 8, 1936
10.10	Law of September 19, 1958
10.11	Law of May 24, 1962
	LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION.....67
10.12	
10.13	The 2006 Framework Decree

11 NATIONAL REPORT: JAMAICA

	LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH.....68
11.1	
11.2	Pesticides Act
11.3	National Solid Waste Management Act, 2001
	LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT.....68
11.4	
11.5	Beach Control Act, 1956
11.6	Fishing Industry Act, 1976
11.7	Flood Water Control Act
	LEGISLATION RELATING TO LANDUSE.....69
11.8	
11.9	Town and Country Planning Act, 1958
11.10	Land Development and Utilization Act, 1966
11.11	Rural Agricultural Development Authority Act, 1990

11.12	Quarries Control Act, 1984	
11.13	Mining Act, 1947	
11.14	Housing Act	
11.15	Local Improvements (Community Amenities) Act, 1977	
11.16	LEGISLATION RELATING TO WATERSHEDS.....	71
11.17	Watershed Protection Act, 1963	
11.18	Forests Act, 1966	
11.19	Water Resources Act, 1995	
11.20	National Water Commission Act	
11.21	LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION.....	73
11.22	Natural Resources Conservation Authority Act, 1991	
11.23	Natural Resources (Permits and Licenses) Regulations, 1996	
11.24	Wildlife Protection Act, 1945	
11.25	Jamaica National Heritage Trust Act, 1945	
12	NATIONAL REPORT: ST. KITTS AND NEVIS.....	75
12.1	LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH.....	75
12.2	National Conservation and Environmental Protection Act, No. 5 of 1987	
12.3	Public Health Act No. 22 of 1969	
12.4	Litter Abatement Act	
12.5	Fisheries Regulations, No. 11 of 1995	
12.6	LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT.....	76
12.7	Maritime Areas Act No. 3 of 1984	
12.8	LEGISLATION RELATING TO LANDUSE.....	76
12.9	Development Control and Landuse Act No. 14 of 2000	

12.10	Frigate Bay Development Corporation Act, No. 13 of 1972	
12.11	South-East Peninsula Land Development and Conservation Act	
12.12	LEGISLATION RELATING TO WATERSHEDS.....	77
12.13	Watercourses and Waterworks Ordinance Cap. 185	
12.14	Fisheries Act No. 4, of 1984	
12.15	LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION.....	78
12.16	National Conservation and Environmental Protection Act, No. 5 of 1987	
13	NATIONAL REPORT: ST. LUCIA.....	79
13.1	LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH.....	79
13.2	Public Health Act, No. 8 of 1987	
13.3	St. Lucia Solid Waste Management Authority Act	
13.4	Oil in Navigable Waters Act No. 8 of 1929	
13.5	Pesticides Act, 1975	
13.6	Litter Act, No. 24 of 1983	
13.7	LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT.....	79
13.8	Beach Protection Act, No. 2 of 1967	
13.9	Fisheries Act, No. 10 of 1984	
13.10	Marine Areas Act, No. 6 of 1984	
13.11	LEGISLATION RELATING TO LANDUSE.....	80
13.12	Physical Planning and Development Act, No. 29 of 2002	
13.13	Land Conservation and Improvement Act, No. 10 of 1992	
13.14	Crown Lands Ordinance, No. 7 of 1945	
13.15	Minerals (Vesting) Act, No. 7 of 1966	

13.16	Agricultural Small Tenancies Act	
13.17	Tourism Industry Development Act	
13.18	St. Lucia National Trust Act, No. 16 of 1975	
13.19	LEGISLATION RELATING TO WATERSHEDS.....	81
13.20	Forests, Soil and Water Conservation Act No. 6 of 1945	
13.21	Water and Sewerage Authority Act. No. 13 of 1999	
13.22	LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION.....	81
13.23	Conservation Authority Act, No. 16 of 1999	
13.24	Wildlife Protection Act	
14	NATIONAL REPORT: ST. VINCENT AND THE GRENADINES.....	83
14.1	LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH.....	83
14.2	Environmental Health Services Act, No. 14 of 1991	
14.3	Oil Pollution (Liability and Compensation) Act, 1997	
14.4	Oil in Navigable Waters Act	
14.5	LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT.....	84
14.6	Fisheries Act, No. 8 of 1966	
14.7	Beach Protection Act	
14.8	Maritime Areas Act, No. 15 of 1983	
14.9	LEGISLATION PERTAINING TO LANDUSE.....	85
14.10	Town and Country Planning Act, No. 45 of 1992	
14.11	Crown Lands (Sale) Regulations, 1983	
14.12	LEGISLATION RELATING TO WATERSHEDS.....	86
14.13	Central Water and Sewerage Authority, No. 6 of 1978	

14.14	Forest Resource Conservation Act, 1992	
14.15	Forests Act	
14.16	<i>LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION.....</i>	87
14.17	National Parks Act, 2002	
14.18	Marine Parks Act, 1997	
14.19	Wildlife Protection Act, 1987	
14.20	St. Vincent and the Grenadines National Trust Act, 1969	

15 NATIONAL REPORT: TRINIDAD AND TOBAGO.....89

15.1	<i>LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH.....</i>	89
15.2	Environmental Management Act, 2000	
15.3	Certificate of Environmental Clearance Order, 2001	
15.4	Water Pollution Rules, 2001	
15.5	Public Health Ordinance, Cap. 12 No. 4	
15.6	<i>LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT.....</i>	89
15.7	Chaguaramas Development Authority Act, Cap. 35:02	
15.8	Port Authority Act, Cap. 51:01	
15.9	Marine Areas (Preservation and Enhancement) Act, Cap. 37:02	
15.10	State Lands Act, Cap. 57:01	
15.11	Highways Act, Cap. 48:01	
15.12	<i>LEGISLATION RELATING TO LANDUSE.....</i>	90
15.13	Environmental Management Act, 2000	
15.14	Certificate of Environmental Clearance Rules, 2001	
15.15	Environmentally Sensitive Areas Notice, 2006	
15.16	Forest (Prohibited Areas) Order, Cap. 66:01	

15.17	Environmentally Sensitive Areas Notice, 2006	
15.18	Marine Areas (Preservation and Enhancement) Act, Cap. 37:01	
15.19	LEGISLATION RELATING TO WATERSHEDS.....	92
15.20	Forest (Prohibited Areas) Order, Cap. 66:01	
15.21	Certificate of Environmental Areas (Designated Areas) Order, 2001	
15.22	Water and Sewerage Act, Cap. 54:40	
15.23	LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION.....	93
15.24	Environmental Management Act, 2000	
15.25	Agricultural Fires Act, Cap. 63:02	

16 INSTITUTIONAL AND POLICY FRAMEWORK FOR IWCAM.....94

16.1	Antigua and Barbuda.....	84
16.2	The Bahamas.....	97
16.3	Barbados.....	100
16.4	Cuba.....	102
16.5	Dominica.....	105
16.6	Dominican Republic.....	107
16.7	Grenada.....	109
16.8	Haiti.....	111
16.9	Jamaica.....	113
16.10	St. Kitts and Nevis.....	116
16.11	St. Lucia.....	118
16.12	St. Vincent and the Grenadines.....	121
16.13	Trinidad and Tobago.....	123

17 RELEVANCE OF INTERNATIONAL AND REGIONAL AGREEMENTS.....125

17.1	Review of MEAs Relevant to IWCAM.....	126
------	---------------------------------------	-----

17.2	Challenges to Compliance with Regional and Multilateral Environmental Agreements.....	132
------	---	-----

18 ANALYSIS OF CURRENT LEGISLATIVE , POLICY AND INSTITUTIONAL FRAMEWORK.....135

18.1	Legislative and Policy Aspects.....	135
18.2	Institutional Aspects.....	138

19 KEY ISSUES, RECOMMENDATIONS AND CONCLUSIONS.....142

19.1	Key Issues and Recommendations.....	152
19.2	Conclusions.....	153

LIST OF TABLES

Table 1	Landward and seaward activities causing marine pollution
Table 2	Summary of Legislation and Related Implementing Agencies in Barbados
Table 3	Institutions involved in the Management of Watersheds and Coastal and Marine Areas in Antigua and Barbuda
Table 4	Main resolutions dictated directly by CITMA or jointly with other agencies
Table 5	List of Institutions engaged in Marine Pollution in Haiti
Table 6	Institutions involved in the management of Water sheds and Coastal and Marine Areas in St. Lucia
Table 7	Institutions involved in the management of Water sheds and Coastal and

Marine Areas in Trinidad and Tobago

Table 8	Gaps in the legislative framework for IWCAM: Cuba and Dominican Republic
Table 9	Examples of Coordinating Arrangements
Table 10	IWCAM Actions to Promote LBS Protocol Ratification
Table 11	Comparison of IWCAM Legislative and Policy Instruments – Antigua and Barbuda, St. Lucia and Trinidad and Tobago

BOXES

Box 1	MARPOL 73/78 Annexes
--------------	----------------------

LIST OF APPENDICES

Appendix I	References
Appendix II	Sources of Laws and where they can be obtained
Appendix III	Institutions Involved in the Management of Watersheds and Coastal and Marine areas in Antigua and Barbuda
Appendix IV	Institutions Involved in the Management of Watersheds and Coastal and Marine Areas in St. Lucia
Appendix V	Institutions Involved in the Management of Watersheds and Coastal and

Marine Areas in Trinidad and Tobago

Appendix VI Comparison of legislation and policy relevant to IWCAM in Antigua, St. Lucia and Trinidad and Tobago

Appendix VII Summary of Legislation and Related Implementing Agencies in Barbados

ABBREVIATIONS

APN	Autorité Portuaire Nationale
BME	Bureau des Mines et de L'Energie
CARICOM	Caribbean Community
CARTAGENA	The Convention for the Protection of Development of Marine Environment of the Wider Caribbean Region
CEC	Certificate of Environmental Clearance
CEHI	Caribbean Environmental Health Institute
CEP	Caribbean Environment Programme
CITES	Convention on the International Trade in Endangered Species
CITMA	Ministry of Science, Technology and the Environment (Cuba)
CONAELE	Conseil national de l'Environnement de Lutte Contre l'Erosion

DEHS	Department of Environmental Health Services (The Bahamas)
DL	Decree Law
DO	Development Order
EDH	Electricité d'Haïti
EMA	Environmental Management Authority of Trinidad and Tobago
FAO	Food and Agricultural Organisation
GMO	Genetically Modified Organisms
IMO	International Maritime Organisation
INARA	Institut National de la Réforme Agraire
IWCAM	Integrating Watershed and Coastal Areas Management
LBS	The Protocol Concerning Pollution from Land-based Sources and Activities in the Wider Caribbean Region (Oranjestad, 6 Oct. 1999).
LDUC	Land Development and Utilisation Commission
MAFF	Ministry of Agriculture, Forestry and Fisheries (St. Lucia)
MARNDR	Ministère de l'Agriculture des Ressources naturelles et du Développement Rural
MDE	Ministère de l'Environnement
MEA	Multilateral Environmental Agreement

MINBAS	Ministry of Science, Technology and Environment
MINFAR	Ministry of the Armed Forces (Cuba)
MITRANS	Ministry of Transportation (Cuba)
MPCE	Ministère de la Planification et de Coopération Externe
MSP	Ministère de la Santé Publique et de la Population
NCC	National Conservation Commission
NCEPA	National Conservation and Environmental Protection Act
NRCA	Natural Resources and Conservation Authority
OECS	Organisation of Eastern Caribbean States
OFNAC	Office National d'Aviation Civile
OFNAM	Office National d'Archéologie Marine
OSAMH	Organisme de Surveillance et d'Aménagement du Morne de l'Hopital
PAE	Plan d'Action de l'Environnement
PNUD	Programme des Nations Unis Pour le Developpement

RADA	Rural Agricultural Development Authority (Jamaica)
SEMANAH	Service Maritime de Navigation d'Haïti
SIDS	Small Island Developing States
SMCRS	Service Métropolitain de Collecte des Résidus Solides
SNEP	Service National d'Eau Potable
UNCLOS	United Nations Convention on the Law of the Sea (Done at Montego Bay, 10 December 1982) in force 16 November 1994
UNEP	United Nations Environment Programme
UNEP/ROLAC	United Nations Environment Programme, Latin American & the Caribbean Region
UNESCO	Organisation des Nations Unies pour la Science et la Culture
USAID	United States Agency for International Development
WCR	Wider Caribbean Region
WPA	Watershed Protection Act (Jamaica)

1. EXECUTIVE SUMMARY

The Caribbean archipelago is a serpentine chain of islands stretching nearly 4,800 kilometers south from The Bahamas and trending east through Cuba, Jamaica, Puerto Rico and the Virgin Islands, then curving due south to Grenada and Trinidad and ending with a westward tail made of the Dutch ABC islands of Aruba, Bonaire and Curacao. The islands fall roughly into three major geological and geographical groups: the Bahama Bank Assemblage, located east of the Florida peninsula; the partially elevated platform of the Greater Antilles, which supports a mature volcanic range peaking in Haiti and the Dominican Republic and sloping west to Cuba and Jamaica and east to Puerto Rico and the Lesser Antilles located southeast of Puerto Rico. The subjects of this report are the 13 GEF-IWCAM beneficiary countries that fall within these boundaries. Like most tropical islands, these Caribbean territories are environmentally fragile, being especially vulnerable to external interference such as deforestation and construction activity.

The watersheds and coastal areas harbour much of the natural resources of these islands. They include rivers, riverbeds and ground water supplies, mangroves, proximal coastal waters, beaches and inter-tidal ecosystems, seagrasses and coral reefs. These natural resources are inextricably linked and there are synergistic relationships that sustain the functioning of these systems. They are particularly vulnerable to the effects of degradation from non-point and point source pollution (sediment, nutrients, bacteria and other contaminants in that order) delivered by rivers (or discharged by groundwater for all contaminants other than sediment) and are under constant and increasing pressure from human activity. Degradation of nearshore water quality results in the degradation of marine health and a key bio-indicator of marine health is coral health. Coral health is critical to most of the island states; it not only provides a tourist attraction, habitat for fish, the foundation for biodiversity in coastal areas, but very importantly, coral habitat represents the only source of carbonate sand supply, the major constituent of most beaches. Coral reefs also protect the shoreline from constant battering by storm-driven, high-energy ocean swell and waves and along with seagrasses, reefs and mangroves help prevent erosion.

There are visible examples of damage to nearshore resources emanating from both landward and seaward activities. The main causes are summarised in the Table below.

Table 1

Landward and seaward activities causing marine pollution

Landward Activities	Seaward Activities
Uncontrolled disposal of industrial wastes and garbage	Operation of fishing vessels, cargo ships, oil tankers and cruise ships
Releases of raw and poorly treated sewage and oil spills	Freight traffic to serve larger resident and visitor populations

Intensive use of the coastal zone (agriculture, industrialization)	Coastal siting of refinery terminals, docks and water/power/waste treatment facilities
Uncontrolled construction on steep slopes	Inadequately designed marine outfalls
Illegal clearing of forested lands for agricultural use and squatting	Sand dredging and reef blasting
Reliance upon wood and charcoal as a source of energy (Haiti)	Indiscriminate coral harvesting, over-fishing
Heavy use of pesticides	Reef trampling and discarded non-biodegradable refuse

These activities have destroyed mangrove and seagrass habitats and generally diminished coastal water quality. They have even affected the productivity of Caribbean fisheries. The rapid decline in forest cover due to illegal clearing will inevitably reduce rainfall percolation and result in soil erosion and sedimentation affecting water quality and quantity. Much of this clearing is done directly above water catchments areas. For Haiti, the forest represents less than 2 % of the total surface of the country. Indeed Haiti provides a good example of the critical need to manage the marine environment. The country has an unquestionable potential for fishing, tourism, mining and underwater archaeology exploitation in spite of the narrowness of its continental shelf which makes only 5000 km². Likewise in Barbados, increasing physical development on the south and west coasts has led to a steady deterioration of the marine environment affecting coral reefs in particular. There is a high occurrence of landslides or erosion in the Scotland District on the eastern side of the island, particularly due to slope failure- leading to siltation of coastal and marine environments.

With environmental quality closely linked their economic development and livelihood, Caribbean SIDS must confront these fundamental environmental issues in order to circumscribe their viability as sustainable economies. They have no alternative but to take strict measures to protect and conserve its marine and coastal areas as a high priority.

There are numerous pieces of legislation and institutional structures which aim to provide protection for watersheds and coastal areas, the institutional organization and weak legal content are inadequate to direct marine pollution issues. Watersheds and associated resources tend to be affected mainly by internal and local factors (land degradation upstream pollution etc.) while those pertaining to coastal and marine natural resources tend to be affected by a combination of regional and global practices. To enhance the contribution of coastal and marine resources to their national development IWCAM countries must therefore also engage these issues at the regional and global levels.

IWCAM Caribbean countries are parties to several multilateral environmental agreements (MEAs) and regional conventions that concern themselves with the conservation of terrestrial and marine biodiversity. Prominent inclusions at the regional and global levels are the –

- Convention on Biological Diversity,
- Convention on International Trade in Endangered Species
- Convention on Wetlands of International Importance especially as Waterfowl Habitat (RAMSAR)
- Framework Convention on Climate Change
- United Nations Convention to Combat Desertification
- United Nations Convention on the Law of the Sea (UNCLOS), and the
- Cartagena Convention
- Protocol on Specially Protected Areas and Wildlife Protocol (SPAW)
- Protocol on Land-based Sources of Marine Pollution (LBS)

The (LBS) Protocol has responded to these critical issues by establishing a regional instrument for addressing pollution issues from land-based sources. The Protocol recognizes the substantial contribution of coastal and marine resources to not only the health of the Caribbean region but also links with UNCLOS in recognizing the value of coastal and marine resources to the economic development of Caribbean states. The LBS Protocol is the first of its kind to set effluent limitations on discharges to the marine environment and is of direct application to contemporary watershed and coastal areas issues being experienced by IWCAM Caribbean countries.

The GEF “Integrated Watershed and Coastal Areas Management Project” (GEF-IWCAM) coordinated by CEHI and UNEP-CAR/RCU was formulated in response to Caribbean concerns to watershed and coastal areas management issues. Because coastal and marine areas cannot be defined in narrow sectoral terms, neither can the projects that seek to manage them. The project therefore proposes an overall objective the “**Integrating Watershed and Coastal Areas Management**” (IWCAM) recognizing the impacts of activities in terrestrial areas to overall coastal water quality. As Caribbean countries continue to cite the absence of a unifying policy on the issue of marine pollution as a fundamental weakness in addressing coastal and marine issues, the project promotes the demonstration of effective, comprehensive, integrated watershed and coastal area management systems, based on an intersectoral management approach. The legal, institutional and policy framework for “integrating watershed and coastal area management” is an integral building block to achieve the transition from a fragmented, inconsistent and sometimes conflicting approach to watershed and coastal areas management system. To identify the changes that are required to be made to the existing framework, the project has undertaken to conduct national inventories of the legislative, institutional and policy arrangements for watershed and coastal areas in 13 Caribbean states ten of which are subscribe to the common law legal system of law and of which Cuba, the Dominican Republic and the Republic of Haiti subscribe to the civil law legal system.

Civil law as a legal system is often compared with common law. The common law draws abstract rules from specific cases, whereas civil law starts with abstract rules, which judges must then apply to the various cases before them. The legal systems in many civil law countries are based around one or several codes of law, which set out the main principles that guide the law. The difference between civil law and common law lies not just in the mere fact of codification, but in the methodological approach to codes and statutes. In civil law countries, legislation is seen as the primary source of law. By default, courts thus base their judgments on the provisions of codes and statutes from which solutions in particular cases are to be derived. Courts thus have to reason extensively on the basis of general rules and principles of the code, often drawing analogies from statutory provisions to fill lacunae and to achieve coherence. By contrast, in the common law system, cases are the primary source of law, while statutes are only seen as incursions into the common law and thus interpreted narrowly. Simply put, common law is based on precedent; developed by court decisions, and texts are always subject to legal interpretation. In civil law countries, you have a text—the Civil Code—that the courts are obliged to uphold. It's a more abstract, less procedural and also less pragmatic kind of law.

Over time the strict distinctions between the two systems have become blurred as common-law countries are adopting some of the characteristics of the civil-law system, while civil-law countries are incorporating features of the common-law tradition into their legal systems. But significant differences remain and are likely to remain, as a result of the history and perceptions about the nature and purpose of law underlying each, one originating over 2,000 years ago and the other emerging in the twelfth century.

By contract between the GEF-IWCAM Regional Coordinating Unit and Environmental Advisors Inc., the latter party was retained to prepare this report. The scope of this report includes:

- Inventory of current legislation that impacts on IWCAM
- Analysis of weaknesses in the legislative framework to support IWCAM
- Description and review of the existing institutional framework
- Conclusions and recommendations

(i) Scope and Methodology of the Report

The preparation of this Report was done in three phases. The first phase involved the completion of an inventory of laws from each of the 13 participating IWCAM countries. Where necessary, the consultants held discussions with officers in charge of relevant administrations to clarify certain policy issues. The support received from these officials and the information obtained from the

persons consulted were both invaluable in making this activity successful. As a training and “buy-in” objective, the inventories were done by local consultants from each participating country.

The second phase involved a review of the inventories by a 4-member Steering Committee organised by the consultant firm. The review process was intended to identify gaps, weaknesses, inconsistencies, areas of conflict/duplication, and areas requiring improvement (where applicable) in the information provided by the local consultants. Based on this review a way forward on the key IWCAM issues was devised. This included arrangements for –

- integrating watershed and coastal areas management;
- enhancing the legislative framework that would support this management approach
- specifying the changes that need to be put in place for the integrated management of aspects of watersheds or coastal areas relating to –
 - (i) pollution control and public health;
 - (ii) coastal areas;
 - (iii) watersheds, and;
 - (iv) environment and conservation objectives.

As will be seen below, there is no comprehensive legislative or institutional framework for integrating watershed and coastal areas management. A list of sources for the legislation and contact persons for obtaining a copy (where provided) is provided in [Appendix II](#). A summary of legislation identified in this Report is contained in the Executive Summary.

The third phase concerned itself with the preparation of this Report to which an Executive Summary is attached. Many reports and documents were drawn on to prepare this report. They are listed at [Appendix I](#). During the process to prepare this report, discussions were held between the IWCAM project team and the Steering Committee.

(ii) Major IWCAM Issues

The main weaknesses in the legal and institutional framework pertaining to IWCAM are summarized below. Legislative and institutional changes are required for every weakness that is identified.

General

- ***Inappropriate legislative and policy framework for marine issues***

A review of the laws of Caribbean countries portrays a robust terrestrial focus with weak considerations for the protection of the marine environment. Coastal and marine resources are very important to the economic development and well-being of Caribbean countries. Their legislative regimes should be tailored to occupy a high priority to the protection of these resources. MEAs can be resourceful tools that can strengthen the legislative and management framework on marine and coastal issues. The LBS Protocol, with provisions that establish regional effluent limitations for domestic wastewater (sewage) and requiring specific plans to address agricultural non-point sources, can provide the momentum needed by Caribbean SIDS to address their growing marine pollution issues. The Protocol contains valuable enhancements to the already weak regime for marine pollution and the protection of marine resources in GEF-IWCAM countries. By ratifying the Protocol these countries will boost their programmes on the control and management of marine pollution.

- ***Overlapping jurisdictions***

Many pieces of legislation and numerous governmental agencies entities govern the range of integrated watershed and coastal areas management issues. This has resulted in a fragmented discharge of responsibilities, overlaps between legislative instruments, duplication of effort in already resource scarce countries, conflicts in implementation and enforcement or even inaction by government agencies whose responsibility it is to implement and enforce legislation.

- ***Weak marine pollution policy***

Several enactments address the management of various components of watersheds or coastal areas or specific sources of pollution. There is no unifying thread of policy running through them that provides a comprehensive approach to tackling marine pollution issues. In some cases policies are not implemented although they are referred to in existing legislation.

- ***Inadequate institutional linkages***

Planning and implementation processes still occur largely on a sectoral and intra-institutional basis rather than on a cross-sectoral and inter-institutional basis. Even where there is overarching environmental legislation or policy (as exists in the Dominican Republic, Jamaica, St. Kitts and Nevis and Trinidad and Tobago), an integrated approach to watershed and coastal areas management is practiced on an informal basis. Water resources agencies as key actors are consistently excluded as

relevant partners in addressing watershed and coastal and marine issues. A mandate that mandates coordination and collaboration between agencies can provide a stronger footing.

- ***Weak implementation of multilateral environmental agreements (MEAs)***

With the exception of Haiti, the mere act of ratification or accession to MEAs however do not necessarily make them part of the national law and their requirements binding, unless and until national implementing legislation is enacted in their national legislatures giving effect to them. In the case of Antigua and Barbuda, the Ratification of Treaties Act provides that certain treaties cannot be accepted by the State unless the approval of Parliament is first obtained. Most MEAs would appear to be covered by the requirement for parliamentary approval. Although many are parties to the parent Cartagena Convention, very few IWCAM project countries have ratified the LBS Protocol nor have they introduced comprehensive national legislation to implement a counterpart to Cartagena- UNCLOS - to which they became a party as early as 1982. The fundamental problem appears to be related to the availability of adequate drafting resources. This Report lists the key MEAs in order of relevance and provides brief information on them.

- ***Weak enforcement regime***

The issue of comprehensive enforcement of legislation remains a crucial issue. It is attributable to several factors including failure to enact subsidiary legislation, limited human resources both in terms of number and expertise, lack of training on conducting prosecutions, and lack of commitment by enforcement personnel. Of critical concern is the shortage of qualified personnel at the technical, managerial and even judicial levels. There is thus a need to introduce alternative methods of enforcement which may include incentive and market-based strategies that would promote enforcement.

- ***Weak regional linkages***

Overburdened government officials in IWCAM countries can benefit from the sharing of information, transfer of resource management skills, problem-solving solutions and best practices among themselves as a responsive mechanism to staff shortages and expertise.

- ***Limited stakeholder involvement and sensitization.***

While much of the modern day environmental laws have recognized the contribution that stakeholder involvement can make in the prevention and enforcement of environmental laws, much of the legislation related to watershed and coastal areas is severely outdated and do not incorporate management tools such as public consultations and awareness-building within their framework.

- ***Inadequate consideration of technical aspects***

Putting well-focused programmes for watershed and coastal areas management is equally important as establishing appropriate legal and institutional arrangements. There is a need on the coastal side to be managing a host of other possible impacts to the water quality and coral health in the coastal area including direct discharges to the sea from outfalls, spills, damage/destruction to corals and over-fishing.

(iii) National Reports – Legal, Policy and Institutional Framework

Because policies designed to protect (marine resources) must also address problems on land, they are no means easy to formulate. And once formulated they are even more difficult to implement. A key challenge is to propose an appropriate legal and institutional response that will effectively integrate all the issues pertinent to the effective management of watersheds and coastal areas and promote compliance. The approach that was adopted was to propose a resolution that is practical, and capable of universal application to participating governments.

This part of the report may be found at Chapter 2 and 3. Section 1 consists of thirteen country reports addressing the legislative and policy framework for integrating watershed and coastal areas management. Section 2 describes the institutional arrangement. According to the terms of reference the reports focuses on compliance with relevant MEAs. The following MEAs were considered for their relevance to IWCAM issues –

- Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, adopted in Cartagena, Colombia in March 1983.
- Protocol Concerning Pollution from Land-Based Sources and Activities (LBS Protocol) to the Cartagena Convention, 1999.
- United Nations Convention on the Law of the Sea, 1982.
- United Nations Convention on Biological Diversity, 1992 (CBD).
- Convention for the Control of Transboundary Movement of hazardous Wastes, 1989.
- International Convention for the Prevention of Pollution from Ships, as amended in 1978 (MARPOL 73/78).

- International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL).
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other matter, 1972 (the London Convention).
- United Nations Framework Convention on Climate Change, 1992.

There are a number of barriers to treaty adoption and national implementation of treaty commitments. Case studies from four Caribbean countries (Caribbean Law Institute, 1998)¹ have identified these constraints for treaty adoption as:

- Limited financial, technical, and human resources;
- Lack of political priority on environmental protection and sustainable development;
- Lack of information and understanding of treaty benefits and costs; and
- Lack of a national focal point responsible for treaty acceptance.

Constraints for national implementation of treaty commitments were identified as:

- Lack of expertise and inadequate financial and human resources in line departments to “champion” legislative follow-up and enforcement;
- Tendency of international financial institutions to support projects rather than long-term institutional capacity-building;
- Other political priorities; and

¹ Caribbean Law Institute, 1998. Implementation of Marine and Environmental Treaties in Organisation of Eastern Caribbean States: Case Study Reports for Antigua and Barbuda, Dominica , St. Kitts and Nevis and St. Vincent and the Grenadines.

- The lack of comprehensive, framework environmental legislation.

(iv) Summary of Analysis of Legal, Policy and Institutional Arrangements

This section provides a brief summary of common themes and differences between the jurisdictions reviewed in this report.

Similarities

- (a) The slow pace of policy and legislative reform was noted in the reports for each of the countries as a factor in the lack of effectiveness of watershed and coastal area management.
- (b) In none of the countries reviewed is there a legal instrument that deals with integrated watershed and coastal areas management or specifically sets out the linkages that exist between the management of watersheds and coastal areas and the prevention or control of pollution of coastal areas. There are, however, several laws that directly or indirectly relate to this subject that could be refocused to address IWCAM issues. Haiti is exceptional in this regard as laws addressing coastal areas practically do not exist.
- (c) Enforcement of aspects of the several different the Acts is managed by many different government units between which there is insufficient collaboration and sharing of information. Further, to varying degrees there is an absence or lack of clarity on the roles and responsibilities of different agencies. This is very apparent in Jamaica, and to a lesser extent The Bahamas due to the sheer number of agencies with some role in watershed and coastal area management. Partly due to the recent USAID Ridges to Reefs Program, Jamaica has the beginnings of a framework for integration between watershed and coastal area management.
- (d) For all the countries reviewed there was a common theme of a lack of human resources both in terms of numbers and skill level and financial capacity to perform adequate management for watersheds and coastal areas, indicating the need for capacity building to facilitate the efficient enforcement of existing Acts and regulations as well as for the incorporation of the requirements of MEAs into local legislation and policy. A key problem in St. Vincent and the Grenadines, for example, where the number of responsible agencies in watershed and coastal management is very limited, is the apparent lack of any framework for communication between these agencies. Greater stakeholder involvement is required, particularly public education and involvement, to guarantee the success of management programmes.

Differences

- (a) Barbados, Cuba, Dominican Republic and Trinidad & Tobago appear to have more legal instruments which address watershed and coastal area management. They do so with greater depth than those of Saint Lucia and Antigua and Barbuda. This may be due to these countries' participation in a greater number of relevant MEAs, a total of 15, in comparison to the other IWCAM project countries.
- (b) Antigua and Barbuda has the unique situation of having agencies responsible for Tourism and the environment under one Ministry. Although the Environment Department was upgraded to a Division, the joint management of these Divisions seems to result in ongoing conflicts of interest.
- (c) If the proposed Department of Environmental Planning and Protection is created as described in the National Environmental Management Action Plan (NEMAP) for the Bahamas, the resulting organizational structure of governance will be ideally suited to perform integrated watershed and coastal area management. In the interim this leadership should be vested in the Department of Environmental Health Services. Responsibilities will have been clearly assigned without overlap, there will be no gaps in responsibility and the watershed and coastal area planners will be working within the same department. Integration of coastal and watershed management in the Bahamas will also be advanced through the BEST Commission's Integrated Coastal Zone Management Project that is just starting. Two pilot IWCAM projects in the Bahamas will also make important contributions towards better management of the key linkages between watershed and coastal area management.
- (d) Barbados stands out among other IWCAM as taking both legal and institutional steps to protect its coastal and marine resources by enacting a Coastal Zone Management Act and a Marine Pollution Act. The Coastal Zone Management Act establishes a Unit to address matters pertaining to the coastal zone. It seeks to coordinate and update the existing, fragmented statutes relevant to coastal management, and makes provision for the protection of coral and other marine reserves, the creation of marine reserves, the identification of critical areas of concern not covered by current legislation and the preparation of Integrated Coastal Zone Management Plans. The Marine Pollution Act seeks to prevent, reduce and control pollution of the marine environment from all sources. In enforcing the Marine Pollution Act, consideration of the Coastal Zone Management Act is mandatory.
- (e) As a model for the IWCAM countries having similar problems in accomplishing the integration of terrestrial and marine activities, Barbados can demonstrate management skills and problem-solving solutions. IWCAM programmes may therefore be accelerated by taking advantage of the experiences of Barbados.

- (f) The contrast between The Bahamas where there is little or no surface water with water reaches the sea almost exclusively through groundwater, and countries like Jamaica, Dominica, St. Lucia, and St. Vincent and the Grenadines where runoff is mostly in the form of rivers (surface water) highlighted the fact that the group of islands participating in IWCAM may need to be formed into two sub-groups in terms of capitalizing on synergies of management approaches, at least as it relates to land side watershed management. The common-law jurisdictions share similar legislative and rulemaking practices and differ from those of Cuba, Haiti and the Dominican Republic. This difference may also give rise to the need for another sub-group to be formed.
- (g) For Haiti laws addressing coastal areas practically do not exist although there are many projects or preliminary drafts of laws which never had the chance to be adopted by the Parliament and/or the Executive.

(v) Summary of Recommendations

These main recommendations for action are made in the report.

ACTION 1: ESTABLISH APPROPRIATE INSTITUTIONAL ARRANGEMENTS

There are several options from which a country can choose. That choice will of course depend upon what is suitable taking into account such factors as the availability of legal, fiscal and technical resources, the ability to attract qualified professionals and the ease of with which proposed changes may be made to existing arrangements.

(i) Establish a Coordinating Agency

The Barbados National Report (2001) pointed out that “an integrated approach involves the development of an overarching institutional framework from which the sector specific institutions can then be carved out with little or no duplication of responsibilities or capacities. With this should come the identification and formalization of a structured framework for allocation of responsibilities and consultation with and among the relevant stakeholders.” The Agency will be responsible for coordinating the actions of the various entities that discharge IWCAM-related responsibilities as well as the laws governing the subject. Establishing an autonomous agency for IWCAM can be a costly undertaking and is not recommended as the first option for the already financially-strapped GEF-IWCAM countries.

(ii) *Establish Unit or Department*

Discharging IWCAM functions within a Unit or Department is best suited where the Unit or Department –

- (a) is vested in law with a coordinating function, and
- (b) its duties include the broad scope of IWCAM activities.

There is the practical appeal of cost effectiveness, shortness of time for start-up operations (as these entities are already familiar with the coordinating function). In cases where the duties of the entity do not adequately cover IWCAM requirements a simple amendment of the main Act may provide a remedy.

(iii) *National Watershed and Coastal Areas Management Council*

Another possible option for IWCAM activities could be the establishment of a National Watershed and Coastal Areas Council (or other similarly named entity). The membership of the Council should be intersectoral in nature comprising IWCAM stakeholder interests. The duties of Council should include the setting of priorities for legislative revision, promoting compliance and enforcement and coordination of activities among agencies and the development of training programmes to enhance legal and technical capabilities. In its methodology the Council should focus upon the management of the most important linkages between watersheds and coastal areas (and the aspects of management in watersheds and coastal areas that will facilitate the objective of managing the key linkages), versus addressing issues/weaknesses related to individual areas of watershed and coastal areas management, or for that matter even common areas that are not directly related to the *integral* issues. This intersectoral Council will offer the advantages of flexibility and time-saving and will require strong leadership in facing the challenge associated with newly established organizations. In choosing this option care must be taken to avoid duplication with other existing institutions. A review and assessment of the functions of existing institutions should be conducted to make an informed and practical decision in this regard.

The Council could be established by Cabinet or other high-level institution. As a creature of Cabinet it is accorded a high priority status and influence and can cut across jurisdictional lines without obstruction. The Cabinet instrument should vest Council with the power (a) to coordinate the activities of entities that discharge IWCAM-related functions and (b) to establish Committees, Workgroups and other bodies to assist in meeting its objectives.

ACTION 2: RATIFY LBS PROTOCOL AND IMPLEMENT ITS PROVISIONS IN NATIONAL LEGISLATION

Of all the contemporary instruments on the issue, the LBS Protocol is the most directly relevant to GEF-IWCAM countries. The Protocol covers in a comprehensive instrument, the essential provisions for addressing the effects of point and non-point sources of marine pollution. It also emphasizes the need to act at the regional level to address this problem.

As a regional mechanism the Protocol assists the United Nations Member States in the Wider Caribbean Region to meet the goals and obligations of two international agreements: the United Nations Convention on the Law of the Sea (UNCLOS) and the Global Plan of Action for the Protection of the Marine Environment from Land-Based Activities (GPA). Despite its relevance to Caribbean programmes for the protection of the marine environment, the level of participation is quite low. Of the 13 IWCAM participating States, to date ratifications have only been received from the Dominican Republic and Trinidad and Tobago.

ACTION 3: ENACT NATIONAL IMPLEMENTING LEGISLATION

The following legislative approaches may be adopted to implement the LBS Protocol-

(i) *Amend sectoral enabling (main) legislation*

IWCAM-related legislation is scattered in several pieces of legislation that are outdated and do not, in a precise manner or adequately, address the key IWCAM issues in a management context. One option that may be exercised can be to amend existing sectoral legislation to incorporate IWCAM issues. There are two obvious limitations to this approach (i) time, material and human resource constraints and (ii) in the absence of an appropriate institutional mechanism, the approach itself could have the effect of reinforcing a fragmented approach to IWCAM.

(ii) *Introduce IWCAM-specific/stand alone legislation*

There is a need for some type of *overarching* legislation sufficiently comprehensive to facilitate the implementation of IWCAM principles. The legislation should include provisions that govern both the terrestrial (including watersheds) area as well as the coastal and marine areas. In terms of powers, the legislation should, *inter alia* –

- establish an institutional mechanism and vest it with the power to coordinate the duties and functions of all entities that discharge responsibilities relevant to IWCAM
- define the scope of this legislation to include both the terrestrial (including watersheds) area as well as the coastal and marine areas. The National Inventory for Cuba recommends this approach. It goes on further to advocate that all the specific norms that are dispersed in other specific sectors be combined in a single juridical instrument for IWCAM. Specifically a new “Law for the sustainable management of marine and terrestrial waters” should be established
- establish the pollution control measures set out in the LBS Protocol.

The enactment of national legislation is a process which in the Caribbean context, can be met with lengthy delays, often times to the frustration of government officials who have agonized over the inefficiency of the legislative enactments and are anxious to implement the changes proposed in the new legislation. Indeed the limited human resource and financial resources available to Grenada also highlights the impracticality of proliferating legislation to address IWCAM.

(iii) Enact IWCAM regulations

The powers and jurisdiction of the several enactments relevant to IWCAM are established in broad terms and will require regulations to institute enforcement measures and guarantee their effectiveness. According to convention, regulations are introduced under an enabling (main) Act and the government entity that is responsible for its administration will also be responsible for administering those regulations. Because IWCAM matters are dealt with in several pieces of legislation and are administered by several different entities, the law under which the regulations should be laid needs careful consideration. The Water Pollution Rules of Trinidad and Tobago and the Environmental Quality (Sewage and Industrial effluents) Regulations, appropriately amended, could provide starting points for the drafting of these regulations.

ACTION 3: ESTABLISH COMPREHENSIVE POLICY ON IWCAM

Overlapping responsibilities between the many different agencies can lead to conflicts in the implementation and enforcement of the different legislative and policy schemes. There is thus a need for greater rationalization of these competing and conflicting policies to arrive at one comprehensive policy balancing all these competing interests. This state of affairs also

exists for the Dominican Republic where contrary to popular practice; there is no explicit policy as regards watershed and coastal areas management. This fragmentation minimizes the impact of legislation which is aimed at integrated management of watersheds and coastal areas.

ACTION 4: BUILD CAPACITY FOR IWCAM

The effectiveness of IWCAM will on implementation and enforcement. The inadequate human resource capacity – specifically, the lack of adequately trained manpower to carry out the functions needed for integrated watershed and coastal areas management, and a lack of training in the following areas –

- environmental impact assessments;
- water quality sampling and assessments
- enforcement and conduct of prosecutions in court
- awareness of environmental matters by judiciary international environmental law.

With regard to programmes on international environmental law the following activities may be undertaken –

- (a) Develop a user-friendly web-based legal resource centre and network of enquiry to assess, exchange information and experiences and promote international environmental law including aspects pertinent to the implementation and enforcement of MEAs;
- (b) Carry out legal research and experts (including non-lawyers) workshops to develop a series of legal briefs and capacity-building manuals on legal developments in the field of pollution control;
- (c) Undertake capacity building and host dialogues on legal aspects of pollution control;
- (d) Encourage a greater involvement of academic, legal, professional and judicial associations (could be coordinated with UNEP Environmental Justice Programmes) in the development and implementation of international environmental law.

ACTION 5: BETTER ACCOUNTABILITY, COMPLIANCE AND ENFORCEMENT

The most important objective for pollution control is to utilize those resources currently in a manner that would produce the

maximum impact. The laws governing water pollution must be enforced in order meet that objective. Historically enforcement has not been very effective in GEF-IWCAM countries for a variety of reasons that include outdated fines and penalties, shortage of enforcement personnel, lack of training and political interference all of which are conducted under a command-and control strategy. These factors prompt the need to introduce alternative methods to achieve the desired results. The following market and technology-based approaches are recommended as enforcement alternatives -

- ***Introduce user charges/permits*** which would allow dischargers discretion in the choice of pollution abatement techniques to meet effluent standards;
- ***Reliance on risk-based enforcement*** whereby significant violators that present the greatest risk to human health and the environment will be targeted. This will require the development of tools that allow analysis of risk as well as patterns of violations among corporations and facilities within a particular sector, training in risk-based enforcement and making this information publicly available.
- ***Compliance incentives for small businesses.*** Responsible small businesses who volunteer to comply with water pollution regulations should be given access to compliance assistance without fear of penalties. They may also be given time to correct violations.
- ***Incentives for auditing, disclosure and correction.*** Reduced penalties for companies that disclose and promptly correct violations should be afforded. This should not be available for repeat offenders and those actions amounting to reckless endangerment.
- ***Third party audits for industry compliance.*** Independent, certified, private sector firms should be engaged to audit industry performance. This will assure the public that discharge requirements are being met and violations promptly disclosed and corrected.
- ***Multimedia permitting.*** Many facilities must obtain multiple discharge permits in order to operate. An applicant for a water pollution permit should be granted a permit for other types of releases simultaneously (where applicable). This will encourage pollution prevention for all media, minimize duplication and delay and allow facility managers to use lowest-cost options.
- ***Awards for compliance.*** National awards should be developed for dischargers that design and apply new technologies that benefit water quality.

- ***Effluent trading.*** Under an effluent trading programme, a discharger who reduces pollution below the minimum level required to meet water quality standards can sell its excess pollution reductions to other dischargers within the same receiving environment. This will create an economic incentive for dischargers to go beyond minimum pollution reductions and encourage pollution prevention. Trading programs can be established also for non-point sources and indirect dischargers (facilities that discharge into a municipal sewage treatment plant)
- ***Introduce a ticket system, compounding offences and the use administrative measures to resolve breaches of the relative law.***
- ***Use education instead of regulation.*** All stakeholders including industry sector should be involved in the making of regulations and in developing agreements on how best to regulate.
- ***Develop Enforcement Policy.*** This will establish the principles on which the Department (or other entity) will make its enforcement and prosecution decisions thereby promoting consistency in enforcement and minimizing political interference.

ACTION 6: BUILD STAKEHOLDER INVOLVEMENT

While much of the modern day environmental laws have recognized the contribution that stakeholder involvement can make in the prevention and enforcement of environmental laws, much of the legislation related to watershed and coastal areas do not incorporate management tools such as public consultations within their framework. Increased stakeholder involvement and sensitization will promote a successful management program. The majority of the Acts cited have no role for the local communities.

Programmes should be developed and implemented to train and sensitize communities and all stakeholders including judicial personnel on the value of environmental quality to the economy and well-being of the country.

ACTION 7: PROMOTE REGIONAL LINKAGES

Overburdened government officials in IWCAM project countries can benefit from the sharing of information, the transfer of resource management skills, problem-solving solutions and best practices among themselves as a responsive mechanism to

staff shortages and expertise. Cuba has in its legislative practice mandated agencies that discharge responsibilities in respect of the marine environment to collaborate with each other. There is much opportunity for the sharing of information etc. via electronic media. The United Nations websites should be expanded to facilitate exchanges regionally and globally on all matters pertaining to IWCAM.

ACTION 8: ESTABLISH TECHNICAL PROGRAMMES

Putting well-focused programmes for watershed and coastal areas management is equally important as establishing an appropriate legal and institutional arrangement. The quantitative and systemic aspects of marine pollution are well documented for the WCR. Key programmes to address them should consider -

1. Determining assimilative capacity of nearshore zones;
2. Identifying bio-indicators or other methods of monitoring the assimilative capacity of these zones (early warning indicators);
3. On carbonate beaches monitor for long-term changes to beach sand quantity (hopefully this outcome can be avoided);
4. Based on (1) and 2), establish maximum loads of various pollutants - and manage watersheds to meet these targets through land management, enforcement of best practices and regulating direct discharges;
5. There is a need to monitor both pollutant loading in-river and to monitor water quality and health in order to monitor and evaluate progress in defining and maintaining sustainable levels of development in watersheds on the land-side. This will require a well-organized and accessible data and information management system.

Individually, the focus on the watershed side is to have in place the policy, legislation, management/planning tools, enforcement, monitoring and information management to achieve the assimilative capacity targets associated with water quality loadings to coastal areas, and ultimately healthy coastal (and watershed) ecosystems. On the coastal side the need is related to: a) establishing assimilative capacity; and b) monitoring key indicators (such as coral health and beach width for carbonate beaches). For coastal management (a) would likely be achieved partly through (b). In some locations without coral reefs, the indicator may be sediment quality. Of course, there is a need on the coastal side to be managing a host of other possible impacts to the water quality and coral health in the coastal area including direct discharges to the sea from outfalls, spills, damage/destruction to corals, over-fishing, etc.

Communication between watershed and coastal managers relates to the targets set and comparing measurements on actual loads and measurements/bio-indicators in the coastal zone. It is likely the setting of loading targets and the evaluation of assimilative capacity will be an iterative process.

19.2 Conclusions

Pollution and degradation in watersheds, the coastal zone and the associated ecosystems from a variety of land-based sources which include industrial development activities, tourism development activities, urban, domestic, agricultural activities and oil is common to most of the Caribbean territories. Run-off from fertilizers and pesticides are also major sources of pollution in the Caribbean, with fertilizer consumption in some islands being extremely high. The tourism industry, hotels and marinas generate sewage, solid and liquid wastes; while the shipping and marine transport sector generates oil, solid and liquid wastes. Heavy industry generates oil, liquid wastes and heavy metals while domestic/municipal waste products include sewage, solid and liquid wastes. This myriad of effluents impacts the watershed areas including rivers as well as the coastal and marine ecosystems. We must therefore influence as far as possible what happens in our watersheds and coastal areas by assessing the impact of where development of each and every kind takes place, where crops are grown and oversee agricultural practices, contemplate where we put road surfaces, drains, culverts, embankments and bridges.

The coastal and marine resources of the Caribbean are integral to the economy and sustainable development of Caribbean countries. They are however constantly being pressured by the competing uses and the impacts of development activities. Because policies designed to protect the marine environment and its resources must address problems on land, they are by no means easy to formulate.

This consultancy brings together the legal, policy and institutional framework for the countries participating in the IWCAM project. Whilst there may be deficiencies in the information provided, the problems in the area are now well known and do not require further study before concrete actions to remedy them are taken. The report proposes options for an appropriate institutional approach that could be put in place. While there are numerous pieces of legislation that touch on IWCAM issues they are far from comprehensive. The LBS Protocol provides a substantial and comprehensive framework for any legislation addressing IWCAM. Caribbean countries should ratify the Protocol and enact national legislation to implement its provisions in any form that is recommended in this report. This recommendation is also applicable for the Republic of Haiti notwithstanding its monist traditional practice as regards international law.

Achieving sustainable development demands that new legal and institutional mechanisms, methods and models be formulated. The National Legislation Inventories lists and describes the legislation, institutions and policies which are relevant (both directly and indirectly) to the management of watershed and coastal areas and the prevention, reduction and control of

pollution affecting those areas in their respective countries. It is hoped that this report provides the guidance needed for countries on IWCAM and make a contribution to this important regional effort.

Review of Policy, Legislation & Institutional Structures related to IWCAM in countries participating in the IWCAM Project

**Prepared for
UNDP, UNEP, Global Environment Facility, Caribbean Environment Programme & CEHI
For the**

GEF Project on “Integrating Watershed & Coastal Areas Management in Caribbean Small Island Developing States (GEF-IWCAM)”

REPORT BY ENVIRONMENTAL ADVISORS INC.

2. General Introduction

The “Integrating Watershed and Coastal Areas Management Project” (IWCAM) Project focuses on the demonstration of effective comprehensive, integrated watershed and coastal area management systems. Part of this project is the requirement for changes to be made to the existing legal and institutional framework that support integrated watershed and coastal area management of the countries participating in the Project. This part of the report deals with the existing legislative, institutional and policy framework of the participating countries. It analyses the current legislation and institutions that impact watershed and coastal areas by identifying the weakness and gaps in the existing framework and proposes conclusions, recommendations and remedial activities, where necessary, which may be programmed for future years.

To this end Environmental Advisors Inc. was recruited by the IWCAM Project as a Consultant team to review national policies and institutional structures related to integrated watershed and coastal area management and to propose remedial activities, where necessary, which will be programmed for future years. The Terms of Reference for this assignment are as follows -

Task 1. Conduct national inventories of the legislative framework related to the integrated management of watersheds and coastal areas, with a specific focus on the prevention, reduction and control of marine pollution from land-based sources.

Deliverable: A report for each PC of relevant laws and regulations related to the integrated management of watersheds and coastal areas, including for the prevention, reduction and control of marine pollution from land-based sources. In addition to identifying the

laws, regulations and institutional arrangements of each participating country, the report will also assess their variances/gaps/weaknesses as a framework to meet the IWCAM project objectives. A single executive summary, highlighting regional trends, similarities, and differences will accompany the reports.

Task 2. Conduct national inventories of the institutional, legislative, and policy frameworks and arrangements related to the integrated management of watersheds and coastal areas, with a specific focus on the prevention, reduction and control of marine pollution from land-based sources.

Deliverable: A report for each PC of relevant institutional, legislative, and policy frameworks and arrangements related to the integrated management of watersheds and coastal areas, with a specific focus on the prevention, reduction and control of marine pollution from land-based sources. A single executive summary, highlighting regional trends, similarities, and differences will accompany the reports.

Task 3: Based on the findings of Tasks 1 and 2, recommendations for changes to the existing legal, regulatory, policy and institutional frameworks of the participating states in order to achieve IWCAM objectives will be formulated. This task will recommend those changes for each of the participating countries in a clear and concise manner in relation to each law, regulation, institutional arrangement and capacity building requirement.

Deliverable: A report detailing recommendations and suggested next steps.

Task 4: Present the findings from Task 1, 2, and 3 at a regional workshop.

Deliverable: Participation in workshop and presentation.

In keeping with these Terms of Reference an inventory of laws from each of the 13 participating IWCAM countries was conducted. As a training and “buy-in” objective, the inventories were done by local consultants from each country. Where necessary, the local consultants held discussions with officers in charge of relevant administrations to clarify matters of policy. The support received from these officials and the information obtained from the persons consulted were both invaluable in making this activity successful. Two factors affected the timeliness of submission of this National Report document. Firstly, there was a challenge in obtaining a suitable local consultant to prepare a similar inventory for Haiti. A local consultant was obtained many weeks later than was originally scheduled. Secondly, the reports for both Haiti and the Dominican Republic were submitted in French and Spanish respectively requiring further time for translation and review by the Steering Committee.

The inventories were reviewed by a 4-member Steering Committee as follow-up. The review process was intended to identify gaps and weaknesses in the legal and institutional framework. Based on these assessments a way forward on the key IWCAM issues was devised. During this process, discussions were held between the IWCAM project team and the Steering Committee. In addition many documents were used in the preparation of this report and these are listed at [Appendix I](#).

This report and Executive Summary was subsequently prepared. The Executive Summary incorporates the views that were offered by the Steering Committee based on their review of the national inventory reports submitted by the local consultants.

2.1 [Overview](#)

The Caribbean archipelago is a serpentine chain of islands stretching nearly 4,800 kilometers south from The Bahamas and trending east through Cuba, Jamaica, Puerto Rico and the Virgin Islands, then curving due south to Grenada and Trinidad and ending with a westward tail made of the Dutch ABC islands of Aruba, Bonaire and Curacao. The islands fall roughly into three major geological and geographical groups: the Bahama Bank Assemblage, located east of the Florida peninsula; the partially elevated platform of the Greater Antilles, which supports a mature volcanic range peaking in Haiti and the Dominican Republic and sloping west to Cuba and Jamaica and east to Puerto Rico and the Lesser Antilles located southeast of Puerto Rico. The subjects of this report are the 13 IWCAM beneficiary countries that fall within these boundaries. Like most tropical islands, these Caribbean territories are environmentally fragile, being especially vulnerable to external interference such as deforestation and construction activity.

The watersheds and coastal areas harbor much of the natural resources of these islands. They include rivers, riverbeds and ground water supplies, mangroves, proximal coastal waters, beaches and inter-tidal ecosystems, seagrasses and coral reefs. These natural resources are inextricably linked and there are synergistic relationships that sustain the functioning of these systems. They are particularly vulnerable however to the effects of degradation from non-point and point source pollution (sediment, nutrients, bacteria and other contaminants in that order) delivered by rivers (or discharged by groundwater for all contaminants other than sediment) and are under constant and increasing pressure from human activity.

Although there are numerous pieces of legislation and institutional structures which aim to provide protection for watersheds and coastal areas, there are still challenges that need to be addressed. Caribbean islands must confront these fundamental environmental issues in order to circumscribe their viability as sustainable economies. While the status of the *watersheds and associated resources* tend to be affected mainly by internal and local factors (land degradation upstream pollution etc.) those pertaining to coastal and marine natural resources tend to be affected by a combination of regional and global practices. These include over-fishing, pollution and contamination from anthropogenic sources. To enhance the contribution of coastal and marine resources to their national development IWCAM countries must therefore engage these issues also at the regional and global levels.

IWCAM Caribbean countries are parties to several multilateral environmental agreements (MEAs) and regional conventions that concern themselves with the conservation of terrestrial and marine biodiversity. Significant among them at the international level are Convention on Biological Diversity, Convention on International Trade in Endangered Species, the Framework Convention on Climate Change. The United Nations Convention on the Law of the Sea (UNCLOS) and the Cartagena Convention are prominent inclusions at the regional level by establishing a broad framework for cooperation on several regional issues among IWCAM Caribbean States. A Protocol to the Cartagena Convention, the Land-based Sources of Marine Pollution (LBS) Protocol of the Cartagena Convention has responded to these critical issues by establishing a regional framework instrument for addressing pollution issues from land-based sources. The Protocol recognizes the substantial contribution of coastal and marine resources to not only the health of the Caribbean region but also links with UNCLOS as a meeting point in recognizing the value of coastal and marine resources to the economic development of Caribbean states. The LBS Protocol is the first of its kind to set effluent limitations on discharges to the marine environment and is of direct application to contemporary watershed and coastal areas issues being experienced by IWCAM Caribbean countries.

As an early step, the project has undertaken to conduct national inventories of the legislative, institutional and policy arrangements for watershed and coastal areas in 13 Caribbean states ten of which are common law countries and of which Cuba, the Dominican Republic and the Republic of Haiti are civil law countries. Civil law as a legal system is often compared with common law.

The common law draws abstract rules from specific cases, whereas civil law starts with abstract rules, which judges must then apply to the various cases before them. The legal systems in many civil law countries are based around one or several codes of law, which set out the main principles that guide the law. The difference between civil law and common law lies not just in the mere fact of codification, but in the methodological approach to codes and statutes. In civil law countries, legislation is seen as the primary source of law. By default, courts thus base their judgments on the provisions of codes and statutes from which solutions in particular cases are to be derived. Courts thus have to reason extensively on the basis of general rules and principles of the code, often drawing analogies from statutory provisions to fill lacunae and to achieve coherence. By contrast, in the common law system, cases are the primary source of law, while statutes are only seen as incursions into the common law and thus interpreted narrowly. Simply put, common law is therefore based on precedent; developed by court decisions, and texts are always subject to legal interpretation. In civil law countries, you have a text—the Civil Code—that the courts are obliged to uphold. It's a more abstract, less procedural and also less pragmatic kind of law.

Over time the strict distinctions between the two systems have become blurred as common-law countries are adopting some of the characteristics of the civil-law system, while civil-law countries are incorporating features of the common-law tradition into their legal

systems. But significant differences remain and are likely to remain, as a result of the history and perceptions about the nature and purpose of law underlying each, one originating over 2,000 years ago and the other emerging in the twelfth century.

The numerous statutes that contain provisions regarding watersheds and coastal areas management are presented in four categories focusing upon -

- Pollution control and public health;
- Management of coastal areas
- Landuse, and;
- Environment and conservation

and are assessed to take into account the institutional frameworks that govern their application, the MEAS that should be included within that framework and the actions that will be required to prevent pollution of watersheds and coastal areas and promote the integrated management to these areas in a sustainable manner.

3. NATIONAL REPORT: ANTIGUA AND BARBUDA

The existing laws that address watershed and coastal areas management are the following -

3.1 ***LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH***

3.2 Oil Pollution of Maritime Areas Act, 1995

This Act establishes provisions to prevent pollution of maritime areas. It intends the implementation of the OILPOL Convention administered by the IMO.

3.3 Merchant Shipping Act, 1985

Part VIII of this Act establishes as offences for the master or owner of a ship to discharge into a harbor or sea any oil or oily mixture within 100 miles from the coast or any land. The Minister is directed to draft regulations in relation to the prohibitions of discharge of oil to implement Part VIII.

3.4 Pesticides Control Act, Cap. 325

This statute establishes a Pesticides Control Board and vests it with the power to make regulations for various activities concerned with the use of pesticides including excessive application or accidental spills which can result in pesticide absorption by marine organisms in coastal habitats if chemicals are carried away by streams or rivers to the sea. The Board regulates the importation, manufacture, sale and use of pesticides.

3.5 Public Health Act, Cap. 353

This Act confers on the Central Board of Health wide powers for the making and enforcing of regulations pertaining to the maintenance of public health. These include powers for the inspection and sanitary conditions of beaches, removal of nuisances that cause pollution, the prevention and spread of infectious diseases and the handling and disposal of wastes. Regulations promulgated under the Act include:

- The Public Health (Nuisances) Regulations;
- The Public Health (Sewage and Disposal of Sewage and Liquid Industrial Waste Works) Regulations
- Public Health (Water Quality) Regulations.

The Board is empowered to issue abatement notices but effective enforcement is compromised by staff shortages and low level penalties for breach of its provisions.

3.6 National Solid Waste Management Authority Act, 1995 amended by the National Solid Waste Management Authority (Amendment) Act, 2005

Subject to the policy direction from the Minister, the Solid Waste Management Authority is authorized to manage residential, industrial, commercial, institutional ship-generated and special waste. The Authority is required to comply with the requirements of the Public Health Act in the performance of its functions. The Authority provides collection and storage facilities for all waste types. It provides facilities for the treatment and disposal of medical and hazardous waste.

3.7 Litter Act Cap.250 amended by the Litter (Amendment) Act 2004

The provisions of this Act are designed to control the littering of premises and public places. Under the Act “litter” is defined to mean any solid or liquid material or product or combination of these including any bottles, tins, logs, sawdust, and any other material that is designated as litter by the Minister by notice in the Gazette. And “public place” includes and street, road, highway, beach, park, garden and any place to which the public are allowed with or without the payment of a fee. The Act is administered by the Central Board of Health. It is however not effectively, if at all, enforced.

3.8 ***LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT***

3.9 Beach Protection Act, Cap. 46 as amended in 1992, 1993

The Act prohibits the excavation, removal or conveyance of sand, stone, shingle or gravel from beaches except with the express permission of the Minister. Section 9 (included in the 1992 amendment) authorizes the issue of permits for such activities on any beach or seashore where appropriate. Permits may not exceed one month.

3.10 Beach Control Act (Cap) 45

This Act is designed to control/regulate activities on beaches and adjoining lands within 50 yards of the landward side of the foreshore. This Act complements the Beach Protection Act.

3.11 Maritime Areas Act Cap. 260, as amended by the Territorial Waters Act, 1986

The Act implements key provisions of the United Nations Convention on the Law of the Sea (UNCLOS) including its jurisdictional provisions. Under it, the Minister may make regulations for the control of pollution and the preservation of the marine environment of Antigua and Barbuda.

3.12 Marine Areas (Preservation and Enhancement) Act Cap. 259 and Regulations

This Act empowers the Minister to restrict access to any marine area in order to preserve its natural beauty and resources. The power is similarly exercised by the Minister responsible for Fisheries under the Fisheries Act. By regulations made thereunder, Diamond and Saltfish Tail Reefs have been declared restricted areas.

3.13 The Port Authority Act, Cap 333 and Regulations

This Act contains provisions to regulate and control of ports, harbors and navigational aids in Antigua and Barbuda. It also regulates dredging activities for harbors and ports. The Act prevents dumping of ship ballast water in harbors. According to the Act, the Port Manager exercises significant powers in relation to ships. These include the power to direct where any ship shall be berthed, regulate the moving of ships in any port, or direct its removal from the port.

3.14 Fisheries Act, 2006 and Fisheries Regulations Cap173

Part II of the Act provides for the development of fisheries management plans and the issuance of licenses to local and foreign vessels and fish processing operations. Under the Act the Minister may by order declare a marine area and its adjacent land to be a marine reserve in order to protect flora and fauna, promote scientific research or preserve natural beauty. In such areas, fishing, taking or destroying flora and fauna, extracting sand, causing pollution or constructing structures is prohibited except where necessary for proper management of the marine reserve. The Minister is authorized to make specific regulations governing the management and protection of marine reserves. Under Part IV, the Minister may appoint officers from an enforcement authority of another country to assist with the enforcement of the Act.

3.15 ***LEGISLATION RELATING TO LAND USE***

3.16 Physical Planning Act, 2003

This recent enactment (which repeals the Land Development and Control Act Cap. 235) is designed to establish controls over the use of land for urban, economic and infrastructural development. It sets out the procedures for the preparation and approval of development permission. An appeal mechanism is provided for under the Act.

The Act spells out the power of the Authority to enforce and carry into effect development. These powers include the power to remove, pull down or alter so as to bring into conformity with the provisions of any scheme.

3.17 Land Development and Control Regulations 1996

These regulations establish the right of the State to manage water bodies and take action.

3.18 Public Works and Road Act, Cap. 360 and Regulations

This Act governs the classification of roads and establishes minimum distances for the erection of buildings.

3.19 National Parks Act, Cap. 290 and National Parks (Amendment) Acts, 1995, 2000, 2004

3.21 Radioactive Minerals Act, 1948

The Governor-General is empowered to set out conditions for the granting of mining licenses under this Act.

3.22 ***LEGISLATION RELATING TO WATERSHEDS***

3.23 Forestry Act Cap.178 and Regulations

This Act vests the Forestry Division with the responsibility for managing the country's forests and woodland areas. The main focus of the Act is to provide the forestry authorities with the power to declare forest reserves with a view to watershed management and the conservation of water resources. Its provisions are not sufficiently far-reaching to guard against deforestation and resulting soil erosion caused by the unmanaged extraction of forest products. A Soil and Water Conservation Unit has been established to assist farmers with the development of irrigation systems and in improving drainage. The Chief Forestry Officer is authorized under the Act to prepare a national forest plan.

3.24 Public Utilities Act, 1973

This Act vests the competent authority with the duty to provide potable water supplies and empowers the Minister to make regulations for the protection of watercourses and catchment areas. Under the Act the authority has wide powers for the conservation and protection of watersheds. Regulations made under the Public Health Act contain provisions in relation to water and sewage disposal.

3.25 Watercourses and Waterworks Regulations, 1961

These regulations prescribe methods for the extraction of water to protect against contamination.

3.26 ***LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION***

3.27 Wild Birds Protection Act, Cap. 472

This Act prohibits the catching or taking of listed categories of birds and prohibits the hunting of others except in the open season. A significantly large number of species are however excluded from protection under the Act.

3.28 Plant Protection Act, Cap. 329 and Regulations

The Act empowers the Minister to restrict the importation of planting material into Antigua and Barbuda. By section 17 of the Act the Minister is empowered to prevent the spread or control of plant pests in Antigua and Barbuda.

4 NATIONAL REPORT: THE BAHAMAS

4.1 *LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH*

4.2 Merchant Shipping (Oil Pollution) Act 1976 (Ch. 253)

This Act provides for the proper registration of ships, the control, regulation and orderly development of merchant shipping in The Bahamas, proper qualification of seamen and regulation of employment conditions for seamen. These provisions advocate ship safety and competency which prevent shipping accidents that can be detrimental to the marine environment as well as result in human casualties.

4.3 Port Authorities Act 1962 (Ch. 247)

This Act provides for the regulation and control of ports, harbors and navigational aids throughout The Bahamas as well as pilots and pilotage. It also regulates dredging activities for harbors and ports. The Act prevents dumping of ship ballast water in Bahamian harbors.

4.4 Environmental Health Services Act 1987 (No. 4 of 1987; Ch. 217)

This Act promotes conservation and maintenance of the environment and also addresses the control of contaminants and pollutants that may adversely affect the environment and human health. The Act also outlines regulations with respect to water supplies, solid and liquid waste, beaches, seaports, harbors and marinas.

4.5 *LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT*

4.6 Archipelagic Waters & Maritime Jurisdiction Act 1993 (No. 37 of 1993)

This Act establishes the boundaries of the archipelagic waters that come under the jurisdiction of The Bahamas as prescribed under the Law of the Sea Convention. The Bahamas thus has authority over these waters, the seabed and the resources found therein. The Government is working diligently to ensure sustainable economic development, utilizing integrated marine and coastal planning and resource management. Precautionary measures have also been taken with respect to marine and coastal activities, including requiring an Environmental Impact Assessment prior to any major activity or development project.

4.7 Fisheries Resources (Jurisdiction & Conservation) Act 1977 (Ch. 225) & Fisheries Resources (Jurisdiction and Conservation) (Amended Act) Act 1993

The *Jurisdiction & Conservation Act of 1977* establishes the Exclusive Fishery Zone (EFZ). It reflects concern with respect to conservation and management of the marine environment and its resources. It also recognizes traditional fishing rights and

provides for the declaration of protected marine areas and regulation of the fishing industry. The amended Act of 1993 further addressed the conservation and management of the fishing industry and fisheries resources including prohibition of long line fishing. The enforcement of fisheries regulations is a serious problem.

4.8 Coast Protection Act 1968 (Ch. 190)

This Act serves to regulate construction or alteration of the coastline for the purpose of the protection of land. It also provides for protection against encroachment and erosion by the sea.

4.9 Continental Shelf Act 1970 (Ch. 5)

This Act provides for the protection, exploration and exploitation of the continental shelf. It gives The Bahamas Government sovereignty over the continental shelf.

4.10 ***LEGISLATION RELATING TO LANDUSE***

4.11 Town Planning Act 1961 (Ch. 236)

This Act provides the Department of Physical Planning with the authority to grant permits for building construction, zone residential areas, determine building specifications and restore buildings.

4.12 Local Government Act 1996 (No. 5 of 1996)

This Act divides the Family Islands into 23 districts, each administered by a District Council. With this Act, much authority has devolved from Central Government to the District Councils. The Council and their respective Town Committees are responsible for town planning, licensing and administering budgets. They are also mandated to create open spaces for community use, including recreational parks and to provide community services, such as water, health care, sanitation, and waste collection and disposal.

4.13 Conservation and Protection of the Physical Landscape of the Bahamas Act 1997 (No. 12 of 1997)

This Act prohibits all significant excavation, landfill operation, quarry mining or mining of physical natural resources (such as sand) without permission of the Director of Physical Planning. The Act also gives the Director the authority to request an Environmental Impact Assessment (EIA) for any excavation or land reclamation activities. It provides for the protection of trees that are rare and of historical significance and imposes stiff penalties for violators of this law.

- 4.14 Private Roads and Subdivision Act 1961 (Ch. 237)
This Act enables the Department of Physical Planning to regulate road construction and subdivision development.
- 4.15 ***LEGISLATION RELATING TO WATERSHEDS***
- 4.16 Water and Sewerage Corporation Act 1976 (Ch. 184)
This Act establishes the Corporation. Functions of this organization include the application of appropriate standards and techniques for investigation, use, control, protection, management and administration of water. The Corporation is also mandated to oversee waste disposal, water treatment and water quality.
- 4.17 ***LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION***
- 4.18 Wildlife Conservation and Trade Act, 2004.
This Act enables implementation of the Convention on International Trade in Endangered Species at the national level.
- 4.19 Bahamas National Trust Act 1959 (Ch. 355)
This Act establishes The Bahamas National Trust as the entity that advises the Government on areas for preservation and conservation. It gives the Trust the power to create by-laws to be in effect in the protected areas it establishes. These areas are of environmental, historical and/or cultural importance.
- 4.20 Wild Animals (Protection) Act 1968 (Ch. 229)
this Act prevents the taking, capture or export of any wild animal without the permission of the Minister of Agriculture & Fisheries. These animals include wild horses, the hutia and iguanas.
- 4.21 Wild Birds Protection Act 1952 (Ch. 230)
This Act provides for the protection of wild birds. The Act lists several species including the White-Crowned Pigeon, Whistling Duck and Yellow-Crowned Night Heron. It makes it an offence to kill, capture or attempt to kill wild birds or take the eggs of wild birds during the closed season.

4.22 Marine Mammal Protection Act, 2005

This Act provides for the protection of marine mammals in the waters of The Bahamas.

4.23 Wildlife Conservation and Trade Act, 2004.


This Act enables implementation of the Convention on International Trade in Endangered Species at the national level.

5 NATIONAL REPORT: BARBADOS


The Barbados National Inventory reports that there are at least nineteen (19) existing or proposed enactments (both primary and subsidiary) of relevance. A summary description of these laws is contained in the Table below.

Table 2

Summary of Legislation and Related Implementing Agencies in Barbados



No.	Legislation	Summary Description	Responsible Agency	Assessment re IWCAM Objectives
				
Coastal Areas Management				
1	The Coastal Zone Management Act (1998-39)	This Act provides a comprehensive, statutory basis for coastal zone management and planning in Barbados. It seeks to coordinate and update the existing, fragmented statutes relevant to coastal management, and makes provision for the protection of coral and other marine reserves, the creation of marine reserves, the identification of critical areas of concern not covered by current legislation and the preparation of Integrated Coastal Zone Management Plans.	Coastal Zone Management Unit of the Ministry of Energy and the Environment.	Highly relevant to IWCAM since it involves the management of beaches and marine areas. Weaknesses: The Integrated Coastal Zone Management Plan 1998 has not yet been adopted. The Act needs to be amended and is being reviewed, currently, to address issues that were not covered when it was first adopted.
2	The Marine Pollution Control Act, 1998-40	This act seeks to prevent, reduce and control pollution of the marine environment from all sources. Consideration of the Coastal Zone Management Act is required. It empowers responsible agencies to investigate sources of marine pollution and gives them the authority to require that owner of properties reduce pollution levels from their properties.	The Environmental Protection Department of the Ministry of Energy and the Environment. The Coastal Zone Management Unit and the Government Analytical Services share responsibility for ongoing water quality	This legislation focuses on the quality of the marine waters on the south and west coasts of Barbados. In particular it addresses land-based pollution of the marine environment. This is a strong piece of legislation that is highly relevant to IWCAM as it promotes institutional linkages between the CZMU, Government Analytical Services and the EPD who jointly monitor water quality in coastal and water shed areas. However, it


No.	Legislation	Summary Description	Responsible Agency	Assessment re IWCAM Objectives
			<p>monitoring and control programmes conducted for coastal areas and natural springs. Mitigation of pollutions includes the management of gully ecosystems through the monitoring and removal of debris.</p>	<p>does not require the Director of the EPD to consult with other agencies to ensure that measures taken to reduce potential pollution of the marine environment will not negatively impact the watersheds. It is not clear whose authority would prevail, for example, in setting the allowable pollutant levels, if the levels set by the Director of the Marine Pollution Control Act were to be objected to by the watershed manager. No procedure is outlined for resolving such a problem.</p>
3	<p>Fisheries Act 1993 and Fisheries (Management) Regulations 1998</p>	<p>Provide for the formulation and implementation of schemes for the management and development of fisheries; the establishment of a fisheries advisory committee; fisheries access agreements; licensing for local and foreign fishing; sport fishing; the construction, registration and alteration of fishing vessels; fisheries research; fisheries enforcement and the obligation to supply information.</p>	<p>Fisheries Division / Ministry of Agriculture and Rural Development</p>	<p>This act contains aspects of coastal area management through specifying permissible fishing practices and equipment. It prohibits the use of fishing techniques that utilize explosives, poisons and noxious substances. It also specifies additional conservation measures such as the establishment of closed seasons and gear restrictions. Under this act, the Minister responsible for fisheries has the authority to create new fisheries management regulations as and when necessary.</p>
4	<p>The Marine Boundaries and Jurisdiction Act 1979 (cap. 387)</p>	<p>Establishes a 200-mile exclusive economic zone (EEZ) which vests sovereign rights in the local Government with regards to many ventures including the preservation and protection of the marine environment and the prevention and control of marine pollution.</p>	<p>Ministry of Foreign Affairs and Foreign Trade</p>	<p>Defines an area of national control with respect to coastal la areas management</p>
5	<p>Marine Areas (Preservation and Enhancement) Act (1976)</p>	<p>Provides for the protection of coastal and marine areas and regulates the establishment and management of marine reserves and underwater parks.</p>	<p>Ministry of Energy and the Environment</p>	<p>Provides protection for coastal and marine areas.</p>
6	<p>National</p>	<p>This Act establishes the National</p>	<p>National Conservation</p>	<p>The aspects of the NCC act that relate to</p>

No.	Legislation	Summary Description	Responsible Agency	Assessment re IWCAM Objectives
	<p>Conservation Commission Act (CAP 393) 1982</p>	<p>Conservation Commission and revises and consolidates the law relating to public parks, beaches and related matters. It provides for the conservation of sites and buildings of national interest.</p> <p>Under this act the NCC is responsible for the maintenance and development of beaches and public parks or gardens. This includes ensuring sanitary and clean conditions and the removal of derelict objects from these sites.</p>	<p>Commission / Ministry of Energy and the Environment</p>	<p>beach maintenance, particularly the removal of garbage and other debris from beaches contribute significantly to the management of pollution in the coastal zone. The NCC collaborates with the Coastal Zone Management Unit to address the elements of the NCC Act that govern beach protection.</p>
 <p>Land Management</p>				
<p>7. 8. 9.</p>	<p>Town and Country Planning Act CAP 240</p> <p>Town and Country Planning Development Order, 1972</p> <p>Town and Country Planning Regulations 1972</p>	<p>This Act makes provision for the orderly and progressive development of land in both urban and rural areas and to preserve and improve the amenities thereof.</p> <p>It is enforced according to the regulations outlined in the Physical Development Plan which is the national policy for land use.</p> <p>The Development Order prescribes various development standards, regulations and procedures to give effect to the provisions of the Town and Country Planning Act</p>	<p>The Town and Country Development Planning Office / Ministry of Economic Affairs</p>	<p>There is some degree of coastal area and watershed management within this act. It is enforced in conjunction the Physical Development Plan which details policies for land use and includes provisions for the allocation of sanctuaries and protection of marine life; the preservation or protection of forests, woods, trees, shrubs, plants and flowers; and policies for prohibiting, regulating and controlling the disposal of waste, materials and refuse.</p> <p>The Act allows the Chief Town Planner to regulate the type of development that can occur in watersheds and coastal areas. The act also determines statutory setbacks of developments from the high water mark (30m) and makes provision for the request of specialist studies such as environmental assessments. Additionally, the Town and Country Planning department consults with the Coastal Zone management Unit on any</p>

No.	Legislation	Summary Description	Responsible Agency	Assessment re IWCAM Objectives
				<p>application for proposed development in coastal areas e.g. for buildings and any structures that will modify the coastline (e.g. groynes).</p> <p>Weaknesses:</p> <ol style="list-style-type: none"> There is no expressed legal provision for undertaking EIAs in Barbados. Agricultural activities not requiring any significant engineering or building operation are not defined as development under current legislation and therefore not subject to land use controls. Public participation not expressly provided for in decision making.
10.	<p>Prevention of Floods and Highways Act (CAP 235)</p>	<p>This Act provides for flood prevention works and the designation of special flood areas</p> <p>Under this Act, it is mandatory that detailed drainage plans and topographical maps of areas where development is planned are submitted with applications for development. Amendments to the Act have empowered the Drainage unit to require that structures be implemented on private land, if necessary. Amendments to the act have also included watercourses with the definition of highways.</p>	<p>Drainage Unit / Ministry of Public Works and Transport</p>	<p>This Act is very relevant to watershed management as it includes provisions for the management watercourses and addresses flood control and prevention. Although it primarily targets the maintenance of drainage structures and the clearing of watercourses to prevent flooding, it also touches on coastal area management since rainwater runoff is the main source of non-point pollution in coastal areas.</p> <p>Implementation is often less effective due to public interference through the periodic covering of drainage grilles and illegal dumping of solid waste in watercourses (e.g. gullies) and drains.</p>
11.	<p>Soil Conservation (Scotland District) (Amendment) Act (CAP 396) and</p>	<p>This Act defines the boundaries of the Scotland District and controls land use in this area.</p> <p>It details the regulations that govern the operations of the Soil Conservation Unit. It includes provisions for all slope restoration and land management works</p>	<p>The Soil Conservation Unit / Ministry of Agriculture and Rural Development</p>	<p>The Act requires that all proposals for development in the Scotland district be reviewed by the SCU. Government has the authority to conduct any conservation works necessary for the prevention of damage, or deterioration by erosion, to the lands in the area.</p>

No.	Legislation	Summary Description	Responsible Agency	Assessment re IWCAM Objectives
	Soil Conservation (1991) Amendment Order	within the Scotland District and attempts to ensure conservation of soil and the prevention and mitigation of soil erosion.		It imbues the Minister of Agriculture and Rural Development with the power to prosecute for damage or interference with trees, shrubs, plants and grass, grazing of stock or with the execution of any cultural or drainage operation in any area which he designates a "protected area". However, this Act is relevant only for 1/7 th of the island's land area i.e. the Scotland District
12.	Trees (Preservation) Act CAP 397	This Act provides for the preservation of trees and prohibits the killing of any tree with a circumference of one meter or greater at a point half a meter or more from the ground without the permission of the Chief Town Planner. Under the Chief town planner has the power to require the owner of vacant land or land adjoining or near a public road to plant or replant trees and to clear land of weeds or overgrown grass.	Town and Country Planning Office / Ministry of Economic Affairs	The Act does not govern circumstances where it is necessary to kill a tree in order to prevent imminent danger or in compliance with any other enactment. Weakness: The Act does not offer any protect to young and maturing trees.
13.	Pesticides Control Act (CAP 395)	Provides for the control of the importation, sale, storage and use of pesticides. The Act authorizes inspectors of the Pesticides Control Board to enter and inspect lands or premises used for the manufacture, sale, packaging or storage of pesticides. It also authorizes the Minister to make regulations for carrying into effect the provisions of this Act.	Ministry of Agriculture and Rural Development.	This legislation and the associated regulations are highly relevant to the IWCAM project as they allows for the management and monitoring of the use of agricultural chemicals and pesticides which through agricultural runoff can pose a significant threat to nearshore and coastal areas as well as ground water sources.
14.	Pesticides Control Regulations. 1974 CAP. 395	Details the terms and conditions importation, sale, storage and use of pesticides.		

No.	Legislation	Summary Description	Responsible Agency	Assessment re IWCAM Objectives
<div style="display: flex; align-items: center;">  Environment </div>				
15.	<p>The “Draft Environmental Management Act</p>	<p>This draft Act addresses the implementation of biodiversity conventions, integrated environmental management and the conservation of natural heritage resources. It contains provisions for the regulation and prohibition of discharges into the environment, waste management and disposal, environmental impact assessment, pollution control, the regulation of toxic substances and pesticides and details enforcement procedures.</p>	<p>Ministry of Energy and the Environment</p>	<p>This Act is/will be highly relevant to the IWCAM project as it addresses many important issues such as the management and protection of species and their habitats and further incorporates watershed and coastal area management through water resources management and the management of pollution, discharges, waste disposal and regulates pesticides and toxic substances.</p>
<div style="display: flex; align-items: center;">  Water Resources </div>				
16	<p>The Underground Water Control Act, CAP 283, 1953 and Barbados Water Authority Act CAP 274A, 1980</p>	<p>This Underground Water Control Act addresses water resources protection and management. It includes the revised policy on private sewage systems and mechanisms to protect water catchment areas and controls liquid waste disposal systems that may threaten national water resources.</p> <p>This Barbados Water Authority Act controls all water resources except those under the Three Houses and Porey's Spring Acts. It provides for the management, allocation and monitoring of water resources with a view to ensuring their best development, utilization, conservation and protection</p>	<p>Barbados Water Authority</p> <p>Ministry of Health Water Resources Protection and Management</p>	<p>Highly relevant to the IWCAM project as it protects water catchment areas and controls liquid waste disposal systems that may threaten national water resources. Several institutions collaborate with the BWA e.g. The EED enforces water quality standards and monitors waste water discharge; the CZMU enforces standards for discharge into the marine environment.</p>

No.	Legislation	Summary Description	Responsible Agency	Assessment re IWCAM Objectives
		in the public interest.		
Transport 				
17.	Public Works Act (CAP) 32	This act provides for Public Works in Barbados and details the duties of the Chief Technical Officer which include the preparation of plans, estimates and specifications for new public works and buildings as well as for alterations, repairs and improvements to existing works and buildings; supervision of all works to ensure that they are completed according to contract specifications.	Ministry of Public Works and Transport	
18.	Highways Act CAP 289	This Act governs highways in Barbados and applies to all highways maintained by the Chief Technical officer of the Ministry of Public Works. The definition of highways includes watercourse, sewer, embankment, tunnel, drain, gutter or wharf. It stipulates that all works involving public roads or road reserves, including excavation, building or the placement of temporary structures thereon require the permission of the Chief Technical Officer.	Ministry of Public Works and Transport	

6. NATIONAL REPORT: CUBA

6.1 *LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH*

6.2 NC: 27:1999 Wastewater spills to the terrestrial waters and to the sewer system. Specifications.

This norm establishes the levels allowed by each substance, for the spills according to the characteristics of the receiving body.

6.3 Decree No. 179, of 1995. Protection, Use and Conservation of the Soils and its breaches, as it is complementary to Law 33, it is also remiss as for determining the concept of soil and established nothing to that regard, extensively interpreting the definition provided by the mentioned Law. When derogating the Law 33 we are before a juridical gap because the instrument that defines what is understood as soil does not exist.

- Hazardous wastes

6.4 Resolution 87/99, of October 21, 1999. On the export, import, production, storage, transportation and final disposal of hazardous wastes.

6.5 Resolution 53/2000, of April 27, 2000. Modifications to the list of hazardous wastes in the Resolution No. 87/99.

- Toxic Chemical Products

6.6 Resolution 41/2001, of April 11, 2001. Prohibition of import and production of certain chemical substances.

6.7 Law No. 81, Law of the Environment

Establishes the basic principles for the environmental management of the causes of pollution are established. Thus, in its article 93, it stipulates that to protect to the water from pollution, the competent authorities will be governed by the following principles:

- a) In the classification of water uses it will always be high-priority to guarantee the conditions of quality and quantity required for human consumption;
- b) All the discharges in the water courses and in bays, coastal, lagoon, dammed, and underground waters, or of any other type, of substances susceptible of causing pollution, of affecting other foreseen or foreseeable uses, or of altering the balance of the ecosystems, will be object of appropriate treatment;
- c) The reuse of wastewaters in accordance with the norms established to that end will be promoted;
- d) It will be promoted the establishment of technologies for efficient water treatment that minimizes pollution and favors its reuse.

The Law also contains norms with provisions that stipulate that wastewaters from the economic and social activity have to receive the corresponding treatment so as not to pollute the reservoirs and terrestrial and marine water bodies, before being discharged into the environment (Article 95).

6.8 ***LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT***

6.9 Law No. 81

The Third Section, of Chapter IV of the Sixth Title focuses upon environmental protection for maritime waters and marine resources. In its articles, it establishes the commitment by the country as signatory of the United Nations Convention on the Law of the Sea.

It prescribes that the Ministry of the Fishery Industry, in coordination with the Ministry of Science, Technology and Environment is in charge of regulating the sustainable management and the use of marine resources, including those resources that lack commercial interest for this industry.

The regulations prescribe controls over sailing, port and the transportation of passengers to minimize damages to the marine and coastal resources.

Article 104 establishes Ministry of Science, Technology and Environment as the entity to authorize the final disposal of wastes in the marine environment.

6.10 Resolution 936 of date November 5, 1984, that authorizes the National Center of the Geologic Fund, assigned to the MINBAS, to issue the authorizations for the extraction of sea sand in the insular shelf, establishing the requirements to obtain this authorization.

6.11 Decree Law 212, “Coastal Zone Management”

This Decree was adopted on August 8, 2000 as a complementary legislation of Law 81. It delineates the extent of the coastal zone and regulates activities within the zone to ensure its protection and sustainable uses, in light of principles of integrated coastal zone management. It incorporates the principles of integrated coastal zone management into territorial and urban land use plans and tourism development plans and establishes specific prohibitions for certain construction projects and other activities in the coastal zone and its zone of protection.

In addition to DL 212, the legal framework for the protection and management of marine and coastal resources is reflected in a series of environmental laws, including, but not limited to, regulation of marine fisheries pursuant to Decree Law 164/96; regulation of forests, under Law 85/98; the establishment of the environmental impact assessment process, pursuant to Resolution 77/99 of CITMA; the system of sanctions for environmental violations, established pursuant to Decree Law 200/199; and the further development of the National System of Protected Areas, pursuant to Decree Law 201/99.

6.12 Decree-Law No. 230, of 28 August, 2002 – (Of the Ports)

It establishes the authority of the Port Administration and assigns as its main functions the management of the port precinct. It stipulates the classification of Ports starting from the economic activity, and it defines the Port Administration as the entity responsible for guaranteeing the compliance with the environmental legislation on the part of the users and workers. It proclaims the obligation to elaborate a Management Plan for each port and to apply taxes for concept of environmental services.

The Port Administration is granted the faculty to formulate the corresponding provisions that guarantee the fulfillment of the obligations of the Cuban State assumed by virtue of Multilateral International Agreements.

6.13 ***LEGISLATION RELATING TO LANDUSE***

6.14 The Law No. 81 Environmental Land Use Planning

In connection with the Environmental Classification, the Law introduces a novel category in the Cuban legal classification; its main objective is to guarantee the sustainable development of the territory, on the basis of considering integrally the environmental aspects and their bond with the economic, demographic and social factors, in order to reach the maximum possible harmony in the interrelations of society with nature; standing out the advance obtained in the last years in the conciliation among the Institute of Physical Planning and the Ministry of Science, Technology and Environment, of the development schemes and the master plans, thus facilitating the incorporation of environmental approaches from early stages of the investment process results from the execution of these plans.

6.15 ***LEGISLATION RELATING TO WATERSHEDS***

6.16 Title Six Law No. 81

Title Six “Specific Spheres of Environmental Protection”, of the Law No. 81, contains an important number of articles devoted to the regulation of watersheds.

Article 110. The environmental management of watersheds will be based on integrated management that assures economic and social activities will be based on the adequate protection and the rational use of the natural resources and the environment.

Article 111. The National Watershed Council, in coordination with the responsible agencies and bodies, will take actions permitting the integration and harmonization of the principles and objectives of this law with the activity of all natural or legal persons that may be involved in any given watershed.

6.17 Decree 280 dated March 19, 2007, Chapter III

Establishes the functions and competences of the National Council of Watersheds as the coordinating organ for the classification and management of watersheds. It has a duty to coordinate, recommend, evaluate and check the strategies for the sustainable economic and social development of watersheds, and avoid duplication with other governmental agencies.

6.18 Law No. 85, Forestry Law

The Law No. 85, Forestry Law, of July 21, 1998, establishes the principles and the general regulations for the protection and sustainable development of forests, the conservation of biological diversity associated with the forest ecosystems, protecting the forests against clear-cutting, irrational pruning, forest fires, free grazing, plagues and diseases, as well as from other actions that may affect them. In the areas declared as protective forests activities that cause the permanent elimination of vegetation are prohibited.

6.19 Decree 179, Protection, Use and Conservation of the Soils, and its Breaches, date February 2, 1993.

Decree 179, Protection, Use and Conservation of the Soils, and its Breaches include as main objectives the following:

- to control on the protection, use, conservation, improvement and rehabilitation of soils;
- to conserve and protect the fertility and productivity of soils, by means of the control of erosion, salinity, acidity and other causes that can damage them; and
- protect the agricultural and forest soils against the effects derived from mining and geologic exploitations, industrial and socioeconomic facilities, construction materials and hydraulic works.

6.20 Decree Law 138 “Of the terrestrial waters” of July 1st, 1993.

The objective of this Decree, promulgated under the Law 33 is to establish the basic principles for the use, exploitation, conservation, sanitation, rational use, protection of the sources of water supply, natural water courses, hydraulic works and facilities, protection of economic and social activities from the harmful effects that can cause runoff of terrestrial waters.

6.21 Decree 199 Breaches of the Regulations for the Protection and Rational Use of Hydraulic Resources.

This Decree establishes the behaviors that typify as breaches and it designates the authorities authorized to impose the corresponding measures before these breaches, as well as the authorities that will know and will solve the appeal resources that are imposed against the administrative act.

6.22 ***LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION***

6.23 Law No. 81

In July 1997, the National Assembly formally approved Law 81, known as the Law of the Environment. Law 81 paved the way for the prompt adoption of a series of implementing laws, regulations and policies and it is the main Environmental Law in the Cuban juridical system. Its object is to establish the principles that govern the environmental policy and the basic norms to regulate the environmental management of the State and the actions of the citizens and society in general, in order to protect the environment and to contribute to reach the objectives of sustainable development of the country. Law 81 is designed to:

- Create a juridical context that favors the projection and development of socioeconomic activities in ways compatible with the protection of the environment.
- Establish the principles that guide the actions of natural and juridical persons in environmental issues, including the coordination mechanisms between the different organs and governmental agencies for an efficient management.
- Promote the citizens’ participation in environmental protection and sustainable development.
- Develop the citizens’ awareness of the problems of the environment, integrating education, divulgence, and environmental information.

6.24 Decree-Law 201, Of the National System of Protected Areas, 23rd day of December 1999.

Protected areas are defined as areas of national territory, declared as such under the laws in force and incorporated into the land use planning, that are ecologically, socially, historically, and culturally important to the nation and, in some cases, of international importance, specifically dedicated through effective management, to the protection and sustenance of the

biological diversity and related natural, historical and cultural resources, in order to achieve specific objectives of conservation and sustainable use.

Article 1 of the Decree-Law establishes the legal regime for the National System of Protected Areas, including the rules and regulations for exercising its governance, control and administration, the categories for protected areas, their proposal and declaration, the system for its protection and the granting of authorization to carry out activities in said areas.

6.25 Law of Mines (Law 76 of December 21, 1994)

The Law of Mines is a modern legislation, in harmony with the current socio-economic reality of the country. It promotes the necessary control by the State, the increase in the geologic knowledge of the country and the most efficient and rational exploitation of its mineral resources, also favoring the protection of the environment during the execution of all types of mining activity and the prevention of any environmental impact. The declaration process for Reserved Mining Areas, take into consideration human settlements in the chosen area and the existence of protected areas in any of their categories.

The Law of Mines constitutes the first Cuban juridical instrument of such a high rank that establishes the demand of the environmental impact assessment process. It recognizes the competence of the Ministry of Science, Technology and Environment in this matter.

6.26 Resolution No. 330 of 99. Ministry of Agriculture

Resolution No. 330/99 of the Ministry of Agriculture, dated September 7, 1999, enforces the Regulation of the Forestry Law that structures the State Forestry Service, in the Provinces and the Municipalities, and it is nationally directed by the Director of the Forestry Directorate of the Ministry of Agriculture.

According to Article 33 that a change of forest category will only be exceptionally authorized by the Director of the State Forestry Service. Chapter IV deals with the norms for forest management in the forest strips, establishing the width of the forest strips in buffer areas of reservoirs and natural water courses, those that surround springs and along depressions and ravines, prohibiting the construction of housings and facilities and the development of agricultural cultivations, as well as any type of land movement, unless it is carried out as part of the fulfillment of anti-erosive measures.

6.29 Cuban Norm 93-01-206

Cuban Norm 93-01-206 of Forest Strips establishes the dimensions and characteristics of the forest strips and the activities that are authorized in them.

7. NATIONAL REPORT: DOMINICA

7.1 *LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH*

7.2 Water Catchment Rules 1995

These rules were made under section 5 of the Act. The Rules prohibit certain acts in water catchment areas including washing equipment used for applying pesticides and containers which contain or have contained pesticides in any river or stream in the area. The Rules also prescribe action which must be taken in relation to the design, location and operation of dwelling houses in a protected forest. One such requirement is that there must be no direct discharge of household or industrial waste, sewerage or sludge into any stream or river. A number of water catchments are listed in Schedule 2 to the Rules. These are declared protected forests by Rule 8.

7.3 Forestry and Wildlife Act

The focus of this Act describes is to provide for the protection, conservation and management of wild mammals, freshwater fish, amphibians, crustaceans and reptiles and for purposes connected with those matters. Section 27 of the Act specifically prohibits persons from depositing or permitting the deposit of deleterious substances of any type in water frequented by fish, shrimps or crabs or in any place where the deleterious substance may enter the water.

Section 29 provides that a person engaged in logging, lumbering, land clearing or other operations is prohibited from placing slush, stumps or other debris into any water frequented by fish, shrimps or crabs or into any stream that flows into such water. The Minister also has general authority to make Regulations for the management and development of fisheries in the fishery waters.

7.4 Solid Waste Management Act 2002

The Solid Waste Management Act is an Act establishes a National Solid Waste Management Corporation and provides for the management of solid waste in conformity with best environmental practices. Section 19 of the Act prohibits the unauthorized disposal of solid waste. Section 37 of the Act deals specifically with the management of used oil and provides for the Corporation to prepare a scheme for the establishment of a used oil management system that provides for the environmentally-secure management of used oil gathered in Dominica. Section 38 also creates the offences of dumping and littering.

7.5 Environmental Health Services Act 1997

The Environmental Health Services Act describes itself in its long title as an Act to make provision for the conservation and maintenance of the environment in the interest of health generally and in relation to places frequented by the public.

It is the responsibility of the Minister to regulate, monitor and control the actual and likely contamination or pollution of the environment from any source, ensure compliance in all matters and activities relating thereto and establish minimum standards required for a clean, healthy and aesthetically pleasing environment.

The Act prohibits a person from dumping on or otherwise depositing or leaving refuse in a public place or open space. The Act also prohibits a person from transporting, treating or otherwise disposing of solid and liquid wastes on and from any premises otherwise than in accordance with the Act and Regulations made under the Act.

Section 12 of the Act requires a person who deposits in, adds to, emits or discharges into the environment any contaminant or pollutant or a person who is responsible for a source of contaminant or pollutant that is deposited in, added to, emitted or discharged into the environment in an amount, concentration or level in excess of that prescribed by Regulations to notify the Chief Environmental Health Officer of the deposit, addition, emission or discharge. Air, water and soil pollution regulations are expected to be made under the Environmental Health Act. These Regulations will have an impact on environmental health management and it is expected that by extension the marine environment will be affected.

7.6 Litter Act

The Litter Act seeks to provide for the abatement of nuisances caused by the littering of premises and public places and for connected or incidental purposes.

7.7 ***LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT***

7.8 Fisheries Act

The Fisheries Act seeks to provide for the promotion and regulation of fishing in the fishery waters of Dominica. According to section 22 the Minister may declare any area of the fishery waters and, as appropriate, any adjacent or surrounding land, to be a marine reserve where he considers that special measures are necessary for a number of purposes. One such reason is to afford special protection to the flora and fauna of such areas and to protect and preserve the natural breeding ground and habitats of aquatic life, with particular regard to flora and fauna in danger of extinction.

7.9 The Fisheries (Marine Reserve) Regulations

These regulations were made under section 38 of the Act. They prohibit certain activity in the marine reserve. The Regulations specifically prohibit a person from disposing of or dumping litter, soil, debris or pollutant in the marine reserve or causing a pollutant to enter the marine reserve.

7.10 Mines and Minerals Act

The implementation of the Mines and Minerals Act also has the potential to affect the management of watersheds and coastal areas. This Act controls prospecting, mining, exporting and disposal of minerals. A person may apply for various licenses under this Act including a mining license. An application for a mining license must contain –

(a) proposals for the prevention of pollution, the treatment of wastes, the safeguarding of natural resources, the progressive reclamation and rehabilitation of land disturbed by mining and for the minimization of the effects of mining on surface water and ground water and on adjoining or neighboring lands;

(b) the residual effects on the environment of the mining operations and proposals for their minimization;

(c) any significant effect which the carrying out of the programme is likely to have on the environment and on any monument or relic in the area over which the license is sought and proposals for eliminating or controlling that effect.

In addition the Act provides that a mining license shall not be granted unless the programme of proposed mining operations, *inter alia*, takes proper account of environmental and safety factors.

7.11 **LEGISLATION RELATING TO LANDUSE**

7.12 Physical Planning Act 2002

The Physical Planning Act provides *inter alia* for the orderly and progressive development of land and for the grant of permission to develop land and for other powers of control over the use of land. Part VI of the Act deals with environmental protection. The Physical Planning and Development Authority may recommend to the Minister that identified areas be declared environmental protection areas. Where the Minister is satisfied that an area should be an environmental protection area he may make an Order to that effect which, among other things, may prescribe the nature of activity permitted in the area.

The Physical Planning and Development Authority may also prepare an environmental protection area management plan. The purpose of the plan is to set out the operational policies and measures for the preservation, enhancement and management of

the special features of the environmental protection area. This may include policies and measures for the preservation of marine and terrestrial flora and fauna including the regulation of hunting and fishing, the protection of water supplies, water catchment areas and mineral resources and the designation of special resource and use areas in the coastal zone. A general development plan prepared by the Authority may, if the Authority considers it appropriate, also provide for the allocation of lands for the protection of marine life and the protection of the coastal zone, designation of marine parks, special resource and use areas.

7.13 ***LEGISLATION RELATING TO WATERSHEDS***

7.14 Forests Act

The Forests Act provides for the conservation and control of forests. This Act provides for the President to declare private lands to be protected forest whenever in his opinion this appears to be necessary for a number of purposes including for the maintenance of water supplies in springs, rivers canals and reservoirs and for the preservation of health. Where an Order is made declaring an area a protected forest the President may make Rules to regulate or prohibit certain activity within that area. The President is given a power to make Rules for certain purposes under the Act. These purposes include prohibiting or regulating cultivation, residing, camping, squatting or building in forest reserve or on State land and controlling the entry of livestock into forest reserve or State land.

7.15 Water and Sewerage Act

Under the Water and Sewerage Act, water management authority for the country has been granted to Dominica Water Sewerage Company Limited Dominica Water Sewerage Company Limited (DOWASCO) which includes among its functions water conservation and the preservation and protection of catchment areas. Relative to the catchment areas, these responsibilities are shared with the Forestry and Wildlife Division. DOWASCO also shares responsibility with the Ministry of Health for preventing pollution of water resources and for ensuring a safe water supply. Part VII of the Act specifically addresses the issue of water pollution control. Where it is necessary to protect the quality of water resources the Minister may, by Order declare the area to be a controlled water quality area.

7.16 Water and Sewerage (Catchment Area) Regulations 1995

These Regulations were made under section 13 of the Water and Sewerage Act. Regulation 4 specifies certain activities which are incompatible uses of a water catchment. These uses include agricultural activity requiring the use of agro-chemical inputs and camping. A person who contravenes the provisions of the Regulations commits an offence.

7.17 ***LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION***

7.18 National Parks and Protected Areas Act

This Act provides the legal basis for Dominica's forward-looking parks and protected areas system. The Act authorizes the Minister to designate Government lands as protected areas for the preservation of natural features and for the conservation of historic sites and landmarks. The Minister may, with respect to the national parks system, make Regulations for carrying out the purposes of the Act and he may make Regulations providing for, *inter alia*, the preservation and maintenance of water supplies and any water catchment area and for the prevention of soil erosion, landslides, the formation of ravines and torrents and the deposit of mud, silt, stones and other material in any water.

8 NATIONAL REPORT: DOMINICAN REPUBLIC

8.1 *LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH*

8.2 Law No. 42, General Law on Health of 2004

Art. 41. - The State Secretariat of Public Health and Social Assistance (SESPAS), in coordination with the State Secretariat of Environment and Natural Resources and the institutions and organizations corresponding potable water and basic sanitation sector, city councils, General Directorate of Norms and Systems (DIGENOR) and other sectors related to this field, are required to cooperate to promote and collaborate in the development of programs for environmental sanitation. This includes the collection, elimination, discharge and treatment of black and waste waters, as well as in the elaboration of the norms that regulate the operation, construction, repair or modification of the systems of elimination or disposal of solid wastes.

Art. 44. prohibits the throwing of the solid and liquid wastes or any decomposed, toxic or noxious substance into the public potable water supplies.

According to Art. 47 public health institutions and other health establishments that produce toxic or radioactive matters or substances, pollutants or other pathogenic or noxious wastes injurious to health are required to put a waste disposal system in place.

Art. 49. - The elimination of gases, steams, smoke, dust or any polluting agent produced by domestic, industrial, agricultural, mining, service and commercial activities, are required to be done in a manner that does not compromise the public health.

8.3 Law No. 311 of 1968

This law regulates and harmonizes the use of pesticides in the country. In order to extend the effectiveness and applicability of this law, in 1988 it was passed the decree No. 322 that regulates the use of pesticides jointly with the countries members of the International Organization of Agricultural Health (OIRSA).

8.4 Decree No. 217 of 1991

The sale, use, import, export, and manufacture of twenty (20) agrochemicals, for considering them as harmful for the human health and the environment is prohibited under this law. These legal provisions are administered by the State Secretary of Agriculture (SEA).

8.5 Law No. 146 of 1971 Law of Mines

Prohibits the use of substances that affect the flora, fauna and the human beings. In its articles 133-138, it is contemplated that the air, the water bodies and the land adjacent to the mine zone cannot be altered by the mining operation or procedure. These alterations in the resources next to the mines must be avoided or be restored to their original state.

The wastes from mining exploitation spilled into the rivers and the sea can cause serious damages mainly in the zone next to the mouth or estuaries.

8.6 Title III - PROTECTION OF THE ENVIRONMENT, Chapter I on the General Norms

Art. 82. forbids the spill of polluting substances or wastes on soils, into rivers, lakes, lagoons, streams, dams, the sea and any other water body or course. Under Art. 83 any person that is responsible for an activity that has resulted in an environmental degradation shall immediately take necessary measures to control its effect and will notify to the State Secretariat of Environment and Natural Resources and to State Secretariat of Public Health and Social Assistance or other related official dependencies.

Chapter II - Water Pollution

Art. 86. forbids the location of any type of facilities near public water supplies to the population and industries, whose wastes, even when treated, present potential risks of pollution of the physical, chemical, organic, thermal, or radioactive order, or of any other nature, or present potential risks of pollution.

Art. 88. - The State Secretariat of Environment and Natural Resources, as competent authority shall determine, in consultation with the sectors involved, the destiny of wastewaters, the characteristics of the receiving bodies and the required previous treatment, as well as the permissible polluting loads.

8.7 ***LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT***

8.8 Law No. 305 of 1968 (Official Gazette No. 9082 of May 29, 1968), establishes the maritime zone in an extension of 60 meters from the high tide line. This zone includes the navigable and floatable rivers and streams, lagoons and lakes. Article 2 prohibits all types of constructions in the marine zone, even of provisional character, except for those which are exceptionally authorized by the Executive Power for tourist purposes and other of public utility. Moreover, Art. 3 declare as National Park a zone of 75 meters in the South coast of Santo Domingo District, measured from the line reached by the ordinary high tide. This zone will

include the area in which the avenues George Washington, 30 de Mayo and Las Americas run parallel to the Caribbean Sea, up to the crossing of 30 of May with the highway Sanchez, by the West, and the crossroads of Las Américas avenue with the entrance to Caleta town, on the East. This Law is applied by the Military Navy.

8.9 Decree No. 318 of 1986,

Art. 1 of this decree prohibits the extraction and commercialization in all territorial waters of the country of several genera of corals.

8.10 Decree No. 249 of 1986

It declares an area of the Caribbean Sea as National Park with the name of "La Caleta Submarine Park". (Official Gazette No. 9695 of September 30, 1986).

8.11 Law 3003 of 1951 (Official Gazette No. 73 14 of August 4, 1951), on the Police of Ports and Coasts

In its Chapter I, Article I, the General Police of the Ports, Anchorages and Coasts of the Republic is entrusted to the State Secretariat of War, Military Navy and Aviation, to the Commanders of Port and other authorities foreseen in the present Law. Articles 6, 37 and 38 of this law establishes the elements and prohibitions relevant for vessels in national ports.

8.12 Constitution of the Dominican Republic of 2002

In its 5th article, 3rd paragraph it is established that the territorial sea, the corresponding submarine grounds and subsoil, as well as the airspace over them are part of the national territory. The extension of the territorial sea, of the airspace and the adjacent zone and its defense, as well as of the submarine grounds and subsoil, and their use will be established and regulated by the following specific laws -

- Law No. 186 of 1967 which establishes the territorial limits to be six (6) nautical miles.
- Law No. 305 of 1968 (Official Gazette No. 9082 of May 29, 1968) that establishes the maritime zone in an extension of 60 meters from the line of high tide. Its Article 2 prohibits all types of constructions in the maritime zone, even of provisional character, except for those exceptionally authorized by the Executive Power for tourist purposes and other of public utility.

Art. 152. –prohibits the spill of bilge waters, ballast waters or those from washing tanks, at a distance shorter than that established in the provisions in force, wastes generated by the prospecting and exploitation of oil wells located in places where they can affect the coastal zone; industrial wastes, whose content in hydrocarbons and other hazardous or noxious substances exceeds the established norm and the dumping of garbage or wastes of any kind on the coasts, keys, beach sands or in the

waters that surround them.

8.13 ***LEGISLATION RELATING TO LANDUSE***

8.14 Law No. 6232 of 1963 (Official Gazette No. 8761 of April 6, 1963).

According to Art. 40, any project, infrastructure work, industry, or any other activity that for its characteristics can affect, in one way or another, the environment and natural resources, an environmental permit or environmental license is required from the State Secretariat of Environment and Natural Resources, prior to its commencement of the project. Art. 41. lists the projects or activities that require an environmental impact assessment. They include ports, wharves, routes of navigation, breakwaters, groynes, channels, shipyards, ship-breaking facilities and maritime terminals.

8.15 Decree No.233 -96 of July 30, 1996 applies the categories established by the International Union for the Conservation of Nature (IUCN), to recreational areas and creates the national areas of recreation, among them is included Playa de Andrés-Boca Chica.

8.16 ***LEGISLATION RELATING TO WATERSHEDS***

8.17 Chapter II – Water Pollution

Art. 86 prohibits the location of certain types of facilities near public water supply areas

Art. 87 establish the boundaries for water bodies, hydraulic works and facilities, as well as of natural and artificial channels, with the objective of preventing pollution hazards, devastation or other forms of degradation. Wastewater management companies within a locality are required to comply with the norms and parameters in force for discharges of domestic wastewaters, or other types discharged into the municipal sewage system. 89 establish the standards for using wastewaters.

8.18 ***LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION***

8.19 Decree No. 303 of 1987, on the protection of the mangrove swamps of the Dominican Republic. (Official Gazette No. 9712 of June 15, 1987).

Art. 1 contains provisions for the protection and rehabilitation of existing mangrove swamps in the coast and in the adjacent

islands in the Dominican Republic.

- 8.20 Decree No. 1728 of 1976 regulates the extraction of corals. (Official Gazette No. 9396 f 1986)
Art. I establishes that the requirement for a permit to extract corals in territorial water. The permit is granted the Department of Hunting and Fishing of the State Secretary of Agriculture.
- 8.21 Law No. 64 of August 18, 2000 General Law on Environment and Natural Resources (Official Gazette No. 10056 of 2000).
Articles 2 to 13, establish the fundamental principles of the Dominican environmental law, for the prevention, regulation and control of any of the causes or activities that bring about deterioration of the environment, pollution of the ecosystems and degradation, alteration and destruction of the natural and cultural patrimony.

9 NATIONAL REPORT: GRENADA

There is no legislation at present that addresses the subjects of coastal areas, coastal forest, mangroves and wetlands either directly or indirectly. By extension, no legislation has been identified which specifically addresses the issue of integrated watershed and coastal area management as a tool for prevention of marine pollution by land based sources. The related pieces of legislation follow.

9.1 *LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH*

9.2 Oil in Navigable Waters

The Act provides for the protection of the coastal waters from pollution associated with the transport, delivery and transfer of petroleum products. The Act is thus primarily one for dealing with preventative and mitigation measures for protecting the coastal and inland waters of Grenada.

9.3 Civil Liability for Oil Pollution Damage

This is legislation putting into force an international convention for providing compensation for oil pollution damage. The Act therefore is a useful tool for preventing and mitigating loss due to oil pollution damage. The Act requires contributions from ship owners to be put into a special fund which is used to compensate the measures taken to mitigate and minimize oil pollution damage.

9.4 Pesticides Control Act

The Act is a useful tool for regulating the use of hazardous substances. Thus, the Act ensures that those substances are properly labeled, used and disposed off. The Act thus speaks to the preservation and protection of ground water supplies and the promotion of human health through safe practices.

9.5 Public Health Act CAP - 263

This Act governs all matters relating to human health and is thus of universal application in the management of the effects of global warming and sea level rise. The Act also has a cross-sectoral application with respect to flooding through the enforcement of proper drainage throughout the State.

9.6 Grenada Solid Waste Management Authority Act, 1995

This Act established the Solid Waste Management Authority and charged it with the duty of developing solid waste management facilities and improving the coverage and effectiveness of solid waste storage, collection and disposal facilities.

The Authority is established pursuant to section 3 of the Act. Amongst the duties and functions of the Authority are those to develop a management scheme for all aspects of solid waste and to undertake the necessary research, experiment and operations necessary to improve the Authority's functions.

The Act provides for the acquisition of land for the purpose of the Authority carrying out its responsibilities.

9.7 Draft Marine Pollution Management Bill

This draft is intended to address marine pollution from all sources. The draft is awaiting enactment.

9.8 ***LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT***

9.9 Beach Protection Act Cap. 29

This 1990 Act prohibits the unauthorized removal of sand, stone, shingle and gravel from the seashore. This is specific to the concerns of coastal erosion, salt water intrusion, and the protection and preservation of coastal infrastructure.

9.10 Carriacou Land Settlement and Development Act Cap 42

This Act has specific application to the prevention of coastal erosion, the prevention of landslides and the protection and preservation of sensitive mangroves areas from indiscriminate destruction by the makers of charcoal.

9.11 Crown Lands Act

The Act vests the Governor-General with the power to make rules for the management of Crown lands. This Act relates only to Government lands and there is some overlap with existing forestry legislation. This Act is a good example of the incidental application of environment law. The Act was passed primarily to regulate the conduct and management of fisheries. At the same time, it makes provision for the protection of marine areas and the adjacent or surrounding land. These provisions are relevant to the management of the coastal zone with respect to coastal erosion, the protection of reefs, aquatic and marine plants and animals, oil pollution and mangrove forest on the near shore.

9.12 Territorial and Maritime Boundaries Act CAP 318

The Act defines the extent of Grenada Sovereignty but it also provides for the protection of the marine environment. This Act therefore can be utilized to assist in the management of the coastal zone. Section 34 (1) provides the Minister with the power to make rules for among other things, the preservation of the marine environment. The Minister also has the responsibility for

making regulations generally for carrying into effect the provisions of the Act and particular with respect to regulating the conduct of persons with respect to the territorial sea, archipelagic waters, exclusive economic zone and continental shelf.

9.13 Fisheries Act – Cap. 108

The Act defines fishery waters as “the waters of the territorial sea and the exclusive economic zone and the internal waters and archipelagic waters, as defined in Section 2 of the Territorial Sea and Maritime Boundaries Act, waters over which Grenada claims fisheries jurisdiction.

9.14 Bathing Places Act Cap. 28

An Act to empower the Minister to make rules for the development, regulation and control of public bathing places on and around the coastline. The powers of the Minister appear to be wide enough to accommodate environmental concerns and coastal management policies.

9.15 Ports Authority Act Cap. 247

An Act to establish the Grenada Ports Authority as a corporate body with all necessary powers to provide, manage and maintain efficient port services and facilities.

9.16 ***LEGISLATION RELATING TO LANDUSE***

9.17 Physical Planning and Development Control Act 2002

The long title of this Act states its purpose as being to make fresh provision for the control of physical development, to continue the Land Development Authority, to require the preparation of physical plans for Grenada, to protect the natural and cultural heritage and related matters.

The Act requires the preparation of a physical plan for the whole of Grenada. The plan is required to include prescriptions for the use of land which represents the results of an integrated planning process. The chief executive officer must, in preparation of the physical plans, collaborate with any governmental organization and non-governmental organization which have an interest in the matters for which proposals may be in the plan, including amongst other matters the management of water and other natural resources. Prior to finalizing the plans, there must be adequate publicity in relation to the proposals and persons in the public domain who wish to make representations in relation to the plans must be given the opportunity to make those representations with-in a stated time-frame.

All land development is regulated by the Act. In addition to the usual requirement for plan of the land, drawings and other materials, the Authority can require an environmental impact assessment be carried out in respect of any proposed development. Pursuant to the Act there is to be established a committee called that Natural and Cultural Heritage Advisory Committee. This committee advises the Authority on amongst other matters, application for development of land within environmental protection areas, and the issue of abatement notices for the preservation of amenities.

9.18 The Grenada Building Code:

The Building Code was updated in 1999 and establishes safety standards for building and building construction. The code addresses adequately the standards required for buildings which can effectively withstand the adverse effects of hurricanes, floods and heavy seas.

The code is administered by the Land Development Control Authority and thus ties in with the regulatory aspects of that Authority. This cross-sectoral responsibility puts the Control Authority in a good position to monitor and enforce the approved standards. The Act also provides ideally for the prevention of loss through the enforcing of adherence to the requirements of the Code.

9.19 Crown Lands Act

The Act provides the Governor-general with the power to make rules for the management of crown lands. This Act relates only to Government lands and there is some overlap with Forest Legislation.

9.20 Land Development Control Act

The Act controls and manages development and land use activities in conformity with approved environmental standards. This makes this Act one of the more important tools for determining where and what type of development could be carried out in Grenada.

This Act properly administered could be applied generally for the prevention, mitigation, relocation and change in user activity envisaged under the project. For example, development could be prohibited in areas vulnerable to flooding or the effects of storm surges and heavy wave action.

9.21 Roads Act Cap. 290

An Act relating to the construction and maintenance of roads and the regulation of traffic thereon. Divides Grenada into four districts called "Road Districts". The Act gives power to the Road Authority to enter upon any land for the purpose of road works.

9.22 ***LEGISLATION RELATING TO WATERSHEDS***

9.23 Forest Soil and Water Conservation Act, Cap. 116

This Act which came into force in 1949 makes provision for the conservation of forest, soil, water and other natural resources. It provides for the establishment of a Forestry Department within the Ministry of Agriculture, Forestry, Lands & Fisheries (“the Ministry of Agriculture”). The Forestry Department is vested with the responsibility of implementing a forest policy, defined within the Act. The aims of the 1984 policy include amongst other matters the following:

- Effecting permanent preservation of tree cover to prevent soil erosion and flooding;
- Maintain the level of forest growing stock;
- Protect the natural and undisturbed habitat for indigenous flora and fauna;
- Encourage and assist the owners and managers of forests, woodlands and plantations on private and Crown land;
- Initiate and conduce where possible the forest research necessary to achieve the aims of forest policy.

The Governor-General has the power to declare any Crown land to be a forest reserve and the power to declare any land other than Crown land to be a protected forest. There is a prohibition against the sale of any land within a forest reserve. The purposes of a protected forest are stated amongst other matters to be for protection against soil erosion, deposit of mud, stones and sand upon agriculture land, prevention of wastage of resources in timber, time securing the management of lands whereupon trees are growing not under permanent agriculture cultivation.

According to section 18, on Crown lands persons are forbidden from felling, cutting, marking, tapping any tress, causing damage by negligence in felling a tress or cutting a tree, carrying on any fire, pasturing any livestock or permitting the livestock to trespass, clearing or cultivating and are prohibited from entering the area.

9.24 Crown Lands Forest Produce Rules Cap. 116

- (1) These rules provide the procedure for harvesting trees on Government crown lands;
- (2) Licenses are required to cut timber or to burn charcoal;
- (3) Trees to be cut are to be stamped with the Government sale marking dye;
- (4) Provide for the payment of royalties and dues payable in respect of timber and forest produce;
- (5) Provide penalties for breach of the rules.

9.25 Grand Etang Forest Reserve Act, Cap.124

This Act came into force in 1906 and its objects are stated as being for the preservation of forest growth in the vicinity of the Grand Etang, conservation and promotion of rainfall. The area of land covered in the Reserve is defined in the Act.

9.26 National Water & Sewerage Authority Act, Cap.208

This Act establishes the National Water and Sewerage Authority as a corporate body with sole responsibility for the provision of water supplies, conservation, augmentation, distribution, preservation and protection of catchments.

The Authority is also responsible the treatment and disposal of sewage and other effluents. The duties of the Authority include investigate water resources at Grenada, make recommendations as to conservation and preservation, provide potable water for domestic use and water for agriculture, industrial and commercial purposes.

The right to the use of every body of water is vested in the Authority and no person is permitted to divert, abstract, obstruct or use water from a body of water otherwise than under or by virtue of the provisions of the Act.

The Act provides that the Minister on the advice of the Authority can declare protected areas by notice in the Gazette where he is satisfied that special measures are necessary for the protection of public water resources in or derived from specified areas.

The Chief Forestry Officer is responsible for the protection, conservation and maintenance of catchment areas. Catchment areas on Crown land are to be reserved for the augmentation of water supply and the land on which they are located is not to be sold, leased or otherwise disposed of.

9.27 Draft Protected Area, Forestry and Wildlife Act 2003

This draft has been prepared with technical assistance from DFID. The text of the draft law presented in this document has been prepared following a one week workshop in 2002 in Grenada, in participation with key stakeholders from Government departments, Private sector, NGO's, Community organizations and other interested individuals. It reflects suggestions and comments received during the workshop and subsequent observations raised by the Forestry department management team. A particular effort has been made to identify means for the new law to be effectively implemented. Some mechanisms has been set out in the text e.g. there is a deadline within which management plans must be adopted, with a condition that following the deadline, no permits be issued except in accordance with the plan.

The following are among the most significant or most innovative provisions of the proposed draft -

- Protective forests

- Watershed Management
- Prohibitions and requirements for permits
- Establishment of forest and National parks Advisory Council
- Adoption of National and Management Plans
- Forests on Private lands
- Protection rules (offences in Forest reserves and Protected areas)
- Ownership of wildlife
- Prevention of fires

The department is in the process of developing new regulations (rules) for the enforcement aspects of this draft Act.

9.28 ***LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION***

9.29 Draft Environmental Management Act, 2007

This draft Act, prepared with technical assistance from UNEP/ROLAC, is a culmination of a 2 year effort that included widespread national consultation. The policy instruments that guided the preparation of the draft identified weak collaboration among agencies as a key problem to effective environmental management in Grenada. In response to this concern, the draft Act proposes an integrated management framework for environmental management. The draft Act contains provisions as regards the control of pollution from all media and all sources, the prevention of marine pollution, the setting of standards and enforcement measures. If enacted in its present form, the Environment Division will be established as the lead agency responsible for environmental management and pollution control in Grenada. The Act also proposes the establishment of an MEA Committee to be responsible for the implementation of Grenada's international obligations under these instruments. The draft Act has not proceeded beyond its draft form.

9.30 National Parks and Protected Areas Act

Like the Crown Lands Act, this Act regulates conduct on government controlled land declared as a National Park. The Act thus provides a good regulatory framework for the control and management compatible with the objectives of prevention and mitigation loss envisaged by the project. The Act speaks to the prevention of water supplies, the prevention of land slips and the formation of torrents and ravines. Thus the Act is important for the prevention and mitigation of floods and ensuring that there is an adequate and safe water supply.

9.31 Birds and Other Wildlife (Protection) Act, Laws of Grenada 1990

An Act for the protection of wild birds and other wildlife including fish, lobsters turtle and oysters.

9.32 National Trust Act

The Act has some relevance to the management of the environment with specific reference to submarine areas. As such, it could be a useful tool for the protection of coral reefs and other marine plant and marine life in those areas. The Act demonstrates the multi-sectoral application of environmental law. Thus while the Act is primarily one for the preservation of historic and other areas including submarine areas of natural beauty, properly coordinated, it could be utilized for the management of the coastal zone.

9.33 Tourist Board Act Cap. 321

An Act to establish a Board of Tourism for the purpose of developing the tourist industry and promoting its efficiency and to provide for connected matters.

10. NATIONAL REPORT: HAITI

10.1 *LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH*

10.2 Constitution of the Republic of Haiti, Decree of October 27, 1978

These provisions seek to regulate matters relating to pollution and the protection of threatened species of corals, mangroves and turtles and the management of the fisheries.

10.3 Decree of March 3, 1981

In a general context, a legal instrument treating marine pollution does not exist in Haiti. This Decree governs the management of waste disposal touching only indirectly on the matter of marine pollution.

10.4 *LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT*

10.5 Constitution of the Republic of Haiti , Decree of April 6, 1977

By Article 8 of the Constitution, the limits of the territorial sea are fixed at 12 nautical miles.

10.6 Chapter V: Des Eaux Maritimes et de Leurs Ressources

Art 126: This Article establishes the coastline within the public domain of the State. No occupation, exploitation or construction can jeopardize the free access to the marine public domain, neither free circulation on the country's beaches.

Art 128: The pouring, immersion, direct or indirect introduction into the sea substances susceptible to harm (damage) public health, biological resources is prohibited as they pose problems to marine activities including marine navigation and fishery, compromise the quality of marine waters, and deteriorate the aesthetic values and tourist potential of such waters.

Article 132 : Makes provision for the establishment of adequate regulatory measures to prevent and combat marine pollution, coming from the ships and sea installations or land-based will be fixed by regulations ways

10.6 **LEGISLATION RELATING TO LANDUSE**

10.7 Law of August 27, 1963

By this law the hydrographical basin of Morne de l'Hopital is established as a "Protection Zone ". Under Decree of November 20, 1972 a National Commission called Commission Nationale d'Aménagement des 2000Ha du Morne de l'Hopital to manage the affairs of the basin was established.

10.8 **LEGISLATION RELATING TO WATERSHEDS**

10.9 Law of May 8, 1936

This enactment incorporated Cerusier-Plaisance as a reserved zone.

10.10 Law of September 19, 1958

This law protects the soil against erosion determining the boundaries and regulating the forestry exploitation in Haiti.

10.11 Law of May 24, 1962

This law provides a general treatise on the protection the soil and the forests (Extraits du Code Rural de 1962).

10.12 **LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION**

10.13 General Decree on Environment, *Décret Cadre sur l'Environnement*, prepared by the Ministry of Environment and promulgated to the Official Journal of the Haitian State, *Le Moniteur*, on January 26, 2006 (161 th Year, Number 11) (The 2006 Framework Decree)

The approval of the General Decree represents a major step in terms of prospects to solve jurisdictional conflicts in environmental management in the country. The initiative, which represents the legal foundation of the national policy of environment and provides regulation guidance for a responsible behaviour of Haitian citizens in terms of sustainable development, is supposed to serve as a legal umbrella strategy for all sectors of the environment in Haiti, including coastal zones and watersheds even if its implementation appears to be a big challenge due to its ambitious character.

This decree focuses on the management of the environment and regulation is, without precedent, a major event for Haiti. This decree has in fact introduced new principles such as the polluter pays principle and public participation, environmental impact assessments and public hearings. According to many critics of this law, the decree will be difficult to apply given the high number of new institutions it created.

11. NATIONAL REPORT: JAMAICA

11.1 *LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH*

11.2 Pesticides Act 1987

This Act and its Regulations control the importation, manufacture, use and sale of pesticides in Jamaica. A register of pesticides and licensed pest control operators must be kept at the Pesticides Authority and the Minister of Health is the relevant Minister.

Pesticide contamination is not monitored by the Authority although its inspectors enforce its provisions which include a range of offences such as packaging, labeling or advertising pesticides in a misleading or deceptive manner.

11.3 National Solid Waste Management Act 2001

This established an Agency of the same name as the primary body responsible for solid waste management in Jamaica. The Agency must dispose of solid waste in an environmentally sound manner, provide receptacles for litter, develop public education programmes, landfill sites and codes of practice. Operators of solid waste disposal facilities must be licensed and littering or otherwise disposing of solid waste except as authorized are punishable offences.

Fines under this Act are some of the highest ever. Enabling legislation in the form of Regulations has been under draft since the passage of the Act.

11.4 *LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT*

11.5 Beach Control Act 1956

This Act protects and regulates use of the foreshore and the floor of the sea. These areas are not considered public areas, but as belonging to the Crown. Specific activities that are monitored include commercial, fishing and boating activity. It also covers the erection of docks, piers and related structures on the foreshore or sea floor and it also regulates disturbance and removal of sedentary marine animals from the sea floor.

It also regulates public recreational beaches and gives power to the Minister of Environment to declare protected areas and to confine activities within them. The designated Beach Control Authority is the NRCA and there are no Regulations to the Act.

11.6 Fishing Industry Act 1976

This is the primary law regulating the fishing industry. It has been under review for almost a decade, which was motivated by the recognition that the industry is under threat from overfishing and bad fishing practices. These include the destruction of reefs by the use of dynamite to kill fish in large quantities at a time. A draft policy for the sector entitled “Plan for Sustainable Fisheries” is in the process of completion. Its status is unknown at this time.

The Act registers fishermen and fishing boats and prohibits certain harmful fishing activity including the use of undesirable equipment. Fishing activity may be limited in time by the declaration of closed and open seasons, or geographically by the declaration of a fish sanctuary. Fisheries Inspectors may enter, search and seize boats or illegal fishing equipment.

The Act gives the relevant Minister regulatory-making power in respect of the management and control of fishing and beaches. These Regulations are however outstanding.

11.7 Flood-Water Control Act 1958

This Act allows flood-water control areas to be established. Any government or statutory body can be established to undertake the scheme notwithstanding that it may not otherwise have the power to do so. That body will then be responsible for doing investigations and other preparatory work towards establishing the scheme and to actually implement it.

In doing so the implementing body has the power to enter private lands in emergency situations to do work to this end, that is, any work necessary to secure proper control of, or defense against, flooding. In doing so watercourses may be altered by widening or straightening out or by making new channels whether by pipes, drains or other means.

Compensation must be paid to landowners who suffer loss or damage as a result. If the land is rendered useless to the owner as a result of the scheme then such land may be purchased instead in accordance with the Land Acquisition Act.

11.8 ***LEGISLATION RELATING TO LANDUSE***

11.9 Town and Country Planning Act 1958

This Act regulates land use for development. It operates a permit system to grant planning permission and amendments have now linked the grant of planning permission to the grant of (environmental) permits under the NRCA Act. Both Acts are now administered via the same agency, the National Environment and Planning Agency which is an Executive Agency created in 2001.

The Act is operated through a central Town Planning Authority and through local planning authorities that are vested within the various parish councils that altogether cover the island's entire geographical area.

The Act also facilitates a higher level of development control through the Development Orders (DOs) that are long term plans that earmark certain areas for certain types of development that is, housing, commercial and so on. Most DOs are dated being several decades old. The Act does not have explicit zoning provisions although zoning is referred to and it does not recognize buffer zones to offer protection to watershed, coastal zone or other sensitive areas.

11.10 Land Development and Utilization Act 1966

This Act establishes a Commission of the same name (LDUC) with the authority – subject to Ministerial approval – to order the designation of lands as agricultural lands. Some lands are exempt from being subject to such orders. For example, no order can be made for lands that are already approved under the Town and Country Planning Act for development other than for agriculture. In addition, before any order can be made the Commission must consult with the relevant watershed authority established under the Watersheds Protection Act or the Rural Agricultural Development Authority (RADA) Act in relation to the land being contemplated for the order.

11.11 Rural Agricultural Development Authority (RADA) Act 1990

This Act established an Agency of the same name – RADA. It is a key agency in the development of best practices for agricultural activities within rural watersheds and has an island-wide spread by virtue of the development and operation of satellite agricultural service centers.

11.12 Quarries Control Act 1984

This Act allows for the creation of zones within which quarrying activity can take place.

Persons must be licensed to operate a quarry and failure to do so attracts criminal sanctions. Applications must be made to the relevant Minister who must consult with the relevant authorities defined under the Act to include the Water Resources Authority, local Parish Councils, the NRCA or any other statutory body or agency appearing to have an interest in or be affected by the decision.

The Minister shall refuse a license if he considers it to be against the public interest. Relevant considerations include any possible effect on the character of the environment including the flora and fauna, the availability of the natural environment for the enjoyment of the public, any possible effect on the water table or surface drainage system and the character, location and size of nearby communities.

11.13 Mining Act 1947

This Act regulates mining and prospecting of land and is implemented through a Commissioner of Mines. There is a licensing regime for both and failure to adhere to it can result in criminal sanctions, although fines are very low. Except with the consent of the Commissioner, certain lands should be excluded such as within town limits, lands dedicated for a public purpose or within one hundred yards of buildings, works, dams or reservoirs owned or occupied by the government or another public authority.

All minerals obtained from prospecting and mining are subject to royalty payments. Bauxite mining in particular is a lucrative economic sector for the economy.

11.14 Housing Act

This Act allows the Minister of Housing to declare areas as “housing areas” if such a need is deemed to exist in a particular area. In so doing certain notice must be given to the local planning authority (parish council) which must be given the opportunity to raise objections. However, Minister may make an order notwithstanding. The Housing Act then arguably overrides the developmental considerations under the Town and Country Planning Act which does not explicitly bind the Crown. Declarations under the Housing Act are not uncommon.

11.15 Local Improvements (Community Amenities) Act 1977

The Act allows the government, through the Commissioner of Lands, to compulsorily obtain a limited leasehold interest in land (10 years) to undertake improvements in the public interest including “amelioration enduring to the benefit of the land from its reclamation, clearance, excavation, filling, grading, leveling, protection against erosion or flood, or any other works, additions or alteration”.

11.16 ***LEGISLATION RELATING TO WATERSHEDS***

11.17 Watershed Protection Act 1963

The Watershed Protection Act (WPA) is the premier and most direct law relating to watershed protection. The Natural Resources Conservation Authority (NRCA) is the implementing body for the Act which places it under the portfolio of the Minister responsible for the Environment.

Its aim is to protect watersheds and to promote the conservation of water resources. It also recognizes the importance of protecting areas adjacent to watersheds, although no zoning laws or regulations adjunct to this or any other statutes are in place. No directives as to management of watersheds areas are given under the law and in fact there is no definition of a “watershed” in it. There are also no Regulations to the Act although it has a number of Orders that demarcate the geographical boundaries of named watersheds.

There are significant areas of functional overlap with the Water Resources Authority and the Forestry Department and all 3 agencies partake in various levels of cooperative interaction.

At least one preliminary review of the Watershed Protection Act has been done but no date or specific time for completion was obtained.

11.18 Forest Act 1996

This Act addresses forest fires, cutting of trees for firewood and other purposes, the use of improper tools and technique by farmers and denuded hillsides that resulted in land slippages and sometimes flooding.

The Act maintained the Forest Department, which is a division of the Ministry of Agriculture and is headed by a Conservator of Forests. Its functions are to, *inter alia*, sustainably manage and conserve forests in Crown land or forest reserves, prepare and implement a national forest management and conservation plan, establish and promote public education programmes, grant licenses and permits and protect and preserve watersheds in forest reserves, protected areas and forest management areas.

The Act allows for declaration of three types of restricted areas by the Minister: forest reserves, forest management areas and protected areas. Protected areas can be declared for protection against storms, floods, landslides, erosion, maintenance of water supply in springs and rivers, against forest fires, the protection of national amenities and so on. This can be done in Crown lands or on the application of private landowners, again with incentives.

The Act also allows for the appointment of forest management committees, whose functions include the monitoring of natural resources in forest reserves, management areas or protected areas, holding of discussion, public meetings and like activities relating to those resources, proposing incentives for conservation practices in the area and giving developmental advice to the Conservator of Forests who heads the Department. This community inclusive concept is in direct contrast to the Watersheds Protection Act, which does not recognize such modern approaches at all.

11.19 Water Resources Act 1995

This Act creates an Authority of the same name whose primary responsibility is the management of surface and underground water throughout the island. It allocates water resources throughout the island, obtains and disseminates water resources data, exercise planning functions in relation to the National Water Quality Master Plan, controls the quality of water resources according to the Act and provides technical assistance to other departments or Agencies of government on activities that relate to its overall mandate.

The WRA also operates a licensing system for the abstraction and use of water and the construction any other works to carry this out. Exceptions are abstraction for domestic use or if the person has a right of access to the water. The extraction of underground water is also licensed, as is the drilling of wells to do so. Any person extracting minerals pursuant to permission granted under the Mining Act must have regard to the WRA's directions regarding protection of underground water resources when constructing a new boring or altering an existing one. The WRA also has the power to determine the safe yield of aquifers.

The Authority can also establish water quality control areas. The procedure for establishing these areas are provided for in the Act. The Minister is also empowered to declare emergency areas if the water supply threatens to become inadequate because of drought or other conditions. On advice, the Minister may also reserve all or part of a water supply for a public purpose.

11.20 National Water Commission Act 1963

The National Water Commission was established with functions to, *inter alia*, maintain and operate water supplies and to set rates to charge for same. The Commission was established as a body corporate to allow it to take certain steps in the performance of its functions including land acquisition. It can also alter roads, streets or lanes adjoining land acquired for the purpose of water supply services.

The Act does not impose any specific responsibility on the Commission for environmental management, regulation or protection

11.21 ***LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION***

11.22 Natural Resources Conservation Authority (NRCA) Act 1991

The NRCA Act establishes Jamaica's lead environmental regulatory agency. There is no other entity or agency emanating from government that is exempted from the scrutiny of the Authority because the Act binds the Crown. The Act functions to

take necessary steps to manage the country's physical environment so as to ensure the proper management, use and conservation of its natural resources; to manage national parks, marine parks, protected areas and public recreational facilities and to advise the Minister on general policy.

The NRCA has the power to issue Enforcement Notices and Stop Orders to halt any activity anywhere that is injurious to natural resources and to make mandatory orders to restore damaged areas. Officers of the NRCA have the authority to enforce provisions of the other various Acts that it administered including the Beach Control Act and the Wildlife Protection Act.

The relevant Minister can also create national parks, protected areas for the preservation of any object of special interest – such as aesthetic, scientific, historical – and marine parks. In practice management of protected areas has been effected by various non governmental organizations (NGOs) through the exercise of the NRCA's power of delegation in respect of any of its functions (except to make Regulations). This has had mixed results and is the subject of current scrutiny for a possible overhaul. Regulations to the Act in respect of marine and national parks exist.

11.23 The Natural Resources (Permits & Licenses) Regulations 1996 also facilitate the operation of a comprehensive permit and licensing system that regulates new building developments within a broad range of categories. The entire island is subject to the operation of the Regulations.

11.24 Wildlife Protection Act 1945

This Act regulates hunting. It does so by creating game sanctuaries or reserves where hunting is limited. It also declares protected animals that cannot be hunted at all or only in certain numbers and at specific times. Regulations under the Act list endangered species and create open and closed seasons for hunting them. Possession of all or part of any protected animal or bird is an offense.

It also makes it an offence to apply any poisonous or polluting matter to watercourses containing fish, or to buy, sell or possess fish taken illegally. Enforcing officers include Fishery Inspectors and members of the Island Special Constabulary Force.

11.25 Jamaica National Heritage Trust Act 1985

This Act establishes the Jamaica National Heritage Trust whose main function is to promote the preservation of national monuments and anything designated as protected national heritage including national monuments. It must identify and keep a record of precious objects to be preserved and to identify and record any species of botanical or animal life to be protected. It also has the power to purchase, hold, deal with and dispose of land. Schemes can also be created to preserve amenities of monuments or national heritage and must define geographical areas within which the scheme applies. Activities within these

areas must be controlled and include prohibiting or restricting the felling of trees, quarrying and excavations within the controlled area(s).

12 NATIONAL REPORT: ST. KITTS AND NEVIS

12.1 ***LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH***

12.2 National Conservation and Environmental Protection Act No. 5 of 1987(Substituted by Act 21/2001)

The following provisions of this Act are of relevance -

Fouling or polluting the Coastal areas

(1) No person shall pollute any part of the coastal areas by depositing sewage, solid waste, garage oil, or other waste in any place in the coastal areas.

(2) In this section, “pollute” includes to cause such contamination, or other alteration of the physical, chemical or biological properties of any part of the coastal areas as will or is likely to create a nuisance or render the area harmful, detrimental or injurious to public health, safety or welfare, or to domestic, recreational, or other beneficial uses or to livestock, wild animals, plants or marine life.

(3) In any proceedings for an offence alleged to have been committed under this section a certificate from the Director of the Department in writing, stating that an incident of pollution took place within the coastal areas shall be *prima facie* evidence of that statement.

12.3 Public Health Act No. 22 of 1969

According to the long title this is an Act to consolidate and amend the law relating to Public Health in the State and to provide for matters incidental thereto or connected therewith. Section 3 of the Act empowers the Minister to make provisions for all matters relating to the promotion or preservation of the health of the people of the state. According to section 10 the Minister may make Regulations to give effect to the Act, including Regulations for prevention of water pollution and waste disposal.

12.4 Litter (Abatement) Act No. 8 of 1989

This Act makes provision for the abatement of nuisances caused by the littering of premises and public places and for matters connected therewith or incidental thereto. Section 8 of the Act requires every proprietor or manager or any person in charge of any trade or business shall make his own arrangements for disposal of litter arising out of such trade or business in a manner prescribed by way of regulation and under no circumstances shall make use of receptacles provided under subsection (1) of section 4 for the deposit of such litter.

12.5 Fisheries Regulations No. 11 of 1995

- (1) No person, company, or their employees or agents shall or cause to be put any poison, noxious substance or other pollutants into the fishery waters of St. Kitts and Nevis.
- (2) Any costs incurred for remedial action in respect of any pollution may, in addition to any fine imposed be borne by the person or company found guilty of an offence under this regulation.

12.6 ***LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT***

12.7 Maritime Areas Act No. 3 of 1984

This Act came into force on the 1st of September 1990. According to the long title this is an Act to make provision with respect to the territorial sea and the continental shelf of Saint Christopher and Nevis; to establish a contiguous zone and an exclusive economic zone adjacent to and beyond the territorial sea; and for related purposes. Regulations may be made with respect to the territorial sea for all or any of the following purposes, namely, prescribing measures for the protection and preservation of the marine environment of the territorial sea.

12.8 ***LEGISLATION RELATING TO LANDUSE***

12.9 Development Control and Landuse Act No. 14 of 2000

The Act provides for, the orderly and progressive development of land in both urban and rural areas and for the protection of the environment and improvement of the amenities thereof. It also provides for the grant of permission to develop land and for other powers of control over the use of land; to confer additional powers in respect of the acquisition and development of land for landuse purposes, and for other matters connected therewith. This Act applies to St. Kitts and not Nevis. Section 26 provides in relation to environmental impact assessments that unless the Board otherwise determines, environmental impact assessment shall be required in respect of any application for development permission to which specified activities apply. The Board determines whether environmental impact assessment of the proposal is required having regard to-

- (a) the nature of the development activity proposed;
- (b) the geographical extent, scale and location of the proposed development;
- (c) the extent and significance of the changes to the environment likely to be caused by the proposed development;
- (d) the extent of general knowledge about the nature of the proposed development and its likely impact on the environment;

- (e) any development plan for the area;
- (f) any other matter as may be prescribed.

(3) Where it determines that environmental impact assessment is required, the Authority shall, within thirty days of the receipt of an application for development permission, issue a written notice notifying the applicant or the person responsible of the determination that environmental impact assessment is required of the development proposal and setting out the terms of reference for the preparation of an environmental impact statement on the development proposal and the period within which the environmental impact statement shall be submitted to the Board.

12.10 Frigate Bay Development Corporation Act No. 13 of 1972

This Act came into force on the 24th of April 1973. According to the long title this is an Act to provide for the vesting of lands situate at Frigate Bay in the island of Saint Christopher known as Frigate Bay Estate in the Frigate Bay Development Corporation, a body constituted for the purpose of undertaking and encouraging the development of Frigate Bay and for matters incidental thereto or connected therewith”.

This Act applies only to the Frigate bay Development Area in St. Kitts. According to section 9 of the Act the Corporation is effectively the development control authority within the Development Area.

12.11 South-East Peninsula Land Development and Conservation Act No. 12 of 1986

According to the long title, this is an Act to provide for the development, conservation and management of the South-East Peninsula, to establish a Land Development and Conservation Board with specific powers and functions, and for matters connected thereto. This Act only applies to the South-East Peninsula in St. Kitts. Section 4 of the Act provides for the development and implementation of an environmental protection plan. Among the powers and functions of the Board is the control of pollution and maintenance of the environmental quality of the South-East Peninsula, including coastal conservation and the development and implementation of the South-East Peninsula Development and Land Use Management Plan and an environmental protection plan.

12.12 ***LEGISLATION RELATING TO WATERSHEDS***

12.13 Watercourses and Waterworks Ordinance Cap. 185

According to Section 10 (1) (i), The Water Board may make regulations to deal with the sanitary control of watersheds. Under section 18 where in the opinion of the Minister the drainage of water from any area flows or is conveyed to a watercourse or water-works the Minister may, by Order, declare that area or any part of that area to be a watershed.

12.14 Fisheries Act No. 4 of 1984

This Act came into force on the 1st day of July 1992. According to the long title, this is an Act to provide for the licensing of local and foreign fishing vessels, to confer upon the Minister the power to enter into arrangements or agreements dealing with access or otherwise in regard to fishery matters; to provide an institutional framework for the management, landuse, development and conservation of fishery resources in Saint Christopher and Nevis; and for connected matters.

Although regulation 38, of the Fisheries Regulations No. 11 of 1995, is specifically for the prevention of marine pollution, it is not clear how effective this regulation is in preventing, reducing or controlling marine pollution from land-based sources.

By virtue of section 23 the Minister may, by Order published in the *Gazette*, declare any area of the fishery waters and, as appropriate, any adjacent or surrounding land, to be a marine reserve where he considers that special measures are necessary:

- (a) to afford special protection to the flora and fauna of such areas and to protect and preserve the natural breeding grounds and habitats of aquatic life, with particular regard to flora and fauna in danger of extinction;
- (b) to allow for the natural regeneration of aquatic life in areas where such life has been depleted;
- (c) to promote scientific study and research in respect of such areas; or
- (d) to preserve and enhance the natural beauty of such areas.

Any person who, in any marine reserve, without permission -

- (a) fishes or attempts to fish;
 - (b) takes or destroys any flora and fauna other than fish;
 - (c) dredges, extracts sand or gravel, discharges or deposits waste or any other polluting matter, or in any way disturbs, alters or destroys the natural environment; or
 - (d) constructs or erects any buildings or other structures on or over any land or waters within such a reserve;
- is guilty of an offence and shall be liable on summary conviction to a fine not exceeding one thousand dollars.

12.15 ***LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION***

12.16 National Conservation and Environmental Protection Act No. 5 of 1987

According to the long title, this is an Act to provide for the better management and development of the natural and historic resources of Saint Christopher and Nevis for purposes of conservation; the establishment of national parks, historic and archeological sites and other protected areas of natural or cultural importance including the Brimstone Hill Fortress National Park; the establishment of a Conservation Commission; and for other matters connected thereto.

13 NATIONAL REPORT: ST. LUCIA

13.1 ***LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH***

13.2 Public Health Act No. 8 of 1975

This Act confers on the Ministry of Health wide powers for the making and enforcing of regulations on sewage disposal and the prevention of unsanitary conditions. The power includes a power for the inspection of beaches. Regulations promulgated under the Act include:

- Public Health (Sewage and Disposal of Sewage and Liquid Industrial Waste Works) Regulations 1978
- Public Health (Water Quality) Regulations, 1978.

13.3 St. Lucia Solid Waste Management Authority Act No. 20 of 1996

An Act to establish an Authority to be known as the Saint Lucia Solid Waste Management Authority to provide coordinated and integrated systems for the collection, treatment and recycling and disposal of solid waste, including hazardous waste; undertake the management of sanitary landfills, and to which shall be transferred and vested such assets, liabilities and functions of the Castries Corporation, as these relate to solid waste collection and disposal, and for other related matters.

13.4 Oil in Navigable Waters Act No. 8 of 1929

An Act to make provision against the discharge or escape of oil into the territorial waters of Saint Lucia.

13.5 Pesticides Act 1975

This Act establishes a Pesticides Control Board to prepare and enforce regulations to control the use of pesticides including excessive applications and accidental spills which can result if pesticide absorption by marine organisms in coastal habitats.

13.6 Litter Act No. 24 of 1983

The Litter Act contains comprehensive provisions for the control of littering of premises and public places. Under the Act “public place” includes a road, highway or beach.

13.7 ***LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT***

13.8 Beach Protection Act No. 2 of 1967

This Act was enacted to provide for the protection and control of beaches and the seashore and for connected purposes. Section 4 of the Act prohibits the removal of sand from any beach, seashore or floor of the sea except with the written permission of

the Director of Public Works or an authorized officer. The definition of seashore given by the ordinance is very wide (including the bed and shore of the sea, every channel, creek, bay or estuary and every river as far as the tide flows).

13.9 Fisheries Act No. 10 of 1984

This Act contains provisions for the creation of marine reserves, fishing priority areas, agricultural sites and regulations for fisheries management. Under the Act the Minister may declare a marine area and its adjacent land to be a marine reserve in order to protect flora and fauna, promote scientific research or preserve natural beauty. The Minister is authorized to make specific regulations governing management and protection of marine reserves.

13.10 Marine Areas Act No. 6 of 1984

This Act makes provision with respect to the territorial sea and the continental shelf of Saint Lucia; to establish a contiguous zone and an exclusive economic zone adjacent to and beyond the territorial sea; and for related purposes. It gives the Minister of Foreign Affairs jurisdiction with regard to marine scientific research and the protection and preservation of the marine environment of the territorial sea.

13.11 ***LEGISLATION RELATING TO LANDUSE***

13.12 Physical Planning and Development Act No. 29 of 2001

An Act to provide for the development of land, the assessment of the environmental impacts of development, the grant of permission to develop land and for other powers to regulate the use of land. A variety of other provisions are contained in the Act: making general development orders and permitting building operations.

13.13 Land Conservation and Improvement Act No. 10 of 1992

An Act to provide for the conservation of land in Saint Lucia, for the establishment of a Board to be known as the Land Conservation Board, for conferring on that Board functions as to land, and for connected purposes.

13.14 Crown Lands Ordinance No. 7 of 1945

This Ordinance contains provisions for the appointment of a Commissioner of Lands who is in essence protector of Crown lands. The Ordinance consolidates the law relating to the survey and disposal of crown lands and of vacant lands and authorizes the Government to make rules regarding the sale, occupation and allotment of Government land.

13.15 Minerals (Vesting) Act No. 7 of 1966

An Act to vest in the Crown all minerals in the island and to make provision for connected matters.

13.16 Agricultural Small Tenancies Act

This Act requires a tenant of agricultural land to follow practices of good husbandry, defined generally to mean the application of resources of soil conservation and the maintenance of soil fertility.

13.17 Tourist Industry Development Act

This Act establishes a Tourist Board with powers to promote and develop tourism including coastal amenities that may attract tourism. The Act also empowers the Board to foster an understanding within the island of the importance and economic benefit of the tourist industry to the country. It is to be observed that the draft National Tourism Policy also contains a wide range of policy goals including establishing the protection of the physical and social environment to be of paramount importance in the planning and development of tourism. Together the Act and the draft Policy seek to ensure that in the development of tourism there will be an adequate protection of the physical and scenic resources which place St. Lucia at an advantage as a tourist destination.

13.18 Saint Lucia National Trust Act No. 16 of 1975

This Act establishes a statutory trust to promote, conserve and manage land and marine areas of special, natural or historic interest and to protect the animal and plant life contained therein. The National Trust is the principal institution responsible for national parks in St. Lucia. It has a broad mandate which includes the protection of marine as well as land-based areas.

13.19 ***LEGISLATION RELATING TO WATERSHEDS***

13.20 Forest, Soil and Water Conservation Act No. 6 of 1945

This is the principal legislation for forest production and conservation. By section 27, any Crown land may be declared a prohibited area whenever this appears necessary for one of the purposes set out in section 21 (e.g. the prevention against soil erosion).

13.21 Water and Sewerage Authority Act No. 13 of 1999

The Act embodies a national policy for water and sewage disposal. It also requires the preparation of management plans and for consulting appropriate government agencies and local authorities. Under the Act the Authority has wide powers for the protection of watersheds and conservation.

13.22 ***LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION***

13.23 Conservation Authority Act No. 16 of 1999

An Act to provide for the establishment of a National Conservation Authority in Saint Lucia and other related matters.

13.24 Wildlife Protection Act No. 9 of 1980

This Act is designed to make provision for the protection, conservation and management of wildlife in Saint Lucia. Part 1 of the Act establishes the administrative machinery for the Act and includes the appointment of a Chief Wildlife Officer. Two approaches are taken in relation to wildlife management and control. First the zoning approach provides that the Minister may by order declare or purchase any land as a wildlife reserve. Second, under the Schedules species are listed according to their status. The Minister may by statutory order vary or delete species from the schedules. The Act could be strengthened by incorporating CITES requirements and specific marine species on the list.

14 NATIONAL REPORT: ST. VINCENT AND THE GRENADINES

14.1 *LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH*

14.2 Environmental Health Services Act No.14 of 1991

This Act makes provisions for the conservation and maintenance of the environment in the interest of health generally and in particular in relation to places frequented by the public. The Act makes provisions for the control of emissions and effluent discharge into water bodies.

The Environmental Health Division has the authority to permit or influence a number of operations pertinent to protected areas management since it has powers to deal with solid waste management, effluent disposal and pest control.

14.3 Oil Pollution (Liability and Compensation) Act 1977

This Act makes provision with respect to civil liability for Oil pollution damage by Merchant ships and provides for the payment of contributions by importers of oil to the International Oil Pollution Compensation Fund for the Liability of the Fund to compensate persons who suffer pollution damage.

This Act provides that where as a result of any occurrence taking place while a ship is carrying cargo of persistent oil bulk, any persistent oil carried by the ship is discharged or escapes from the ship, the owner of the ship is liable in the following manner: for any contamination resulting from the discharge or escape, for the cost of any measures reasonably taken after the discharge of the escape for the preventing or reducing any such damage or for any damage done to the State by any measures so taken. By virtue of this Act, Saint Vincent and the Grenadines contributes to an International Oil Pollution Compensation Fund regarding pollution damage.

14.4 Oil in Navigable Waters Act

Under the provisions of this Act where oil is discharged, or allowed to escape into waters to which this Act applies, from any vessel, or from any place on land, or from any apparatus used for the purpose of transferring of from or to any vessel or to or from any place, the owner of the vessel, the occupier of land or the person having charged of the apparatus, as the case may be, commits an offence and on conviction is liable to a fine of five thousand dollars. It is also an offence to transfer any oil during the hours between sunset and sunrise, to or from any vessel lying in any harbor unless, notice of intention to do so has been given in accordance with the provisions of the Act.

Also the Governor General has the power to appoint a public officer or other competent or independent person to inspect any vessel being in any waters to which this Act applies and any person so appointed or the port officer of the harbor in which the vessel is, may at all reasonable times, enter upon the vessel and examine the measures adopted to prevent the escape of oil.

14.5 ***LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT***

14.6 Fisheries Act No.8 of 1996

This Act, a model OECS/FAO legislation, establishes a legal framework for the management of fisheries in Saint Vincent and the Grenadines. It deals with fisheries access agreements, fish processing establishments, fisheries research and the registration of local fishing vessels. It also provides for the maintenance of marine reserves. The Minister is given the power under the Act to identify and declare as marine reserves those fishery waters and adjacent land requiring special protective status. The Act also gives the Minister the power to make regulations with respect to the taking of coral, shells and aquarium fish, for the protection of turtles, lobsters, conchs and for controlling the importation and exportation of fish.

This Act in its attempt to prevent marine pollution makes it an offence under the Act to use any explosive, poison or other noxious substance for the purpose of killing, stunning, disabling or catching fish and gives the Minister the power to make regulations for prohibiting harmful fishing methods. The definition of “fish” under the Act implies that any marine protected area, not designated for the purpose of fishery enhancement can be regulated by the Fisheries Division unless this is specifically denied by the legislation, ministerial order or some other policy objective. The Act also makes provision for the maintenance of marine reserves, but to date, there is no requirement in the Act that management plans be prepared in relation to these reserves.

14.7 Beach Protection Act

This Act provides the authority for the protection of beach resources, and in particular control of beach sand mining. In the absence however of regulations to support the principal Act, this has proven to be of little or no effect. This Act prohibits the taking of any material on a beach or seabed without the permission of the Minister who has the power to permit the removal of materials for a public purpose, subject to such terms and limitations as he or she may deem fit. Persons having property bordering the sea are authorized to take a reasonable quantity of sand or gravel; reasonable being defined to mean one truck load in any calendar year. The Minister also has the power under the Act to charge fees for the removal of materials from any beach. This Act has considerable potential for the protection of beaches especially those beaches in areas that are particularly sensitive and environmentally unstable. The Regulations however needs to be implemented to provide guidelines for the removal of materials from beaches.

14.8 Maritime Areas Act No. 15 of 1983

This Act states as its purpose the declaration of the Maritime areas and for other related matters. “Waters” is defined *inter alia* to mean the internal waters, archipelago waters and territorial sea. By virtue of the provisions of this Act, the Minister may make Regulations for a range of purposes associated with the innocent passage of foreign ship through the waters of Saint Vincent and the Grenadines. The objectives pertinent to protected areas include conservation of living marine resources, pollution prevention and marine scientific research. The Minister also has the power to make regulations pertaining to activities in the exclusive economic zone. Purposes relevant to protected areas include exploitation or conservation of living and non-living resources, establishment of artificial structures, marine scientific research and protection and preservation of the marine environment. This Act therefore supports the establishment of protected areas, including Trans boundary protected areas, resource extraction, establishment of artificial reefs, scientific research, and pollution and remediation.

14.9 ***LEGISLATION RELATING TO LANDUSE***

14.10 Town and Country Planning Act. No. 45 of 1992

In an effort to provide for adequate land resource use and planning, this Act makes provisions for the orderly and progressive development of land and proper planning of town and country areas and also for the control of development. The Act establishes a Physical Planning and Development Board with powers to prepare national, regional and local plans for submission to the Minister and approval by Cabinet. With respect to the preparation of plans, the Board must consider the foreseeable need and availability of land for natural and agricultural and forestry reserves, national parks and public and open spaces. The Board in exercising its powers must take cognizance of the provisions of any coastal zone management plan. The Minister has the power under the Act to zone any area reserved for a public purpose. Pursuant to the provisions of the Act, where the Minister is satisfied that it is in the public interest so to do, he or she may order the Board to take such steps that are necessary to remove, mitigate or prevent any condition that poses or is likely to pose a threat to the environment.

The Board also has the power to make tree preservation orders where it is necessary in order to provide any public amenity, for the purpose of soil conservation, tree preservation, and water conservation or for any other public purpose. The tree preservation order may prohibit the destruction of any tree, forest or woodland.

14.11 Crown Lands (Sale) Regulations of 1983 made pursuant to the provisions of the Crown Land Act of 1974

These Regulations specify the conditions and procedures whereby Crown Lands may be sold or granted by license. The Crown may impose conditions to accommodate a particular natural resource where applicable.

What is evident on examination of the various pieces of legislation is that different Acts relate to the same Forest or Marine Reserve. For example, the islands of the Tobago Cays are part of the Marine conservation area protected under the provisions of the Fisheries Act, but they are also protected as Forest Reserves under the Forest Resource Conservation Act and are Wildlife Preserves under the Wildlife Protection Act. In relation to the management of watersheds, the Central Water and Sewage Authority by virtue of the provisions of the Central Water and Sewage Authority Act, has the control and management of all fresh water; however the responsibility of forest conservation, which plays an integral part in watershed management is within the mandate of the Forestry Division by virtue of the provisions of the Forest Resource Conservation Act. In addition, by virtue of the provisions of the Town and Country Planning Act, the Planning Unit is the authority responsible for the development and subdivision of lands. This is a recipe for management conflict if it is not adequately addressed. For this reason, there is need for an integrated cooperated approach with respect to which agency takes charge of a particular problem, which Act is to be applied, the financial costs to be borne, and the settling of disputes.

14.12 ***LEGISLATION RELATING TO WATERSHEDS***

14.13 Central Water and Sewage Authority Act No. 6 of 1978 (CWSA)

The Central Water and Sewage Authority is one of the key stakeholders in the management of watersheds. This Act puts all fresh water under the control and authority of the Central Water and Sewage Authority, establishes a legal framework for the conservation, control, apportionment and use of water resources in St. Vincent and the Grenadines including the provision of suitable sewage services. The Authority is governed by an inter-ministerial Board established pursuant to the provisions of the Act and the Board is clothed with wide powers to provide for the conservation, control, apportionment and use of water resources.

The Act authorizes the Minister to declare an area to be a protected area for the protection of water resources related to water supply needs. By virtue of this power the Minister has the authority to regulate agricultural farming near to water catchments areas in addition to the power given to the Authority to ensure that activities near water supplies are undertaken in a manner that will not harm the said supplies.

The Act also provides for the protection and management of water catchments areas, however the CWSA does not currently manage any protected catchments. The Act also authorizes the Authority to make regulations in areas relating to water pollution control, soil conservation and water quality regulation. However such regulations have not been enacted.

14.14 Forest Resource Conservation Act of 1992

This Act provides for the conservation, management and proper use of the forests and watersheds, the declaration of forests reserves and conservation areas, the prevention and control of forest fires and for the establishment of the Forestry Department to administer the provisions of the Act. The Plan addresses the threats to sustainability of the forest resources and attempts to reverse the trend of resource loss occurring in the sensitive upper basins on Crown Lands. The Plan also deals with the establishment of other forests reserves with accompanying management plans. Watershed Management Plans are also to be developed for thirteen watersheds in Saint Vincent and those in the Grenadines.

The Act also gives the Minister the power to declare any land, whether public or private to be a conservation area. This can be done for the following reasons: that the area requires the implementation of conservation practice and management controls, that the water resources of the area are polluted or that the area is in a dangerous or unstable state above roadsides or along rivers and stream banks. This Act, unlike the Marine Parks Act makes provision for a sustained financial mechanism through the establishment of two trust funds; however the need to have two separate funds for the same purpose (i.e. Forestry and conservation management) needs to be rationalized since they operate simultaneously. There are also no regulations to provide administrative support to the Act.

14.15 Forests Act

This Act allows for the appointment of a Chief Forest Officer who has the management of Crown Lands pursuant to the provisions of the Act. Pursuant to the provisions of this Act, the Governor-General may provisionally declare any Crown Land to be a forest reserve, and thereafter such land shall not be granted, devised or sold within such forest reserve. Every such forest reserve shall in due course be surveyed and a map prepared in relation thereto. The Chief Forest Officer shall also cause boundaries of the forest reserve to be marked out, defined or maintained.

14.16 ***LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION***

14.17 National Parks Act of 2002

This Act provides for the establishment of national parks and the establishment of an authority for national parks, to make further provision for the preservation, protection, management and development of the natural, physical and ecological resources, and the historical and cultural heritage of Saint Vincent and the Grenadines. The Act establishes the National Parks, Rivers and Beaches Authority which has the responsibility, inter alia, to manage and maintain national parks inclusive of all rivers, streams, springs, swamps, waterfalls, water pools and beaches.

There is an obvious conflict between this Act and the Marine Parks Act. This Act although it deals with the establishment of national parks does not repeal the Marine Parks Act although the provisions in both Acts are basically the same. Under the Marine Parks Act, the designated Minister is the Minister responsible for Parks which is the Minister of Agriculture under whose portfolio marine parks fall, however; pursuant to the provisions of this Act, the designated Minister is the Minister of Tourism and in recent times the Office of the Prime Minister has taken control due to the institutional problems relating thereto. This duplication needs to be urgently addressed as it has created a certain degree of uncertainty as to who has the legal responsibility over parks. Also the provisions of the Act which give the Authority control over all rivers and streams have created an overlap with the Central Water and Sewage Authority and the Saint Vincent Electricity Services Act.

14.18 Marine Parks Act No. 9 of 1997

This Act allows for the declaration of marine parks and defines a marine park to include adjacent land that forms part of a single or “complementally” ecological unit, which implies that marine parks encompass ecosystems. The Tobago Cays were declared a marine Park under this Act. The Act establishes a Board which is responsible for the effective management of the Marine Park and for the issuing of permits, the preservation and enhancement of marine parks. The Board also has the responsibility for zoning within the parks. Pursuant to section 5 of the Act, the Minister is authorized to declare marine parks the purposes of which range from recreational, scientific studies, research, preservation and the enhancement of marine resources.

It is an offence to fish in the sea foaming part of a marine park, remove any object from a marine park, damage or impair the growth of any flora or fauna, damage the substrata or cause pollution of the air or sea, or carry out any commercial activity except in an area designated for that purpose.

14.19 Wildlife Protection Act No. 16 of 1987

This Act makes provision for wildlife management and control. Pursuant to the provisions of this Act, all wildlife found in Saint Vincent and the Grenadines, including captive and wild species, are the property of the Crown and may be hunted or possessed only at such time and in such manner as provided for under the Act. There are also areas declared as wildlife reserves under the Act. The Act also provides for the appointment of wildlife protection officers.

This Act provides some protection to waterways by making it an offence to use deleterious substances in the catching of aquatic life in streams and rivers.

14.20 St. Vincent and the Grenadines National Trust Act, 1969

This Act established the Saint Vincent and the Grenadines National Trust as a corporate entity and mandated it to make provision for the management of a range of natural and cultural heritage resources. The potential role of the Trust in resource conservation is substantial under the Act.

The Act is empowered to establish and manage a range of protected areas, no such area has been so far declared under the Act. To date, no protected area has been declared by virtue of the provisions of the Trust.

15 NATIONAL REPORT: TRINIDAD AND TOBAGO

15.1 *LEGISLATION RELATING TO POLLUTION CONTROL AND PUBLIC HEALTH*

15.2 Environmental Management Act, 2000

According to the Act, the EMA may require any persons releasing pollutants or handling any hazardous substances to conduct sampling, monitoring and record keeping. Under section 52 the EMA may conduct investigations to ascertain the sources and extent of water pollution and characterize such pollutants; establish a register of water pollutants establish a program to manage such pollution. And at section 57 the EMA may require and grant permits for the release of water pollutants subject to specified terms and conditions. At section 61 the EMA is empowered to investigate and designate circumstances with respect to accidents and spills of pollutants or releases of pollutants or incidents in respect of hazardous substances presenting a risk to human health or the environment and which must be reported to the EMA

15.3 Certificate of Environmental Clearance (Designated Activities) Order, 2001

Lists designated activities which, if conducted in coastal areas, can lead to pollution of marine environments.

15.4 Water Pollution Rules, 2001 as amended by the Water Pollution (Amendment) Rules, 2006.

These Rules identify parameters and substances at specific quantities, conditions or concentrations which would be deemed to be water pollutants for:

- island surface water;
- coastal nearshore;
- marine offshore; and
- Environmentally sensitive areas and/or groundwater.

The Rules also restrict the release of water pollutants into water approved by a competent governmental entity for human consumption or into groundwater. The Environmental Management Authority has only commenced implementation of these Rules in May 2007 and the extent of its application remains to be seen. The Rules set out registration and permitting requirements for the discharge of specific pollutants of concern.

15.5 Public Health Ordinance Ch. 12. No. 4 (1950 Laws)

This Act contains antiquated provisions governing the maintenance of sanitary conditions and the disposal of septage.

15.6 ***LEGISLATION RELATING TO COASTAL AREAS MANAGEMENT***

15.7 Chaguaramas Development Authority Act, Chap. 35:02

This Act gives the Chaguaramas Development Authority a wide jurisdiction over the Chaguaramas peninsula. Section 24 (1) states that the Authority shall ensure that development is carried out in conformity with the Town and Country Planning Act. Otherwise the land is vested in the Chaguaramas Development Authority (Section 16). Section 28 states that the Minister may make restrictions on use of any land.

15.8 Port Authority Act Chap. 51:01

The [Port Authority] with the approval of the President ... may make regulations with respect to the proper control and management of foreshores, harbours and the entrances thereof, the prevention and removal of obstructions therein, and the regulation of any work, service or facility performed or provided there. Sec. 75(3) allows the Port Authority to make regulations with respect to the control or management of several classes of coastal areas which may be sources of marine pollution

15.9 The Marine Areas (Preservation and Enhancement) Act Chap. 37:02

This Act allows for declaration of marine areas (including adjoining land and swamp areas) as restricted areas. Allows for the designation of any portion of the marine areas of Trinidad and Tobago as a restricted area where special steps are necessary to inter alia,

- Preserve and enhance the natural beauty of such areas
- Protect the flora and fauna of such areas

Marine areas defined as including submarine areas within the territorial sea and include any adjoining land or swamp areas which form within certain submarine areas a single ecological entity. The Act allows for the making regulations to provide for:

- The protection of the flora and fauna of the restricted area; and
- The care, control and management of the restricted area.

It regulates entry into restricted areas.

15.10 State Lands Act Chap. 57:01

This Act vests the management of state lands in the Commissioner of State lands who is responsible for the prevention of squatting and encroachment on state lands and of spoil and injury to the woods and forests of state lands. The Act is supported by the Land Regulations, 1918 and the Crown Lands (State Lands) Forest Produce Rules, 1937 as amended.

15.11 Highways Act Chap. 48:01

At section 31(1), a highway authority may, in a highway maintainable by it at the public expense, plant trees and shrubs and lay out grass verges, and may erect and maintain guards or fences and otherwise do anything expedient for the maintenance or protection of trees, shrubs and grass verges planted or laid out by it under this subsection and may remove any grass verge and any guard, fence or other thing provided under this subsection.

15.12 ***LEGISLATION RELATING TO LANDUSE***

15.13 Environmental Management Act 2000

For the purpose of determining the environmental impact which might arise out of any new or significantly modified construction, process, works or other activity, the Minister may by order subject to the negative resolution of parliament designate a list of activities (designated activities) requiring a certificate of environmental clearance (CEC). The provisions of the Act prohibit any person from proceeding with a designated activity without a CEC from the EMA. It vests the EMA, when considering an application for a CEC, with the power to require an environmental impact assessment to be undertaken where necessary. The requirement of a CEC application, which is deemed as requiring an environmental impact assessment, is to be submitted for public comment.

Sec. 41 EMA may designate environmentally sensitive areas through Rules under section 26. Sec. 45: in designating an ESA the EMA is to co-ordinate with any governmental entities having responsibility for planning and management in such areas Standards and guidelines for designation of an ESA. This includes any portion of the environment:

- (a) required to be protected for the purpose of meeting the Government's ^q international Conventions referred to in Schedule I;
- (b) an area to which any of the Guidelines set out in Schedule II applies;
- (c) An area that is referred to in a written law set out in Schedule III.

15.14 Certificate of Environmental Clearance Rules, 2001 (LN 104 of 2001)

These Rules set out the application procedure for a CEC including when an environmental impact assessment will be required. Sets out details of the standards for preparation of an environmental impact assessment where one is required. Sets out details of establishment, maintenance and public access to the National Register of Certificates of Environmental Clearance.

15.15 Environmentally Sensitive Areas Rules, 2001 (LN 37 of 2001)

Sets out a framework for establishing environmentally sensitive areas. Rule 3 Rule 3 (b) in essence implements certain aspects of the following MEAs -

(i) The Convention for the Protection of Development of Marine Environment of the Wider Caribbean Region which entered into force in Trinidad and Tobago in October 11, 1986 (the CARTAGENA Convention).

(ii) The Protocol concerning Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Environment of the Water Caribbean Region which entered into force in Trinidad and Tobago on January 18, 1990 (the SPAW Protocol).

(iii) The Convention on Wetlands (the Ramsar Convention, Iran 1971) which entered into force in Trinidad and Tobago on April 21, 1993.

(iv) Any other international legal convention relating to the environment to which Trinidad and Tobago is a party.

15.16 Forest (Prohibited Areas) Order Chap. 66:01

Declares Prohibited Area in accordance with the Forests Act Chap. 66:01 (which Act inter alia regulates activities in Prohibited Areas). These Prohibited areas include portions of watershed areas.

The Order also controls the felling and removal of trees and forest produce on specified state lands as well as specified species of trees from private lands through a combination of general prohibition and a permitting scheme and restricts entry into prohibited areas including Forest Reserves.

15.17 The Environmentally Sensitive Areas (Nariva Swamp Managed Resource Protected Area) Notice, 2006 (LN 334 of 2006)

- Designates Nariva Swamp Managed Resource Protected Area as an ESA
- Sets out limitations of use and activities

15.18 Marine Areas Preservation and Enhancement Act Chap. 37:02

This Act makes provision for the designation of any portion of the marine areas of Trinidad and Tobago as a restricted area where special steps are necessary to inter alia, preserve and enhance the natural beauty of such areas, protect the flora and fauna of such areas.

Marine areas are defined to include submarine areas within the territorial sea and include any adjoining land or swamp areas which form within certain submarine areas a single ecological entity.

15.19 **LEGISLATION RELATING TO WATERSHEDS**

15.20 The Environmentally Sensitive Area (Matura National Park) Notice, 2004 (LN 323 of 2004)

- Designates Matura National Park as an ESA
- Sets out limitations of use and activities
- The EMA shall implement mitigation measures in the ESA, including—
 - (a) development of public awareness and education programmes;
 - (b) enforcement of existing law;
 - (c) fire prevention and control of squatting;
 - (d) visitor management;
 - (e) training of the Environmental Officers and other persons.

15.20 Forest (Prohibited Areas) Order Chap. 66:01

Declares Prohibited Area in accordance with the Forests Act Chap. 66:01 (which Act inter alia regulates activities in Prohibited Areas). These Prohibited areas include portions of watershed areas including:

- Northern Range Game Sanctuary;
- Trinity Hills Game Sanctuary
- Central Range Game Sanctuary
- Southern Watershed Game Sanctuary

15.21 Certificate of Environmental Clearance (Designated Activities) Order, 2001 (LN 103 of 2001)

In accordance with section 35 of the EM Act, 2000, this Order designates activities requiring a CEC. They include timber cultivation or extraction of logs, clearing, excavation, grading and land filling, establishment of surface impoundments, dams or reservoirs for storage of water, establishment of land drainage and irrigation schemes.

15.22 Water and Sewerage Act Chap. 54:40

Water and Sewerage Authority (WASA) given jurisdiction for administering public sewerage works and providing sewerage facilities in Trinidad and Tobago. The Act defines sewage as including “the waste of animal life other than stable manure, the draining of stable water and liquid waste discharged from sinks, basins, baths and all other waster which has been used for domestic purposes or in industrial processes, and all waste water”. The Act authorizes WASA to ensure that all sewage is discharged into sewers thereby preventing pollution of marine waters.

15.23 ***LEGISLATION RELATING TO ENVIRONMENT AND CONSERVATION***

15.24 The Environmental Management Act, 2000

The Environmental Management Act is an overarching piece of framework legislation providing for the development of environmental cross-cutting and specific subsidiary legislation, national policies and inter-agency synergies for the sustainable use of the environmental resources of Trinidad and Tobago. The Act incorporates mechanisms for stakeholder participation in the development of policies and subsidiary legislation as well as in the environmental impact assessment system and powers of the EMA include:

- make recommendations for the rationalization of all governmental entities performing environmental functions
- promote educational and public awareness programmes on the environment
- take all appropriate action for the prevention and control of pollution and conservation of the environment;

Section 25 allows EMA to take emergency response activities where it believes there will be a release of a pollutant or hazardous substance or any condition that will present a threat to human health or the environment including the remediation or restoration of degraded sites;, the containment of wastes, hazardous substances or environmentally dangerous conditions.

15.25 Agricultural Fires Act Chap. 63:02

This act establishes the requirement to obtain a fire permit to set a fire during the fire season other than for the purpose of cooking or for an indoor domestic fire. A Fire permit may contain limitations as to the duration and area to which it applies. The Forestry Division has the power to require owner or person in control of land to remove conditions which may cause danger from forest fire. There is a requirement to establish 30-foot wide firebreaks around teak plantations

16 INSTITUTIONAL AND POLICY FRAMEWORK

Descriptions of the duties and functions that are discharged by the relevant institutions in each of the IWCAM countries are set out below -

16.0 Antigua and Barbuda

The institutional framework for watershed and coastal areas management in Antigua and Barbuda is achieved primarily through the works of a few Government agencies which are subdivided into several departments. These departments operate under the mandate of several Acts and policies and there is some overlap in the responsibilities of the different divisions. For example, the Land Division is responsible for the management and control of government lands, including land use, land reclamation and sub-division, while the Development Control Authority is responsible for the development and use of land for urban, economic and infrastructural development. This Division is also responsible to enforce the environmental sanitation regulations, prevent the spread of diseases and for the handling of liquid waste. Table 3 provides a summary of these roles.

Table 3

Institutions Involved In Management of Watersheds and Coastal and Marine Areas in Antigua and Barbuda

Ministry	Institution	Governing Acts / Policies	Institutional Responsibilities
Ministry of Tourism and Environment	The Environment Division		Responsible for matters relating to the environment, including land usage and marine resources. Department presently undertaking a demonstration project of a sewage treatment plant to be cited in Mackinnons, located in the parish of St. John's.

Ministry	Institution	Governing Acts / Policies	Institutional Responsibilities
	<p>The Development Control Authority</p> <p><i>Comprised of a Chairman appointed by the Minister, the Director of Public Works, the Chief Health Inspector, the Lands Officer, the Town and Country Planner and two persons appointed by the Minister who are not in public service</i></p>	<p>The Physical Planning Act, 2003 Land Development and Control Regulations 1996</p>	<p>The development and use of land for urban, economic and infrastructural development</p>
Ministry of Agriculture, Lands and Fisheries	The Fisheries Division	<p>The Fisheries Act, 2006 The Fisheries Regulations Cap173 Marine Areas Act Cap. 260, The Marine Areas (Preservation and Enhancement) Act Cap. 259 The Marine Areas (Preservation and Enhancement) Regulations The Turtle Act, Cap. 446</p>	<p>The development of the fisheries sub-section; monitoring fish stocks and marine resources; regulates the policing of fishing practices; manage aspects of coastal zone management (includes mangrove wetlands within marine protected areas; has the power to restrict fishing in certain areas and to preserve habitats, flora and fauna and as shipwrecks in marine areas.</p>
Ministry of Agriculture, Lands and Fisheries	The Forestry Division	<p>Forestry Act Cap. 178 and its Regulations* The Bush Fires Act, Cap. 62</p>	<p>Management of forests and woodland areas; Issue permits for the importation/exportation of wildlife; responsible for the management of upper watersheds</p>
Ministry of Agriculture, Lands and Fisheries	The Plant Protection Unit	<p>Plant Protection Act, Cap. 329 The Plant Protection Regulations</p>	<p>Responsible for matters related to plant quarantine and plant pest control at entry ports</p>
	Soil and Water Conservation Unit		<p>Facilitate the development of irrigation systems for farmers and the cleaning, repairing and constructing of dams etc.</p>
	The Veterinary and		<p>Animal health, production and quarantine matters.</p>

Ministry	Institution	Governing Acts / Policies	Institutional Responsibilities
	Livestock Division		
	The Lands Division		Management and control of government lands including land use, land reclamation and subdivision.
	The Pesticides Control Board	The Pesticides Control Act, Cap. 325*	Management of the importation, use and disposal of all pesticides used in domestic, animal and plant protection. A new Pesticides and Toxic Chemicals Control Act is currently under review.
	Unclear which Division of this Ministry is responsible for the enforcement of these Acts	The Protection of Animals Act, Cap 349	Matters related to the prevention of cruelty to animals.
	The Port Authority	The Litter Act, Cap. 250 (Amended) The Fixed (Penalty Procedure) (Amendment) Regulations National Solid Waste Management Authority Act 1995, amended in 2005 The National Solid Waste Management Authority (Amendment) Act, 2005 Solid Waste Management (Haulage and Tipping Fees) Regulations, 1996 The Public Health Act, Cap. 353	The CBH is responsible for the enforcement of environmental sanitation regulations; the prevention of the spread of diseases; the operation of mosquito control programme; management of liquid waste The NSWMA is responsible for the management of solid waste and the provision of facilities for the on-shore disposal waste from cruise ships.
The Ministry of Health	The Central Board of Health (CBH)	The Beach Control Act Chapter (Cap) 45 The Beach Control (Prevention of Danger) Regulations The Beach Protection Act, Cap. 46 The Public Utilities Act, Cap. 359	The Public Utilities authority is responsible for electricity, telephones. The Director of Public Works is responsible for the enforcement of the acts related to beach protection and control.

Ministry	Institution	Governing Acts / Policies	Institutional Responsibilities
	The National Solid Waste Management Authority (NSWMA)	The Public Works and Road Act, Cap. 360 The Public Works and Road Regulations	The water division has no management responsibility for watersheds or water resources.
		The National Parks Act. Cap. 290 The National Parks (Amendment) Acts, 1995, 2000,2004 The National Parks (Nelson's Dockyard Parking) Regulations The National Parks (Nelson's Dockyard) Order	Is responsible for the establishment of National parks, preservation, protection, management and development of the natural, physical and ecological resources and the historical and cultural heritage of Antigua and Barbuda.
Ministry of Public Works	Antigua Public Utilities Authority The Water Division	The Dumping at Sea Act, Cap. 141 The Wild Birds Protection Act, Cap. 472 Beach Protection Act	The Dumping at Sea Act prohibits the dumping of any articles or substances into Antiguan waters and the loading of articles or substances on Antigua's lands for dumping at sea, this includes Antigua's waters and waters outside of Antigua's territorial waters. The Beach protection Act authorizes the Director to grant permits for the removal of specified amounts of sand. The permit does not establish a method for its removal.
	The National Parks Authority		
	It is unclear from the country reports which institution / Ministry is responsible for the enforcement of these Acts		

- Revisions / Amendments of the Act are currently under review

16.2 The Bahamas

There are several Government institutions and non-governmental organizations involved in IWCAM. These are described below.

a. Office of the Prime Minister

The office consists of several entities involved in IWCAM. They include -

- the Public Utilities Commission
- BEST Commission
- Grand Bahama Port Authority
- Bahamas National Trust.

It Minister ensures that the government's economic, environmental and sustainability policies are carried out.

b. Bahamas Environment, Science and Technology (BEST) Commission

The BEST Commission has no regulatory powers, but is responsible for developing the Government's environmental and natural resource management policies. As mandated, the BEST Commission is responsible for the administration of the EIA process and providing advice to Cabinet for consideration in their sustainable development decision-making process. BEST is also the lead agency in ensuring that the Government implements its requirements under the various international Conventions on environmental matters such as biodiversity, climate change, wetlands, and land degradation. In this role, BEST works through its various subcommittees. BEST is also mandated to secure funding under the Conventions for projects that support their implementation and is the focal point for GEF in The Bahamas.

c. The Bahamas National Trust

The Bahamas National Trust was created by an Act of Parliament in 1959. The mandate of the Trust is to conserve and protect the natural and historic resources of The Bahamas. The Trust in some ways was the first environmental agency in The Bahamas and continues to work with BEST and others on environmental aspects and is represented on all of the subcommittees of BEST to address compliance with international environmental Conventions. The Trust is responsible for establishing and developing the national park system and protected areas, as well as protecting the biodiversity of the country's unique ecosystem. The Trust is considered a non-Governmental organization (NGO) even though it has been established by an Act; it is administered by a Board that has representation

from private citizenry and the Government, which make decisions for development of the Trust and its parks without requiring Government approval.

d. Ministry of Health and Social Development

This Ministry oversees the health care structure of The Bahamas, including public sanitation and environmental conservation in the interest of public health. The Ministry is responsible for regulating, monitoring, and controlling pollution. The Minister of Health administers the Department of Environmental Health Services which is responsible for solid waste collection and disposal.

e. Department of Environmental Health Services (DEHS)

The Ministry has the overall responsibility for regulating, monitoring, and controlling pollution. The Minister of Health administers the Department of Environmental Health Services which is responsible for solid waste collection and disposal.

The powers of the DEHS are established under the Environmental Health Act of 1987, and Environmental Health Regulations. The main role of the DEHS is to regulate, monitor, and control actual and likely contamination and pollution of the environment and establish minimum standards required for a clean, healthy, and pleasing environment. For proposed large projects, the DEHS evaluates the effectiveness of pollution control measures and initiatives to protect the health and safety of workers, and the natural environment. DEHS also issues the necessary effluent discharge and emissions permits. DEHS has created a new entity, the Environment Monitoring and Risk Assessment (ERMA) Division, under the Public Analyst Laboratory attached to the DEHS, which has the responsibility for environmental monitoring.

f. Ministry of Public Works and Transport

This Ministry oversees and maintains physical infrastructure and the environment. Its several entities include –

Department of Physical Planning

The Department authorizes activities such as dredging, filling, harvesting or removal of protected trees, and any work that will affect coastlines. Department of Physical Planning falls under the portfolio of the Ministry of Public Works and Transport is entrusted with the administration of the Building Control Act (BCA) and Regulations, sharing responsibility with the Ministry of Health and Social Development, and is also entrusted with the preparation of land use plans and physical planning activities. The Ministry through its relations with the Water and Sewerage Corporation issues water supply franchises to developers in areas where the supply of water is impractical for Government or its agencies to undertake. The Ministry of Works is also responsible for the Water and Sewerage Corporation.

Water and Sewerage Corporation (WSC)

The WSC, with its Water Resources Management Unit (WRMU) has responsibility for optimal development of the country's water resources and the control of water quality. It shares (with DEHS) the responsibility for monitoring water quality.

g. Ministry of Agriculture and Marine Resources

The Department of Agriculture

Oversees conservation of wild animals, birds, and plants, as well as forest health.

h. Department of Marine Resources

The Department has the mandate to enforce the Fisheries Act, including arrest and seizure powers, authority that is currently shared with the Coast Guard. Under the previous Caribbean Planning for Adaptation to Global Climate Change (CPACC) project, the Department of Marine Resources was responsible for coral reef monitoring, and is currently participating in some of the BEST Commission's subcommittees on international environmental Conventions such as wetlands and climate change. The Department of Marine Resources' mandate also includes marine conservation of habitats including coral reefs and blue holes.

i. Ministry of Foreign Affairs

This Ministry is responsible for treaty succession as well as relations with the Law of the Sea, the United Nations, Organization of American States and CARICOM.

16.3 Barbados

At present, there are a number of institutions whose mandates involve varying levels of responsibility for aspects of watershed and coastal areas management. These are -

a. Ministry of Economic Affairs

The first plank of the national policy framework which is related to watershed and coastal areas management is the National Strategic Plan (NSP) of Barbados 2005-2025. The preparation of the National Strategic Plan was coordinated by the Ministry of Finance and Economic Affairs and is the product of the collective effort of the public sector, private sector, labor and civil society. The Plan Implementation of the land management and related elements for IWCAM is the responsibility of several government agencies.

The Plan identifies a set of six national development goals, the fourth of the six goals, “Strengthening the Physical Infrastructure and Preserving the Environment, is relevant to IWCAM.” Six (6) objectives have been identified that directly or indirectly relate to land management. They include: (1.1) to promote and facilitate the environmentally sustainable use of our natural resources; (1.2) to maintain a safe and reliable water supply; and (1.6) to maintain an efficient land use policy.

The Plan has been adopted by the Parliament and is now national policy. While the NSP will be subjected to periodic review, the onus is on each agency to recognize its relevance in their respective portfolios and seek to execute the relevant aspects of the plan in an integrated manner.

b. Ministry of Finance and Economic Affairs

The Town and Country Development Planning Office

The Office (TCDPO) which is established under the has primary responsibility for land use planning in Barbados, including the amending and implementing of the *Physical Development Plan (PDP)* every five years. The PDP is the most comprehensive national policy for the management of land in Barbados. PDP policies include: requiring sediment control plans for certain developments; enforcing tree preservation in urban, rural and coastal areas; providing for the control of development within natural heritage conservation areas and the Barbados System of Parks and Open Spaces; and the protection of erosion prone lands. The PDP therefore contains the policy basis for IWCAM in Barbados. The Office is also responsible for the Area Development Plan and the National Park Development Plan.

c. Ministry of Energy and Environment

National Commission on Sustainable Development

The National Commission on Sustainable Development is established under the Ministry and is responsible for the implementation of The *Barbados Sustainable Development Policy* (SDP) which was adopted in Parliament in 2004. The National Sustainable Development Policy is complemented by the National *Sustainable Development Action Plan SDAP*, which constitutes the Part II of the Policy. The SDAP recommends a series of actions to be taken by each sector towards achieving the goal of sustainable development. Recommendations of relevance to IWCAM address such areas as data collection and management; land use management and research; monitoring the scarce fresh water resources to ensure equitable allocation and optimal utilization, conservation and protection; the preservation, conservation and sustainable use of agricultural resources with careful consideration given to ecological efficiency; and several others.

Environmental Management Department

The Draft Environmental Management Plan is to be administered by the Environmental Management Department. The Plan addresses the environmental problems and issues facing Barbados such as agricultural practices, soil conservation and soil erosion; coastal and marine resources; drainage control and flood prevention; groundwater protection and others. It provides direction for appropriate intervention on these issues including an appropriate institutional and legal framework. A Draft Environmental Management Act is intended to be the legal framework for the preparation, approval and implementation of the Plan.

d. Ministry of Public Works

The Barbados Water Authority (BWA)

BWA is established under this Ministry and is assigned the responsibility for the development and implementation of an Emergency Drought Management Strategy comprising short, medium and long term activities which include the use of drought indicators, a water shortage response plan including the financial and administrative requirements for the plan, and technical activities which include management, water resources/supply and distribution system activities. In light of the association between droughts with flooding and high levels of runoff and erosion, there are implications for watershed and coastal areas management that indicate the need for an integrated approach

16.4 Cuba

a. The Ministry of Science, Technology and Environment (CITMA)
administers the following legislation -

- Law No. 81 of July 11, 1997 (Law of the Environment) whose responsibilities includes in relation to the marine resources, the coastal zone and its buffer area, bays, estuaries and beaches, the insular shelf, the marine bottoms and the natural living and non living resources contained in the marine waters and their submerged areas.
- Decree-Law No. 200/99 CITMA enforces against breaches as regards the environment.
- By decree-Law No. 201/99 it administers the National System of Protected Areas, and.
- By Resolution No. 77/99 it is responsible for the conduct of Environmental Impact Assessments.

Table 4. - Main Resolutions dictated directly by CITMA or jointly with other agencies

<u>Biological diversity</u> <ul style="list-style-type: none">• Resolution No. 33, of April 2, 1996. On the specific measures in relation to the protection relative to the access, extraction and commercialization of Black Coral to the ends of guaranteeing their use with sustainability criteria.• Resolution 111/96, of October 14, 1996. On the access to biological resources.• Resolution 34/96, of April 2, 1996. On the access to sensitive areas and fragile ecosystems.• Resolution 87/96, September 2, 1996. Regulation for the export and import of species of the CITES Convention.
<u>Hazardous wastes</u>

- Resolution 87/99, of October 21, 1999. On the export, import, production, storage, transportation and final disposal of hazardous wastes.
- Resolution 53/2000, of April 27, 2000. Modifications to the list of hazardous wastes in the Resolution No. 87/99.

Toxic Chemical Products

- Resolution 41/2001, of April 11, 2001. Prohibition of import and production of certain chemical substances.

Environmental Impact Assessment

- Resolution No. 77/99, of July 28, 1999. It establishes the Regulation of the Process of Environmental Impact Assessment.

This Ministry is also responsible for the implementation of the Law of Mines (Law 76 of December 21, 1994). Mining is considered one of the more impacting activities for the environment. Its extractive character and the related activities influence not only the place where the extraction of the mineral is carried out, but also the whole surrounding environment.

b. Ministry of the Armed Forces (MINFAR)

The Ministry of the Armed Forces (MINFAR) administers the following instruments -

- Order No. 112/79 of the Head of the MGR “For the Repairs and Maintenance Grounds of Vessels”.
- Different Indications of the Head of the MGR, to foster the planting of mangroves in the naval units.

c. Ministry of Transportation (MITRANS)

The System of Maritime Security and Inspection of the Ministry of Transportation (MITRANS) regulates several activities related to maritime traffic the most significant of which in relation to IWCAM are -

- Resolution 31-96–Regulation of the System of State Inspection and Control of the Transportation where it establishes the work guidelines for the execution of State Inspections in the different branches of the transportation.
- Resolution 348-95–It establishes the competence to carry out the inspections to check that the vessels and crafts fulfill the international agreements concerning the protection of the marine environment. .
- Resolution 66-82 which prohibits the anchoring of the vessels in unauthorized areas of the territorial sea.
- Resolution 88-57. - Regulation of use of national ports for disabled vessels or in disabling process and for their dismantlement with the measures to prevent the pollution by oil residuals, oil mires and wastewaters contained in their tanks.
- Resolutions 2-98 and 211-97. - Regulating the dispositions of the Annex I (Hydrocarbons); Annex II (Chemical Substances) and Annex V (Waste), respectively, of the International Convention for the Prevention of Pollution by Vessels, in its amended form in the corresponding Protocol of 1978 (MARPOL 73/78) of which our country is a Member State.

d. Ministry of the Fisheries Industry.

The Ministry administers (Decree-Law 164 of May 28, 1996) which is complementary legislation to that established by the Law No. 81. This Decree-Law incorporated the concept of sustainable development for the fishing activity and a considerable number of environmental principles.

e. Port Administration

The Port Administration is vested with the authority to formulate the corresponding provisions that guarantee the fulfillment of the obligations of the Cuban State assumed by virtue of Multilateral International Agreements. It is required to elaborate a Management Plan for each port and to apply taxes for concept of environmental services.

16.5 Dominica

Various departments and divisions of government that play a role in watershed and coastal area management in Dominica many of which fall under the jurisdiction of the Ministry of Agriculture and the Environment. The Fisheries Division, the Forestry Division and the National Parks Division all fall under the:

a. Ministry of Agriculture and the Environment Fisheries Division

The Division monitors activity in the marine environment as well those activities which have the potential to impact the marine environment with a view to abating marine pollution. The Fisheries Division has also been collaborating with other agencies and organizations such as the Solid Waste Corporation, the Dominica State College and the Institute of Marine Ecology, in an attempt to address the issue of marine pollution from land based sources.

Forestry and National Parks Divisions

The Divisions monitor activities taking place within their jurisdictions for compliance with the legislation. The Forestry Division has been taking action to protect watersheds. The Division has sought, among other things, to regulate indiscriminate cutting of trees in watershed areas. They have also sought to educate the public on its role and signage has been placed in certain locations with a view to deterring certain activity.

b. Ministry of Health and the Environment.

Department of Environmental Health Services (DEHS)

The Department acts under the Environmental Health Services Act. It is required to investigate problems and institute preventive and remedial measures in respect of environmental pollution, the management and disposal of solid, liquid and gaseous wastes, and general sanitation. DEHS assesses the quality of water at watersheds. The Department is also concerned with the management of the disposal of used oil especially that which emanates from garages. It also monitors waste from quarries in an attempt to curtail or prevent sedimentation which can choke coral and other marine life.

Daily monitoring of solid waste disposal occurs to protect against disposals which will affect marine life.

c. The Solid Waste Management Corporation

The Corporation, established under the Solid Waste Management Act, is responsible for the preparation of plans and programmes to address the problems of solid waste management. It manages and directs the implementation of the OECS Waste Management Project and any other regional and international waste management project activities. The Corporation has prepared a National Waste Management Strategy. It is required compliance with the provisions of the Environmental Health Services Act and any other Act relating to public health and environment in carrying out its functions.

d. Physical Planning and Development Authority

The Authority was established by the Physical Planning Act. The Authority is required, *inter alia*, to receive and consider applications for permission to carry out development of land in accordance with the provisions of the Act. Where the Authority recognizes that development may pose a risk to the marine environment it requires the developer to put mitigation measures in place. The Authority collaborates with other departments or agencies, especially the Forestry and Fisheries Divisions, in the resolution of environmental issues.

The Authority is presently engaged in efforts to ensure that quarrying activity is properly regulated. To that end attempts are being made to put measures in place to ensure that the Mines and Minerals Act is properly implemented with a focus upon the reduction, prevention and control of pollution of the marine environment resulting from quarrying activity. These measures include the development of a code of practice for quarrying which should inform all applications for this activity.

16.6 Dominican Republic

a. State Secretariat for Environment and Natural Resources

The State Secretariat of Environment and Natural Resources is created as the governing agency for the management of the environment, ecosystems and natural resources. The Secretariat is divided into five sub-secretariats each with specific responsibilities for-

Environmental management;
Soils and waters;
Forest resources;
Protected areas and biodiversity; and
Coastal and marine resources.

Directorate of Conservation and Management

This sub-secretariat is in charge of the classification, conservation and management of the coastal and marine resources. It also develops management strategies for the coastal and marine resources in all coasts of the Dominican Republic. The Directorate shall also develop regulations in respect of activities in the coastal, marine and inner water ecosystems, and on the species of flora and fauna that inhabit them.

b. National Institute of Hydraulic Resources (INDHRI)

The Institute is responsible, inter alia, for the discharge of the following duties-

- Study, project and program all necessary hydraulic and power works for the development of watersheds in compliance with National Development Plans in coordination with the agencies in charge of the other types of development works;
- Administer, control and regulate the use of the national watersheds, reservoirs, springs and waters;
- Organize, direct and regulate hydrological works in watersheds, channels and river beds of national waters, both surface and underground, in cooperation with the relevant ministries.

- c. Dominican Port Authority
The Authority directs, manages, exploits, operates, preserves and improves the seaports of commercial character under its control and administration, as well as those that in the future become part of the Dominican Port Authority by Executive provision, with absolute exclusion of the ports of military character and of the sections of ports that have that character.
- d. State Secretariat of Agriculture
Among the duties of the Secretariat is the responsibility for water conservation.
- e. Corporation of Aqueducts and Sewage System of Santo Domingo (CAASD)
The CAASD is a public service Institution with autonomous character, created by means of Law 498 of April 13, 1973, whose fundamental intention is the planning, coordination, advisory, study, design, construction, supervision, administration, commercialization, operation and maintenance of the services of potable water; and the collection, treatment and disposal of urban and rural waste- and pluvial waters located in the National District and the Santo Domingo province.
- f. National Institute of Potable Water and Sewage System
The National Institute promotes the reforestation of the watersheds, directs and supervises the supply of potable water and the disposal and treatment of wastewaters.
- g. Dominican Military Navy
Maintain the public order in the coasts and territorial waters of the Republic; and enforce the provisions of pertinent MEAs.
- h. Dominican Council for Fishing and Aquaculture (CODOPESCA)
The Council contributes to the formulation of the national fishing policy, through the Agricultural National Council, of which it is a member, as well as in the elaboration and execution of the National Development Plan;
- i. Urban Planning Office of the Municipal City Councils
This Office is responsible for, among other things, of issuing, prior review and declaration of compliance with the laws and requirements in force, of all permissions related to any type of construction, reconstruction, alteration, extension, transfer, demolition, use or use change of buildings and structures; and to the land use or land use change; and any other matter related to zoning plans.

16.7 Grenada

Reference has to be made to several Acts and ministries to gather information as to the true institutional status of watershed and coastal areas in Grenada. The following entities are pertinent to the discharge of responsibilities in watershed and coastal areas.

a. Ministry of Health, the Environment, Social Security and Ecclesiastes Affairs The Ministry is the focal point for the implementation of the St. George's Declaration of Principles for Environmental Sustainability in the OECS. A Draft Environmental Management Act, 2007 contains provisions for the establishment of Multilateral Environmental Agreements Committee whose responsibility, inter alia, it will be to ensure Grenada's implementation of MEAs to which it is a party.

b. Forestry Department within the Ministry of Agriculture, Forestry, Lands & Fisheries ("the Ministry of Agriculture").

The Forestry Department is vested with the responsibility of implementing a new (2000) participatory forest policy, defined within the draft Act. The Main objectives of this policy are-

- To conserve species, ecosystems, and Genetic diversity;
- Maintain, enhance and restore the ability of forests to provide goods and services on a sustainable basis;
- Optimize the contribution of forest resources to social and economic development;
- Maintain a positive relationship between the Grenadian people and their forest environment.

c. Physical Planning and Development Authority

The composition of the Authority is to include as ex officio members the head of the Physical Planning Unit, the Environmental Protection Officer, the Director of Housing, two (2) senior public officers from the Ministry of Agriculture and the Ministry of Public Works, and the manager of the National Water and Sewerage Authority. In matters pertaining to Carriacou and Petit Martinique, the Authority is required to co-opt one (1) or more representatives from Carriacou. The head of the Physical Planning Unit is the chief executive officer of the Authority. The Act requires the preparation of a physical plan for the whole of Grenada.

The Authority functions as the national service for the identification, protection, conservation and rehabilitation of the natural and cultural heritage of Grenada in accordance with the United Nations Education, Scientific and Cultural Organization's Convention for the

Protection of the World Cultural and Natural Heritage. Pursuant to the Act there is to be established a committee called that Natural and Cultural Heritage Advisory Committee. This committee advises the Authority on amongst other matters, applications for development of land within environmental protection areas, and the issue of abatement notices for the preservation of amenities.

d. National Water & Sewerage Authority

The Authority is charged with sole responsibility for the provision of water supplies, conservation, augmentation and distribution. The Authority is also responsible the treatment and disposal of sewage and other effluents. The duties of the Authority include investigate water resources at Grenada, make recommendations as to conservation and preservation, provide potable water for domestic use and water for agriculture, industrial and commercial purposes.

e. Grenada Solid Waste Management Authority

The Solid Waste Management Authority and charged it with the duty of developing solid waste management facilities and improving the coverage and effectiveness of solid waste storage, collection and disposal facilities. Amongst the duties and functions of the Authority are to develop a management scheme for all aspect of solid waste and undertake the necessary research, experiment and operations necessary to improve the Authority's functions.

f. Waste Management Authority

This Authority is established as an entity separate and apart from the Grenada Solid Waste Management Authority. The Authority is mandated to produce a National Waste Inventory of waste generated at Grenada and a National Waste Management Strategy. The Act requires the planning authority to be involved in the decision making process of whether or not to permit a waste management facility and also sets out factors that the planning authority must consider in making its decision.

16.8 Republic of Haiti

Table 2 presents the autonomous ministries and organizations which are concerned, to varying extents, with watersheds and coastal areas management in relation to marine pollution from land-based sources.

Table 5

List of institutions engaged in Marine Pollution in Haiti.

Autonomous Ministries/Organisations	Organic Law/ Fundamental Law	Principal Functions
Ministerie de l'Agriculture des Ressources Naturelles et du Development Rural	Septembre 21, 1987	Littoral-ports-Land
Ministere de L'Environnement	january 28, 1995	Biodiversity- Pollution
Service Maritime de Navigation d'Haiti	mars 5, 1982	Marine Navigation
Electricity d'Haiti	août 20, 1989	Electricity
Ministere de la Sante Publique et de la Population	novembre 11, 1983	Diseases related to environnement-Pollution
Autorite Portuaire Nacionale	mars 15, 1985	Marine pollution related to Vessels
Service Metropolitain de	mars 3, 1981	Various wastes

Collecte des Residus Solides		
Bureau de Mines et de L'Energie	Août 1, 1986	Energy and Mines

The following are the central authorities that discharge specific responsibilities in respect of watershed management and coastal areas management –

- a. Le Ministère de l'Agriculture des Ressources Naturelles et du Développement Rural (MARNDR) is in charge of watershed management policy and risks posed by soil erosion.
- b. Le Ministère des Travaux Publics Transports et Communications (MTPTC) responsible for the drainage and storm waters which transport sediments, gray waters and wastes of all categories.
- c. Le Ministère de l'Environnement (MDE) engaged in the conservation of terrestrial and marine biodiversity.

16.9 Jamaica

The institutions of relevance to this Report in the context of Jamaica are -

a. National Environment and Planning Agency (NEPA)

NEPA is an Executive Agency established in 2001 under the government of Jamaica's Public Sector Modernization Programme. It comprises the Natural Resources Conservation Authority (NRCA), the Town Planning Authority and the Land Development and Utilization Commission (LDUC). No new legislation was passed to create the Agency and it still acts on the powers conferred by the legislation of its components.

NEPA therefore enjoys the governing authority of the NRCA and Town and Country Planning Acts that together regulate development and land use patterns throughout the island. All other agencies with watershed and coastal area mandates are therefore likely or must connect with it throughout the course of exercise of their own functions. Its main function is a regulatory one.

b. Water Resources Authority

The WRA is a regulatory body that's also performs planning, research and technical assistance roles. It is vested with responsibility, inter alia, for

- i). protecting watersheds, aquifers and other sources of water;
- ii) regulating storm water drainage infrastructure from the National Works Agency (NWA);
- iii) flood control regulation; and
- iv) water quality monitoring and maintenance.

It works with the Office of Disaster Preparedness and Emergency Management (ODPEM) and the National Meteorological Division to reduce the impact of natural disasters related to water. The Water Sector Policy 2004 recognizes that watershed management is often inadequate and that integrated water resource planning is not always achieved in practice due to failures in institutional coordination.

c. Ministry of Agriculture

Forestry Department

The Forestry Department's place in an institutional framework for watershed and coastal area management is readily ascertainable from the detailed list of its functions in the (Forest) Act that created it. It is explicitly conferred with the responsibility to sustainably manage and promote forests and to protect watersheds in forest reserves, forest management areas and protected areas and its own forest lands.

As a Department of the, it has inherent links with the Rural Agricultural Development Agency (RADA) which also falls under that Ministry. This linkage facilitates the promotion of responsible agricultural practices in rural watershed areas especially.

The Department is the only Agency mandated by law to take proactive steps to involve community input to achieve its more fundamental objectives. In practice the Forestry Department partners with other agencies with a mandate for water resource and watershed protection, in particular the NRCA and the WRA and sits on the National Integrated Watershed Management Council. Other agencies such as the Mines and Quarries Division of the Ministry of Mining and Energy are mandated to consult with Forestry before undertaking certain tree cutting exercises.

d. National Water Commission (NWC)

The National Water Commission (NWC) is the largest provider of public supplies of potable water and sewerage services in Jamaica. The NWC operates about 50% of the island's sewage treatment plants and is a prolific land owner, owning over 5000 hectares of watershed lands. It has a responsibility not to let these lands become unduly degraded.

As an agency, the WSC is a critical stakeholder in watershed and coastal zone management. The Water Sector Policy identifies the NWC as being part of an aggressive strategy to restore watershed lands including an environmental audit and reforestation of critical areas. It is envisioned that these plans will be harmonized with the NEPA, WRA and Forestry Department.

e. National Integrated Watershed Management Council (NIWMC)

The NIWMC is a multidisciplinary, inter-agency planning and advisory body. The members are appointed by the Prime Minister. It was established in response to a decision of the Cabinet in 2000 to implement a National Integrated Watershed Management Programmatic Framework from which was derived a Policy that had a stated goal, among others, to put in place "a coherent and rationalized legislative and institutional framework for the integrated management of watersheds on a sustainable basis" and "promote the integrated protection, conservation and development of land and water resources in the watersheds, for their sustainable use, and for the benefit of the residents of the watershed and the nation as a whole".

The Council reports directly to the Cabinet through the Minister of Environment and its Secretariat lies with the Integrated Watershed and Coastal Zone Branch of the National Environment and Planning Agency (NEPA) the focal point institution for environmental regulation in Jamaica.

f. Office of Disaster Preparedness and Emergency Management

Office of Disaster Preparedness and Emergency Management (ODPEM) exists to “[take] pro-active and timely measures to prevent or reduce the impact of hazards on Jamaica, its people, natural resources and economy”.

g. Non Governmental Organizations (NGOs) and Community Based Organizations (CBO)

Over the past decade, NGOs have played a critical role in the management of protected areas due to concerted government policy to delegate the NRCA’s powers in this regard. Two (2) notable NGOs in this respect are the Jamaica Conservation and Development Trust that manages the Blue and John Crow Mountains National Parks and the Caribbean Coastal Area Management that oversees the Portland Bight Protected Area.

They may also form the basis of local watershed and forest management committees the establishment of which was authorized by an executive decision of the Cabinet in 2000. Fishermen’s’ co-operatives also assist themselves in forming a voice within the coastal management framework.

16. 9 St. Kitts and Nevis

The Constitution of St. Kitts and Nevis provides separately for legislative and administrative functions in respect of coastal areas management and the supply of water to Nevis under the federal system. In both St. Kitts and Nevis institutional responsibility for the management of coastal areas is centralized in the agencies that appear below –

- a. Minister with responsibility for development.
Under the National Conservation and Environmental Protection (NCEPA) Act, 1987 as amended in 1996 the Minister performs the following relevant functions-
 - i) preparation and implementation of a coastal zone management plan;
 - ii) undertaking environmental assessments of development activities in the coastal zone; and
 - iii) selection and management of protected areas.

- b. Ministry of Sustainable Development, Department of Physical Planning and Environment
Department of Environment
The Department is established under the NCEPA (Amendment) Act and functions under the general directions of the Minister. The Department is required to conduct its business in a manner that is consistent with government policy and is mandated to consult other agencies with regard to projects and policies. Its specific functions include the integration, regulation, facilitation and monitoring of environmental protection and conservation strategies and the negotiation of environmental treaties initiated by regional and international organizations. The Department works in collaboration with NGO's with a view to ensuring their support for conservation and environmental protection.

- c. National Conservation Council (NCC)
The NCC is primarily an advisory body. It advises the Minister in selection of protected areas, control development and maintenance of beaches, control of construction on any beach.

- d. Ministry of Works and Public Utilities Water Services Department
Established under the Ministry of Works, the Water Services Department is vested with wide powers for water conservation and the protection of watersheds. It is also required to prepare management plans in relation to the duties it is required to discharge.

- e. Ministry of Agriculture
The Ministry is discharges its duties among several departments. The following are relevant to this activity.

Department of Forestry
The Forestry Department exercises duties in relation to watershed and coastal area management. Specifically the Department is required to collaborate with the Department of Fisheries and Nevis Island administrations on the promotion of forestry and the protection of watersheds.

Department of Fisheries
The Department of Fisheries is responsible for addressing marine pollution issues and to regulate activities that impact on the fisheries resources of St. Kitts and Nevis.

- g. Ministry of Agriculture, Nevis Island Administration, Department of Physical Planning and Environment, Fisheries Management Unit, Nevis island Assembly

- h. St. Kitts and Nevis Solid Waste Management Corporation.
The Corporation was established under the Solid Waste Management Act, It is responsible for managing and directing the implementation of the OECS Waste Management Project which, inter alia, concerns itself with the safe disposal of ship-generated waste. In carrying out its functions the Corporation is required to collaborate with the Ministry of Health.

- i. The Saint Christopher Heritage Society
This NGO has been very instrumental in ensuring the preservation of the natural and cultural heritage, including the national parks, of St. Kitts and Nevis.

16.10 St. Lucia

There is no legislation or policy which directly addresses integrated coastal area and watershed management and consequently, there is a fragmented institutional framework in St. Lucia which focuses on the integrated management of these areas. Coastal area and watershed management is achieved through the works of several Government agencies which operate under the mandate of various Acts and policies that incorporate aspects of IWCAM.

There is the absence of a coordinating body in conjunction with minimal networking between these agencies. Additionally, there is a great deal of overlap in some areas; for example, there are three agencies with responsibility for waste management under the mandates of three different acts. Table 6 presents a summary of the institutions involved in watershed and coastal and marine area management in St. Lucia.

Table 6

Institutions Involved In Management of Watersheds and Coastal and Marine Areas in Saint Lucia

Focus Area	Institution	Governing Acts / Policies	Institutional Responsibilities
Watersheds, Coastline, Coastal areas, Wetlands	Conservation Authority	Conservation Authority Act No. 16	To handle conservation issues in general and to advise the Government on issues relating to coastal protection.
	Ministry of Tourism		
	Sustainable Development and Environment Unit, Ministry of Physical Development, Environment and Housing	Physical Planning and Development Act No. 29 of 2001	Include the regulation and management of land use and development, the monitoring of the impacts of development on the environment; where necessary protecting natural sites by declaring Environmental Protection Areas.
	Land Conservation Board	Land Conservation and Improvement Act No. 10	The management and coordinating of the activities of conservation agencies with reference to issues conserving the conservation of

Focus Area	Institution	Governing Acts / Policies	Institutional Responsibilities
			land and water resources.
	Fisheries Division, Ministry of Agriculture	Fisheries Act No. 10 of 1984;	Include the regulation of fishing and fisheries and to the declaration of marine reserves where necessary for the protection of sensitive ecosystems.
	Saint Lucia National Trust	Saint Lucia National Trust Act No. 16 of 1975	The promotion and protection of natural resources including marine and coastal areas
	Soufriere Marine Management Authority		
	Saint Lucia Solid Waste Management Authority	St. Lucia Solid Waste Management Authority Act No. 20 of 1996	Include the management of landfills and the establishment and management of coordinated and integrated systems for solid waste and hazardous waste collection, treatment, recycling and disposal
	The Sewage Authority	Public Health (Sewage and Drainage) Act No. 40 of 1953	Manages sewerage and drainage issues with a view to preserving public health.
	National Water and Sewerage Commission	Water & Sewerage Auth. Act No.13 of 1999	Include regulating the granting of licenses and the development and management of water supply and sewerage facilities.

16.11 St. Vincent and the Grenadines

At present, there are two key institutions which are responsible for watershed management in Saint Vincent and the Grenadines. They are the Forestry Division and the Central Water and Sewage Authority.

a. Ministry of Agriculture

The work of two Divisions is relevant -

Forestry Division

Watershed management is totally dependant on a country's forest reserves. Any impact on these reserves, positive or negative, will affect watershed areas. Because most of the watershed areas in Saint Vincent and the Grenadines are situated on Crown Lands, they fall under the protection of the Forest Resource Conservation Act under whose operation and implementation the Forestry Division falls. Guided also by the Wildlife Protection Act, this Division has major control over watershed management in Saint Vincent and the Grenadines.

A National Forest Resource Conservation Plan for a ten year period of 1993-2003 was prepared and served as a guide for the Division in the implementation of the forest policy, legislation and regulations. Executing and promoting research to provide information and technology development which will permit better management and utilization of natural resources on Crown and private land.

Fisheries Division

This division is the only institution responsible for coastal area management in Saint Vincent and the Grenadines. This Division is given its mandate by the provisions of the Fisheries Act and the Maritime Areas Act. This Division works in conjunction with a number of regional organizations and has had success in its programme implementation. It also supports the development of a fisherman's cooperative and sees this as a line of communication with its stakeholders. It is felt however that the regulatory function of the Division needs to be strengthened to allow stronger regulatory control of fishing and scuba diving activities.

Other Agencies

There are other institutions which although not directly involved in the management of watersheds and coastal areas, have because of their legislative mandate some involvement in this area. These include:

- The Office of the Prime Minister; through whom oversight for marine parks is coordinated;
- The National Parks Unit within the Ministry of Tourism, created in 2002 pursuant to the provisions of the National Parks Act;
- The Environmental Services Unit which functions as a coordinating mechanism for environmental matters; and
- The Physical Planning Unit within the Ministry of Housing which is responsible for the preparation of physical development plans; and

b. The Central Water and Sewage Authority


This Authority, established pursuant to the provisions of the Central Water and Sewage Authority Act, has a legal mandate for the conservation, control, apportionment and use of water resources in Saint Vincent and the Grenadines. As a result of this the Authority has worked in close collaboration with the Forestry Division in the management of watersheds. In fact the Forestry Division is given total control by the Authority of water resource tapped in the forest. Although there is no established management plan between both agencies, this has not hindered their efforts to work closely in developing strategies aimed at protecting watershed areas.

16.12 Trinidad and Tobago

There is no legislation or policy which directly addresses integrated coastal areas and watershed management in Trinidad and Tobago and though there is a coordinating body for this process, there is a fragmented approach to the coastal areas and watershed management. Coastal areas and watershed management is achieved through the works of several Government agencies which operate under the mandate of various Acts and policies that incorporate aspects of IWCAM (See Appendix V). However, under the Environmental Management Act, the operations of all government agencies must be in agreement with the National Environmental Policy. Additionally, the work of the different agencies is coordinated by the Environmental Management Authority. This is done through the appointment of Environmental Officers and memoranda of understanding from the EMA. Therefore, the institutional framework which provides for and promotes the integrated management of the environment in general also provides for the management of watersheds and coastal and marine areas. Despite the work of the EMA as a central coordinator of the activities of these agencies, this framework is fragmented in nature and there is limited networking among agencies.

Table 7

Institutions Involved In Management of Watersheds and Coastal and Marine Areas in Trinidad and Tobago

Focus Area	Institution	Governing Acts / Policies	Institutional Responsibilities
Watersheds, Coastline, Coastal areas, Wetlands 	The Environmental Management Authority	Certificate of Environmental Clearance Rules, 2001; Certificates of Environmental Clearance and Environmentally Sensitive Areas; Water Pollution Rules, 2001	The Monitoring and management of activities conducted in coastal and marine areas. Includes regulating activities in environmentally sensitive areas and monitoring and regulating the release of potential water pollutants. These activities require permits from the EMA.
		The Marine Areas (Preservation and Enhancement) Act Chap. 37:02	Responsibilities include the declaration, where necessary, of marine areas as restricted areas. This includes adjacent land and wetlands and submarine areas. The making of regulations to provide for the protection of the biodiversity of restricted areas where necessary and the maintenance, control and management of these areas.

Focus Area	Institution	Governing Acts / Policies	Institutional Responsibilities
	The Water Resources Agency	National Water Resource Management Policy, 2003	Water resource management
	The Town and Country Planning Division	Hillside Development in Trinidad and Tobago – Policy and Development Standards, 2006; Tobago Region Physical Development Plan, 1991	The regulation and management of land use throughout the island.
	The Forestry Division	Forests Act (Cap 66); 1999 Policy of the Forestry Division; State Lands Act Chap. (Cap 57); National Policy and Programmes on Wetland Conservation for Trinidad and Tobago, 2002	The protection of Forests and Wetland areas. The Division has the power to designate prohibited areas.
	The Port Authority	Port Authority Act (Cap 51)	Include the control and management of coastal areas (foreshores, harbors and the entrances to these areas), the prevention and removal of obstructions within these areas and the regulation of activities conducted within these areas.
	The Chaguaramas Development Authority	Chaguaramas Development Authority Act (Cap 35); Port Authority Act (Cap 51)	Management of the Chaguaramas Peninsula (includes coastal areas)
	The Ministry of Health	Public Health Ordinance Ch. 12. No. 4	Include matters related to the prevention of the pollution of watershed and coastal and marine areas.
	The Water and Sewerage Authority	Water and Sewerage Act (Cap 54)	The Water and Sewerage Authority administers public sewerage works, provides sewerage facilities and monitors and enforces the laws regarding sewage disposal.

Disparate governmental entities are responsible for the implementation of the various legislative and policy instruments related to IWCAM. Significant policy instruments on the subject include –

- The National Environmental Policy, 2005 which sets out government policy on integrated management of coastal areas and proposes mechanisms in support of these such as the establishment of a zoning system. The specifics of these mechanisms have however not been articulated in the National Environmental Policy. The Vision 2020 Sub-Committee Report (Sector Strategic Plan) for the Environment does recommend specific actions which necessary for integrated management of coastal areas. This Sector Strategic Plan however remains subsidiary to the Vision 2020 Draft National Strategic Plan, 2005 and which weighs and prioritizes the policies and recommendations of all 28 Sector Strategic Plans against each other.
- The National Programme of Action for the Protection of the Coastal and Marine Environment from Land-Based Sources and Activities 2006-2011 provides the most concrete recommendations and actions to address, inter alia, management of coastal areas.
- The Tobago Region Physical Development Plan, 1991, inter alia, provides for regulating specific activities in coastal areas in Tobago which may lead to pollution of the marine environment.
- Finally, the National Water Resource Management Policy (September 2003) includes commitments from government as well as specific strategies to regulate activities in coastal areas.

17 RELEVANCE OF MULTILATERAL AND REGIONAL ENVIRONMENTAL AGREEMENTS

IWCAM project countries are parties to several multilateral and regional MEAs that directly or indirectly relate to watershed and coastal areas management. These instruments in their scope set out for parties the obligations in the form of activities which must be implemented to remedy a specific problem and give effect to their requirements. The mere act of ratification or accession to MEAs however do not necessarily make them part of the national law or their requirements binding, unless and until national implementing legislation is enacted in their national legislatures giving effect to them. In fact for IWCAM project countries, ratification of an international legal instrument can be said to amount only to “an intention to be bound” by the instrument. Indeed for Cuba and the Dominican Republic, national implementing legislation must actually be in place before these countries ratify the instruments. English-speaking IWCAM project countries on the other hand are able to ratify an instrument for several years before, if at all, steps are taken to incorporate them into their national laws. There are several reasons for this which will be discussed later in this chapter.

The Republic of Haiti practices the monist tradition as regards international law. By this tradition, once approved and ratified in accordance with Article 276-2 of the Constitution, international treaties take precedence over the laws which form part of the legislation of the country and repeal all the laws which are contrary to them. On the other hand, article 276 specifies that the French National Assembly cannot ratify any treaty, convention or international agreement that contains clauses that contravene the Constitution. Thus international treaties signed and ratified by Haiti form an integral part of their national law. The State is obliged to respect the principle of *Pacta Sunt Servanda*. In accordance with this principle, all treaties that are ratified binds the parties and must be carried out in good faith in accordance with treaty requirements. The country however does not adhere either to the provisions of the Cartagena Convention or its three protocols including the LBS Protocol.

The Caribbean area shares common global problems of stresses to their coastal and marine natural resources such as reduction in natural stocks from overfishing, pollution and contamination from anthropogenic sources. This, in addition to the negative impacts from natural disasters. The status of the coastal natural resources is therefore affected by a combination of external factors (e.g. global and regional pollution and degradation, global and regional overfishing) and internal factors (e.g. local pollution and degradation and local overfishing). One of the key objectives of the “**Integrating Watershed and Coastal Areas Management**” (IWCAM) project is to assist participating countries in addressing the problems being experienced in their watershed and coastal zone management areas, significant among which is the problem of marine pollution. Of significance to this and underlying it is the legal, policy and institutional framework

that supports this new management system. MEAs are legal instruments themselves and shape part of that framework. They are integral to the legal and institutional framework for addressing pollution concerns in watershed and coastal areas.

17.1 Review of MEAs Relevant to IWCAM

There are several MEAs that are of relevance to IWCAM. The following are directly relevant to marine pollution and resource protection –

1. United Nations Convention on the Law of the Sea (UNCLOS)

UNCLOS sets the global standard that all countries are legally bound to protect the marine environment, protect fish stocks, and prevent pollution. The Convention lays down a comprehensive regime of law and order in the world's oceans and seas establishing rules governing all uses of the oceans and their resources. At the time of its adoption, the Convention embodied in one instrument traditional rules for the uses of the oceans and at the same time introduced new legal concepts and regimes and addressed new concerns.

UNCLOS calls on States to develop national legislation for the reduction, prevention and control of marine pollution either as minimum standards or guiding principles and be subsequently enforced. At the same time States may impose more stringent standards than the global minimum with the exception of those affecting international navigation. Vessel discharges fall within that framework. The standards for their discharge are to be no less effective than generally accepted international rules and standards. The extent to which Parties to UNLCOS are under the obligation to implement “generally accepted” and enforce “applicable” international rules and standards for the prevention of pollution from vessels depends to a large extent on the degree of their international acceptance.

2. Convention for the Protection and Development of the Marine Environment for the Wider Caribbean Region, Cartagena, Colombia 1983 (commonly known as the Cartagena Convention)

The Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region (Cartagena Convention) is the authority providing the legal framework for the Caribbean Environment Program (the CEP). The CEP was established to provide a mechanism whereby the diverse states and territories of the region could collectively address the protection and development of the marine and coastal resources of the Wider Caribbean, the base for the economic development of the region. It is the only binding regional environmental treaty for the WCR. It calls upon its Contracting Parties to develop protocols and other agreements to facilitate the Convention's effective implementation. The Convention and its Protocols constitute a legal commitment by these countries to protect, develop and manage their common waters, individually and jointly.

The Convention is supplemented by three Protocols:

1. Protocol Concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region which was also adopted in 1983 and entered into force on 11 October 1986.
2. Protocol Concerning Specially Protected Areas and Wildlife (SPAW) in the Wider Caribbean Region Committee which was adopted on 18 January 1990. The Protocol entered into force on 18 June 2000.
3. Protocol Concerning Pollution from Land-Based Sources and Activities which was adopted on 6 October 1999 but is not yet in force.

The legal structure of the Convention is such that it covers the various aspects of marine pollution for which the Contracting Parties must adopt measures. Thus, the Convention requires the adoption of measures aimed at preventing, reducing and controlling pollution of the following areas:

- pollution from ships
- pollution caused by dumping
- pollution from sea-bed activities
- airborne pollution
- pollution from land-based sources and activities

In addition, the Parties are required to take appropriate measures to protect and preserve rare or fragile ecosystems, as well as the habitat of depleted, threatened or endangered species and to develop technical and other guidelines for the planning and environmental impact assessments of important development projects in order to prevent or reduce harmful impacts on the area of application.

3. The LBS Protocol

The LBS Protocol is a regional mechanism assisting the United Nations Member States in the Wider Caribbean Region to meet the goals and obligations of two international agreements: The United Nations Convention on the Law of the Sea (UNCLOS) and the Global Plan of Action for the Protection of the Marine Environment from Land-Based Activities (GPA). UNCLOS calls upon States to adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources. The GPA highlights the need for action to reduce the pollutant load to the seas from land-based sources and activities. Both of these instruments emphasize the need to act at the regional level to address this problem.

Despite its relevance to Caribbean programmes for the protection of the marine environment, the level of participation is quite low. Of the 13 IWCAM participating States, to date ratifications have been received from only the Dominican Republic and Trinidad and Tobago.

4. Basel Convention on the Transboundary Movement of Hazardous Wastes and their Disposal, 1992

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal is the most comprehensive global environmental agreement on hazardous and other wastes. It aims to protect human health and the environment against the adverse effects resulting from the generation, management, transboundary movements and disposal of hazardous and other wastes. Under the Convention, transboundary movements of hazardous wastes or other wastes can take place only upon prior written notification by the State of export to the competent authorities of the States of import and transit (if appropriate) and must be accompanied by a movement document from the point at which a transboundary movement begins to the point of disposal.

Some countries like Grenada and other African States have placed outright bans on the importation of hazardous wastes from other countries. Through a Compliance Mechanism, adopted at COP6 in December 2002, IWCAM project countries as Parties to the Convention can obtain assistance as regards compliance difficulties they may encounter. Such difficulties may relate to, for example, dealing with illegal traffic, or meeting reporting obligations. The mechanism is non-confrontational and preventive in nature, and seeks to assist Parties to implement appropriate and effective solutions to difficulties.

5. Convention on the Conservation of Biodiversity

The Biodiversity Treaty, was one of two major treaties opened for signature at the United Nations Conference on Environment and Development (UNCED) in 1992. The treaty defines biodiversity as "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems." Parties to the Biodiversity Treaty "affirm sovereign rights over the biological resources found within their countries, while accepting responsibility for conserving biological diversity and using biological resources in a sustainable manner," according to an International Union for the Conservation of Nature (IUCN) assessment of the treaty.

In comparison to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Treaty sets goals rather than obligations or targets. For example, CITES sets out obligations that member countries have to meet. They have to introduce a permit system for trade in certain species of wildlife, they are allowed to export or import certain species under certain conditions, and so on. The commitments are precise and can be measured. The Biodiversity Convention on the other hand gives guidance on the policies needed to achieve these goals.

The emphasis of the Biodiversity Convention is almost entirely on action at the national level. In the negotiations that produced the Convention, governments of developing countries were adamant that they did not want any of the structures of other conservation agreements – agreed lists of protected sites, or of key species and habitats to be conserved. The Convention leaves it up to national governments to decide how they might implement its provisions. It is thus a framework agreement.

6. United Nations Framework Convention on Climate Change (UNFCCC)

Over a decade ago, Caribbean SIDS joined the UNFCC to begin to consider what can be done to reduce the threat posed by rising sea levels which could severely impact their territories. The international response to climate change has evolved around the UNFCC and its Kyoto Protocol, which together provide the institutional basis for action on a global scale. The latest round of international talks – the United Nations Climate Change Conference in Nairobi – deals with important issues for advancing international action to mitigate the causes of climate change, and to adapt to its impacts

Recently the Kyoto Protocol established under the Convention set firm targets and other legally binding measures for Parties. Caribbean SIDS are among the most vulnerable to the impact of climate change despite the fact that it makes minimal contributions to greenhouse gas emissions. The implementation of practical adaptation activities with predictable and secure funding therefore is a top priority for SIDS. An Adaptation Fund was therefore established under the Kyoto Protocol to support adaptation activities in developing countries. The Fund is financed by a share of the proceeds generated by the Clean Development Mechanism (CDM) – one of the Protocol’s market-based instruments – and by voluntary contributions.

7. International Convention for the Prevention of Pollution from Ships (MARPOL 73/78)

The MARPOL Convention is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. It is a combination of two treaties adopted in 1973 and 1978 respectively and updated by amendments through the years.

The Convention includes regulations aimed at preventing and minimizing pollution from ships - both accidental pollution and that from routine operations - and currently includes six technical Annexes presented below.

Box 1: MARPOL 73/78 Technical Annexes

Annex I	Regulations for the Prevention of Pollution by Oil
Annex II	Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk
Annex III	Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Form
Annex IV	Prevention of Pollution by Sewage from Ships
Annex V	Prevention of Pollution by Garbage from Ships
Annex VI	Prevention of Air Pollution from Ships (entry into force 19 May 2005)

States Parties must accept Annexes I and II, but the other Annexes are voluntary. All OECS countries have ratified the MARPOL Convention and its Annex V. The countries introduced national legislation to implement Annex V through technical assistance made

available through the Wider Caribbean Initiative on Ship-Generated Waste Project financed and executed by the World Bank and International Maritime Organisation respectively.

9. Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972

This instrument, adopted in 1972, is generally known as the London Convention. The Convention has a global character, and contributes to the international control and prevention of marine pollution. It prohibits the dumping of certain hazardous materials, requires a prior special permit for the dumping of a number of other identified materials and a prior general permit for other wastes or matter. "Dumping" has been defined as the deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures, as well as the deliberate disposal of these vessels or platforms themselves. Wastes derived from the exploration and exploitation of sea-bed mineral resources is, however, excluded from the definition. The provision of the Convention shall also not apply when it is necessary to secure the safety of human life or of vessels in cases of force majeure.

17.2 Improving Compliance with Regional and Multilateral Environmental Agreements

The level of detail contained in the Country Reports varied. There was no indication by any of the countries of the factors or processes that have resulted in the countries not being signatories to the MEAs to which GEF-IWCAM countries are parties. There are a number of barriers to treaty adoption and national implementation of treaty commitments. Case studies from four Caribbean countries (Caribbean Law Institute, 1998)² have identified these constraints for treaty adoption as:

- Limited financial, technical, and human resources such as - capacity building and training, co-operation in scientific endeavors and data collection, research, and transfer of technology.

² Caribbean Law Institute, 1998. Implementation of Marine and Environmental Treaties in Organisation of Eastern Caribbean States: Case Study Reports for Antigua and Barbuda, Dominica, St. Kitts and Nevis and St. Vincent and the Grenadines

- Lack of political priority on environmental protection and sustainable development;
- Lack of information and understanding of treaty benefits and costs; and
- Lack of a national focal point responsible for treaty acceptance.

Constraints for national implementation of treaty commitments were identified as:

- Lack of expertise and inadequate financial and human resources in line departments to “champion” legislative follow-up and enforcement;
- Tendency of international financial institutions to support projects rather than long-term institutional capacity-building;
- Other political priorities; and
- The lack of comprehensive, framework environmental legislation.

To this list we can add –

- There is no central mechanism for addressing matters pertaining to multilateral instruments resulting in “ad hoc-ism”.
- No assessments to determine whether there is need for new legislation and/or the need for modernization or amendments (as with many of the MEAs).
- Shortage of international law experts available to governments to advise on the ramifications of treaty ratification, the taking of specific measures for compliance and the preparation of domestic legislation.
- Inadequate public education and awareness is necessary to create and further develop an environmentally aware public.

18. SUMMARY OF CURRENT LEGISLATIVE, POLICY AND INSTITUTIONAL FRAMEWORK FOR IWCAM

18.1 Legislative and Policy Aspects

As a general statement, it may be said all the IWCAM participating countries lack legislation and policies that deal directly with integrated watershed and coastal areas management. Each country has a number of Acts and policies that contain some aspects of watershed management and coastal areas management though with no specific objective of integrating watershed and coastal areas management. As a result watershed and coastal areas management is left to the case-by-case application of sector laws, which may have different and at times conflicting goals.

Over the last decade Cuba and Santo Domingo have developed a series of laws, regulations, policies, strategies, and decrees aimed at protecting the country's environment and natural resources. In Cuba, environmental requirements are included not only in laws pertaining to environmental agencies and institutes, but appear in legislation and policies governing planning, foreign investment, tourism and other activities. All together, this body of substantive and procedural rules provides a strong framework for protection of Cuba's watersheds, and marine and coastal resources. In fact, systematic assessments carried out in the last 5 years indicate that there has been a reduction of biodegradable organic load being discharged into terrestrial and coastal waters. Development of new and stronger environmental policies has coincided with new economic strategies and plans that have resulted in widespread investments in coastal zones and made tourism the number one industry in the country. Mining and oil and gas development have also become top economic priorities. The unprecedented amount of new development and industrial activity in or near Cuba's coastal areas has prompted policy makers to pay special attention to developing policies that protect Cuba's abundant and diverse marine and coastal resources and the watersheds.

A survey of the legislative and institutional framework for Cuba and the Dominican Republic can conclude that a framework for coastal zone and watershed management, though not embodied in a single instrument, exists and contains the various elements for watershed and coastal and marine areas management. Some gaps however exist in the areas identified below.

Table 8

Gaps in the legislative framework – Cuba and Dominican Republic

- Lack of harmonized policy for administrative responsibility on water resources
- Need to revise legislation on water and soils
- Weak legal norms on gas emissions into the atmosphere
- Need to regularize the management and control of chemical products

For the remainder of the IWCAM project countries with the exception of Haiti, the existing legislative framework in each country addresses the various facets of watershed and coastal areas management through –

- The management of coastal land use;
- The regulation of solid and liquid waste disposal;
- Regulations to control and mitigate littering;
- Legislation and regulations which address the use of pesticides and other hazardous chemicals;
- Fisheries Acts and regulations which regulate fishing practices;
- Environmental Acts which serve as overarching legislation to address biodiversity conservation; and
- Ecosystem management and aspects of coastal and watershed management that are not considered in the other Acts.

For Haiti laws addressing coastal areas practically do not exist though there are many projects or preliminary drafts of laws which never had the chance to be adopted by the Parliament and/or the Executive. The new 2006 Decree, CHAPTER IV: CONTINENTAL WATERS
Art 115: Le bassin versant est l'unité de planification opérationnelle pour la gestion intégrée des ressources hydriques et de leur protection makes significant strides towards the establishment of an environmental framework.

In Barbados, Dominica and Grenada in particular there are several pieces of legislation which relate or impact on the focus issue of this project- integration of watershed and coastal zone management. In general, the various pieces of legislation deal with a specific area e.g. ground water, solid waste or forests. In terms of the integration concept- most of the legislation then appears to be fragmented.

A closer examination of the legislation made under the specified headings summarizes the key similarities and differences among them as follows –

Pollution Control and Public Health

Each of the countries assessed has legislation in place to prohibit pollution of the marine environment. In Saint Lucia this legislation speaks specifically to the control of oil pollution in the Oil in Navigable Waters Act. This Act prohibits oil pollution from all sources. In Antigua and Barbuda, this is provided for in the Oil Pollution of Maritime Areas Act, 1995 (not described in the country report). A new Draft Marine Pollution Bill is under consideration. The Bill concerns itself solely with pollution from shipping and shipping related activities. In Trinidad and Tobago, marine pollution is addressed by the National Programme of Action for the Protection of the Coastal and Marine Environment from Land-based Sources and Activities 2006 – 2011, as well as the Tobago Region, Physical Development Plan.

Four pieces of legislation address litter, sewage and waste management in Saint Lucia: The Litter Act No. 24 of 1983, the Saint Lucia Solid Waste Management Authority Act No. 20 of 1996, the Water and Sewerage Authority Act No. 13 of 1999 and the Public Health (Sewage and Drainage) Act No. 40 of 1953. Two similar Acts address this issue in Antigua and Barbuda, the National Solid Waste Management Authority Act, 1995; and the National Solid Waste Management Authority (Amendment) Act, 2005 in conjunction with the Solid Waste Management (Haulage and Tipping Fees) Regulations, 1996. In Trinidad and Tobago, the National Environmental Policy, 2005 and the Water and Sewerage Act Chap. 54:40 address this.

While Cuban environmental legislation for integrated management of the coastal zone and watershed is wide, problems however exist with regard to their implementation. The lack of norms related to emissions into the atmosphere is identified as the main legal gap. Pollution has been identified as one of the main environmental problems in Cuba. As a result goals for its control and the elimination of its causes have been established up to 2010.

Management of Coastal Areas

In the GEF-IWCAM countries where tourism is the main source of income, the legislative and policy framework is more robust and directed towards maintaining a stable and environmentally safe coastal area. Thus all the countries, except for Trinidad and Tobago, have legislation which provides specifically for beach protection and marine area management. Trinidad and Tobago does not have a single Act which speaks specifically to beach protection. Instead, beach protection is addressed through a variety of instruments, for example the Environmental Management Act, National Environmental Policy, and the designation of some beaches as prohibited areas under the

National Programme of Action for the Protection of the Coastal and Marine Environment from Land-Based Sources and Activities 2006-2011. In the fisheries sector, all the GEF-IWCAM countries have established Fisheries Acts to regulate fishing activities including permissible fishing techniques. Trinidad and Tobago does not have a similar single Act but regulation on fisheries activities is governed by several pieces of legislation, which include the EMA and the National Programme of Action for the Protection of the Coastal and Marine Environment from Land-based Sources and Activities 2006 – 2011.

Land Use

There is extensive coverage for matters pertaining to land use for all IWCAM project countries, except Haiti. Some of these enactments are relatively new however. A key introduction in the legislative regime is the reliance upon environmental impact assessments as regards project activities that are likely to cause adverse impacts to the environment. Countries rely on several management plans and regulations to enforce measures as regards land use within coastal and watershed areas.

Management of Watershed Areas

Both Cuba and the Dominican Republic have enacted legislation that embraces the broad range of issues pertaining to watershed management. Like Cuba, the legislative regime in the Dominican Republic has a wide range of diverse regulations that control the disposal of polluting agents into the water courses and the marine-coastal zone, the soil and the atmosphere. There are however problems associated with the availability of water supplies and the management, collection, transportation and final disposal of solid wastes.

18.2 Institutional Aspects

There is no clear institutional framework which contributes to the specific objective of integrating watershed and coastal areas management in GEF-IWCAM countries. The framework presents a mix of formal and informal liaisons between stakeholders. The fragmented nature of the laws and the independent operation of the agencies created by many of them are slowly giving way to deliberate attempts to facilitate an integrated approach to watershed and coastal areas management however.

The management of the coastline is made more difficult by the large number of different stakeholders and institutions involved in the use of these resources. In some instances tourist related activities run counter to the preservation of the coastal and marine environment. For example, hotel development on beach fronts without adequate setbacks has resulted in severe beach erosion in Antigua and Barbuda. There is increased pollution from some hotels and the boating industry. Tour and dive operators damage coral reefs with anchors and by

spear fishing. A new Draft Fisheries Act mentioned earlier, proposes to give greater powers to the Chief Fisheries Office to declare threatened areas as marine reserves.

In Barbados, planning and implementation processes still occur largely on a sectoral and intra-institutional basis. There is no overarching legislation or policy requiring an integrated approach and in most instances integrated approaches to watershed and coastal areas management are practiced on an informal basis. There are a few instances in which integration is mandated in legislation. In other limited areas (e.g. the EIA process under the Town Planning Office's development control mechanism) integration is achieved through development of practice within and between regulatory bodies.

A major area of weakness, identified for all the GEF-IWCAM project countries, is inadequate human resource capacity, specifically, the lack of adequately trained manpower to carry out the functions needed for integrated watershed and coastal areas management, and a lack of structured training programmes. There is a need for codes of good agricultural practice to protect water resources and ensure other environmental benefits, as well as for a major tree planting initiatives to control and prevent erosion in many of the countries assessed in this report.

The institutional framework in Antigua and Barbuda is achieved primarily through the works of a few Government agencies subdivided into several departments. The departments operate under the mandate of several Acts and policies and there is some overlap in the responsibilities of the different divisions. For example, the Land Division is responsible for the management and control of government lands, including land use, land reclamation and sub-division, while the Development Control Authority is responsible for the development and use of land for urban, economic and infrastructural development. Antigua has the unique situation of having agencies responsible for Tourism and the environment under one ministry, the Ministry of Tourism and the Environment. Although the Environment Department was upgraded to a Division, the joint management of these divisions seems to result in several conflicts. No legislation was identified within the country report which details the duties of this unit. The country report describes the unit as a 'focal point for matters relating to the environment to include land usages and marine resources'. However, most of the responsibility for coastal area and watershed management is vested with other divisions. For example, the Ministry of Public works is responsible for managing activities on the country's beaches.

Similar to Dominica and St. Kitts and Nevis, the institutional approach in Grenada remains fragmented. There is currently no significant legislative or institutionalized co-ordination mechanism that cuts across ministerial lines. The few instances of prescribed inter-agency collaboration are established to manage specific aspects of the environment or activities.

At least ten (10) agencies or bodies have been identified which may have an impact on integrated watershed and coastal area management in St. Lucia. Coastal area and watershed management is achieved through the works of several Government agencies which operate under the mandate of various Acts and policies that incorporate aspects of IWCAM. With the absence of a coordinating body there is minimal networking between agencies. Additionally, there is a high level of overlap in some areas; for example, there are three agencies having responsibility for waste management under the mandates of three different acts. As a result several issues that may be overdue for consideration as part of the overall management of St. Lucia's coastal and marine resources are not being satisfactorily managed. These inadequacies have led to the loss of natural habitats and deteriorating water quality in several coastal areas.

Although a coordinating body for environmental management exists in Trinidad and Tobago, a fragmented approach to coastal areas and watershed management is practiced. Coastal areas and watershed management is achieved through the works of several Government agencies which operate under the mandate of various Acts and policies that incorporate aspects of IWCAM. There is limited networking among agencies. Early steps towards IWCAM have been established in Saint Vincent and the Grenadines, support for which may be found in recommendations for improved environmental planning emphasize in the country.

Appendices III, IV and V offer a synopsis of agencies involved in the management of watersheds and coastal and marine areas as well as their institutional responsibilities in some of the IWCAM project countries.

19 **KEY ISSUES, RECOMMENDED ACTIONS AND CONCLUSIONS**

19.1 Key Issues and Recommended Actions

The task of examining the legal, policy and institutional framework for integrating watershed and coastal areas and the parallel task of identifying problems associated with it is now complete. This exercise which involved 13 national consultants, 4 Steering Committee members and scores of other persons who were consulted from many disciplines, ministries and sectors has provided critical guidance to the output. They all agree that because policies designed to protect the sea and its resources must address problems on land, they are by no means easy to formulate. And once formulated, they are even more difficult to implement. This is especially true of SIDS with intricate, closely-coupled, interactive ecological systems. In such case it is impossible to escape the inter-linkages of all issues pertaining to IWCAM. Correspondingly the scope of any IWCAM framework is represented in a wide variety of laws that covers an equally wide range of subject areas that focus on environment, conservation, agriculture, shipping, waste management and disposal, integrated coastal zone management, public health, forestry, fisheries, pesticide use, water resources, marine areas management, development planning, pollution control, mining, emergency response and may even be extended to consider littering.

Increasing physical development in SIDS has led to steady deterioration of the marine environment, affecting coral reefs in particular, illegal disposal of garbage in gullies and water courses- resulting in floods, the high velocity and volume discharge of the terrestrial runoff entering the nearshore environment, high occurrence of landslides or erosion particularly due to slope failure leading to situation of coastal and marine environments in some countries like Barbados and Dominica and the indiscriminate use of pesticides and other agricultural chemicals with a resulting high level contamination of nearshore areas are but some of the problems that are being experienced by IWCAM project countries as they manage their watershed and coastal areas. Several uncoordinated legislative enactments that propose, inter alia, a variety of institutional mechanisms have been put in place to remedy these problems. Yet however the results are discouraging.

The legal and institutional framework for the protection of coastal and marine areas is a fundamental tool that can address these problems and ensure sustainable development and protection these areas. In framing the response, this report concedes that one of the hindering factors to resolving the state of affairs is the unwieldy legal, policy and institutional framework itself. The framework comprises a vast number of instruments and institutions that are beyond the human resource capacities of the project countries, lack focus, do not establish priorities, are uncoordinated and promote a recipe for ineffectiveness. The report therefore moves to single out the key national laws and international legal instruments that are of direct relevance to marine and coastal areas management to recommend a manageable,

practical, effective, appropriate and implemental legal and institutional framework for the protection of coastal and marine areas in the WCR. What takes place in watersheds (on the land) directly impacts our coastal areas. Watershed management issues are therefore also taken into account within the framework. Indeed there are important linkages between that can be made with those other (indirectly) relevant instruments but the limited human resource factor is deemed to be as critical as to warrant that these small steps that are manageable and immediately implemental be taken as a bold and significant step towards a sound programme for integrating watershed and coastal areas management. Solutions generally require interdisciplinary and inter-agency cooperation and are seldom as neatly presented in the manner listed here.

In view of the critical issues identified in the previous sections of this report there is an immediate need for all agencies involved in IWCAM to establish an improved working partnership for the sustained integrated management of watersheds and coastal areas. Governments typically undertake to address water pollution by establishing a set of organizations and launching specific programmes. But in reality the prevention and control of water pollution receives the lowest priority although its infrastructure is at least as expensive as that for water supply. A well-balanced arrangement of flexible, dynamic organizations and other related institutions is the best assurance that the right quality of water is available to the public or delivered to the ecosystems. It is in this context that the following recommendations for action are made.

ACTION 1: ESTABLISH APPROPRIATE INSTITUTIONAL ARRANGEMENTS

There are several options from which a country can choose. That choice will of course depend upon what is suitable taking into account such factors as the availability of legal, fiscal and technical resources, the ability to attract qualified professionals and the ease of with which proposed changes may be made to existing arrangements.

(i) Establish a Coordinating Agency

The Barbados National Report (2001) pointed out that “an integrated approach involves the development of an overarching institutional framework from which the sector specific institutions can then be carved out with little or no duplication of responsibilities or capacities. With this should come the identification and formalization of a structured framework for allocation of responsibilities and consultation with and among the relevant stakeholders.” Similar approaches have been adopted in the countries presented below.

Table 9

Examples of coordinating arrangements

England and Wales	France	The Netherlands	India
Water pollution functions under National River Authority, merged with air and soil quality to create American-style coordinating Environmental Protection Agency.	Water quality management and regulation carried out by River Basin Boards which coordinates the collection of water pollution fees.	Water Quality Boards serve as water quality managers and report to the Ministry of Transportation and Water Management	Central and State Pollution Control Boards specifies quality and discharge standards. Effectiveness of these due to clear, simple focus and well demarcated tasks, small size and high professionalism.

The agency will be responsible for coordinating the actions of the various entities that discharge IWCAM-related responsibilities as well as the laws governing the subject. To establish an independent agency for IWCAM is a costly undertaking and should not be the first choice for the already financially-strapped GEF-IWCAM countries.

(ii) *Establish Unit or Department*

In St. Vincent and the Grenadines an Environmental Services Unit is established within the Ministry of Health. The Unit is vested with the responsibility to coordinate environmental policy and management and meeting the country's obligations under MEAs. The Review of Protected Areas Management Framework in Saint Vincent and the Grenadines, 2007 Report recommended that the duties of the Unit should be broadened to include responsibility for protected area management. In St. Kitts and Nevis the NCEP Act establishes a Department of Environment within the Ministry of Planning and Development and vests it in general terms, with responsibilities fitting to IWCAM. Similarly for Cuba, the Dominican Republic, Jamaica and Trinidad and Tobago their respective environmental agencies are vested with responsibilities to coordinate the country's environmental activities which could reasonably include duties towards marine pollution. By enacting both legislation (Coastal Zone Management Act and Marine Pollution Act) and a Unit to address marine pollution within a Department of Government (Environment Department), Barbados puts forward an advanced framework for addressing IWCAM.

Discharging IWCAM functions within a Unit or Department is best suited where the Unit or Department –

- (c) is vested in law with a coordinating function, and
- (d) its duties include the broad scope of IWCAM activities.

There is the practical appeal of cost effectiveness, shortness of time for start-up operations (as these entities are already familiar with the coordinating function). In cases where the duties of the entity do not adequately cover IWCAM requirements a simple amendment of the main Act may provide a remedy.

(iii) *National Watershed and Coastal Areas Management Council*

There is no guarantee that IWCAM issues will be accorded priority status within a large bureaucracy. Because of their importance, these issues deserve a focused and priority status. It is possible to manage watershed and coastal areas outside of a statutory framework. Another possible option for accomplishing this could be to establish a National Watershed and Coastal Areas Council (or other similarly

named entity). The membership of the Council should be intersectoral in nature comprising IWCAM stakeholder interests. The duties of Council should include the setting of priorities for legislative revision, promoting compliance and enforcement and coordination of activities among agencies and the development of training programmes to enhance legal and technical capabilities. In its methodology the Council should focus upon the management of the most important linkages between watersheds and coastal areas (and the aspects of management in watersheds and coastal areas that will facilitate the objective of managing the key linkages), versus addressing issues/weaknesses related to individual areas of watershed and coastal areas management, or for that matter even common areas that are not directly related to the *integral* issues. This intersectoral Council will offer the advantages of flexibility and time-saving and will require strong leadership in facing the challenge associated with newly established organizations. In choosing this option care must be taken to avoid duplication with other existing institutions. A review and assessment of the functions of existing institutions should be conducted to make an informed and practical decision in this regard.

The Council could be established by Cabinet or other high-level institution. As a creature of Cabinet it is accorded a high priority status and influence and can cut across jurisdictional lines without obstruction. The Cabinet instrument should vest Council with the power (a) to coordinate the activities of entities that discharge IWCAM-related functions and (b) to establish Committees, Workgroups and other bodies to assist in meeting its objectives.

Jamaica provides a suitable example of this institutional arrangement. The NEPA was established in 2001 as an Executive Agency under the government of Jamaica's Public Sector Modernization Programme. It comprises the Natural Resources Conservation Authority (NRCA), the Town Planning Authority and the Land Development and Utilization Commission (LDUC). NEPA was established by Cabinet instruction, requiring no new legislation to be passed to create it. One drawback to this approach is that of ensuring that suitable persons are selected by Cabinet for membership on the Council. There are obvious challenges to placing limits on Cabinet's discretion on these matters.

ACTION 2: RATIFY LBS PROTOCOL AND IMPLEMENT ITS PROVISIONS IN NATIONAL LEGISLATION

Pollution of the marine environment from land-based sources poses a grave problem for IWCAM project countries and the several piecemeal legislative attempts to address this growing problem have not produced remedial results. Subject to a comprehensive assessment being made, there is no assurance that all the relevant aspects for IWCAM have been taken into account within those frameworks, particularly as regards relevant MEAs. As a result watershed and coastal areas management is left to the case-by-case

application of sector laws, which may have different and at times conflicting goals. Of all the contemporary instruments on the issue, the LBS Protocol, by providing a mechanism for protecting and controlling pollution of marine resources, is the most directly relevant to Caribbean countries. The Protocol covers in a comprehensive instrument, the essential provisions for addressing this type of pollution. It also emphasizes the need to act at the regional level to address this problem.

The Protocol is also a regional mechanism that assists the United Nations Member States in the Wider Caribbean Region to meet the goals and obligations of two international agreements: the United Nations Convention on the Law of the Sea (UNCLOS) and the Global Plan of Action for the Protection of the Marine Environment from Land-Based Activities (GPA). Despite its relevance to Caribbean programmes for the protection of the marine environment, the level of participation is quite low. Of the 13 IWCAM participating States, to date ratifications have only been received from the Dominican Republic and Trinidad and Tobago.

To promote ratification the IWCAM project should take the following actions -

Table 10

IWCAM Actions to promote LBS Protocol Ratification

Action	Objective
1. Implement an Advocacy programme in participating countries	To introduce Protocol to decision-makers (Ministers, AGs, Foreign Affairs etc.) technocrats, NGOs
2. Prepare Summary and Guidance document on Benefits of Ratification	To simplify the provisions of the Protocol
3. Prepare country model taking existing legislative framework into account	To introduce a country-specific draft legislation
4. Workshops with Industry Sector, NGO's and other stakeholders	To examine the model and understand responsibilities
5. Regional Workshop with legislative draftsmen	To finalise country-specific draft legislation
6. Regional Workshop with responsible Ministers & AGs	To present reports on activities and obtain political commitment.

ACTION 3: ENACT NATIONAL IMPLEMENTING LEGISLATION

For Caribbean countries, except Cuba and the Dominican Republic the mere act ratification of or accession to MEAs is not sufficient for them to be incorporated into national laws. National implementing legislation must be enacted to give the force of law to treaty obligations. The Republic of Haiti is an exception to the requirement for national implementing legislation. In that country international treaties take precedence over national laws and repeal all the laws which are contrary to them. The country however does not adhere either to the provisions of the Cartagena Convention and its three protocols including the LBS Protocol.

The following legislative approaches may be adopted to implement the Protocol-

(i) *Amend sectoral enabling (main) legislation*

IWCAM-related legislation is scattered in several pieces of legislation that are outdated and do not, in a precise manner or adequately, address the key IWCAM issues in a management context. One option that may be exercised can be to amend existing sectoral legislation to incorporate IWCAM issues. There are two obvious limitations to this approach (i) time, material and human resource constraints and (ii) in the absence of an appropriate institutional mechanism, the approach itself could have the effect of reinforcing a fragmented approach to IWCAM.

(ii) *Introduce IWCAM-specific/stand alone legislation*

There is a need for some type of *overarching* legislation sufficiently comprehensive to facilitate the implementation of IWCAM principles. The legislation should include provisions that govern both the terrestrial (including watersheds) area as well as the coastal and marine areas. In terms of powers, the legislation should, *inter alia* –

- establish an institutional mechanism and vest it with the power to coordinate the duties and functions of all entities that discharge responsibilities relevant to IWCAM

- define the scope of this legislation to include both the terrestrial (including watersheds) area as well as the coastal and marine areas. The National Inventory for Cuba recommends this approach. It goes on further to advocate that all the specific norms that are dispersed in other specific sectors be combined in a single juridical instrument for IWCAM. Specifically a new “Law for the sustainable management of marine and terrestrial waters” should be established
- establish the pollution control measures set out in the LBS Protocol.

St. Lucia has also adopted this approach. There is a risk that the provisions of the new law would conflict with the many existing IWCAM-related enactments. Preparing stand-alone legislation will require careful, tedious and lengthy drafting to establish the consequential repeal provisions.

The enactment of national legislation is a process which in the Caribbean context, can be met with lengthy delays, often times to the frustration of government officials who have agonized over the inefficiency of the legislative enactments and are anxious to implement the changes proposed in the new legislation. Indeed the limited human resource and financial resources available to Grenada also highlights the impracticality of proliferating legislation to address IWCAM.

(iii) Enact IWCAM regulations


The powers and jurisdiction of the several enactments relevant to IWCAM are established in broad terms and will require regulations to institute enforcement measures and guarantee their effectiveness. According to convention, regulations are introduced under an enabling (main) Act and the government entity that is responsible for its administration will also be responsible for administering those regulations. Because IWCAM matters are dealt with in several pieces of legislation and are administered by several different entities, the law under which the regulations should be laid needs careful consideration. The Water Pollution Rules of Trinidad and Tobago and the Environmental Quality (Sewage and Industrial Effluents) Regulations, appropriately amended, could provide starting points for the drafting of these regulations.






ACTION 3: ESTABLISH COMPREHENSIVE POLICY ON IWCAM


Overlapping responsibilities between the many different agencies can lead to conflicts in the implementation and enforcement of the different legislative and policy schemes. While some are more focused than others there is a tremendous degree of overlap between several of them...several policies contain slight differences in terms of actions to be taken thereunder, leading to potential conflicts. There is thus a need for greater rationalization of these competing and conflicting policies to arrive at one comprehensive policy balancing all these competing interests’. This state of affairs also exists for the Dominican Republic where contrary to popular practice; there is no explicit policy as regards watershed and coastal areas management. This fragmentation minimizes the impact of legislation which is aimed at integrated management of watersheds and coastal areas. The comparison below demonstrates the multiplicity of policy instruments and interests that govern specific areas.




Table 11




Comparison of IWCAM legislation and policy instruments– Antigua & Barbuda, Saint Lucia and Trinidad & Tobago.

AREA OF FOCUS	TRINIDAD & TOBAGO	SAINT LUCIA	ANTIGUA & BARBUDA
Coastal Areas Management			
<i>Beaches</i> 	The Environmentally Sensitive Area (Matura National Park) Notice, 2004 (LN 323 of 2004)	Beach Protection Act No. 2 of 1967	The Beach Control Act, Cap 45 The Beach Control (Prevention of Danger) Regulations
	National Programme of Action for the Protection of the Coastal and Marine Environment from Land-Based Sources and Activities 2006-2011	Saint Lucia National Trust Act No. 16 of 1975	The Beach Protection Act, Cap. 46
<i>Ports & Marine Areas</i>	The Tobago Region Physical Development Plan Port Authority Act Chap.51:01 s.75		The Port Authority Act, Cap 333 The Port Authority Regulations The Deep Water Harbor (Traffic and Security) Regulations
	Marine Areas (Preservation and		The Marine Areas (Preservation and

AREA OF FOCUS	TRINIDAD & TOBAGO	SAINT LUCIA	ANTIGUA & BARBUDA
	Enhancement) Act Chap. 37:02 Marine Areas (Restricted Area) Order Chap. 37:02		Enhancement) Act Cap. 259 The Marine Areas (Preservation and Enhancement) Regulations The Marine (Restricted Areas) Order
<i>Fisheries</i> 	National Environmental Policy	Fisheries Act No. 10 of 1984	Fisheries Act, 2006 Fisheries Regulations Cap173
Marine Pollution			
		Oil in Navigable Waters Act No. 8 of 1929;	Oil Pollution of Maritime Areas Act, 1995
		Maritime Areas Act No. 6 of 1984	The Maritime Areas Act Cap 260 The Maritime Areas (Closing Lines-Internal Waters) Order
		Marine Pollution Bill* (currently being reviewed – not yet enacted)	The Dumping at Sea Act, Cap. 141
Watersheds			
	Hillside Development in Trinidad and Tobago – Policy and Development Standards, 2006		The Plant Protection Act, Cap. 329 The Plant Protection Regulations
	National Policy and Programmes on Wetland Conservation for Trinidad and Tobago, 2002		The Forestry Act Cap.178 The Forestry Regulations Cap.178
	Forests Act Chap. 66:01 1999 Policy of the Forestry Division Forest (Prohibited Areas) Order Chap. 66:01		The Bush Fires Act, Cap. 62
Sewage Disposal			
	Water and Sewerage Act Chap. 54:40	Litter Act No. 24 of 1983	The Litter Act Cap.250 The Litter (Amendment) Act 2004 The Fixed (Penalty Procedure) (Amendment)

AREA OF FOCUS	TRINIDAD & TOBAGO	SAINT LUCIA	ANTIGUA & BARBUDA
			Regulations, 2005
		Saint Lucia Solid Waste Management Authority Act No. 20 of 1996	National Solid Waste Management Authority Act, 1995 The National Solid Waste Management Authority (Amendment) Act, 2005 Solid Waste Management (Haulage and Tipping Fees) Regulations, 1996
		Water and Sewerage Authority Act No. 13 of 1999;	
		Public Health (Sewage and Drainage) Act No. 40 of 1953;	
Land Use			
	Chaguaramas Development Authority Act, Chap. 35:02		
	National Physical Development Plan – Trinidad and Tobago, 1982	Crown Lands Act No. 7 of 1945	
	The Tobago Region Physical Development Plan, 1991	Physical Planning and Development Act No. 29 of 2001;	The Physical Planning Act, 2003 Subsidiary Legislation under Land Development and Control Regulations, 1996
	National Action Plan to Combat Land Degradation in Trinidad and Tobago 2006 – 2020	Land Conservation and Improvement Act No. 10 of 1992	
	State Lands Act Chap. 57:01		
	Land Regulations, 1918 and the Crown Lands (State Lands) Forest Produce Rules, 1937		
Public Works and Transport			

AREA OF FOCUS	TRINIDAD & TOBAGO	SAINT LUCIA	ANTIGUA & BARBUDA
	Highways Act Chap. 48:01 s. 31(1)		The Public Utilities Act, Cap. 359 The Public Works and Road Act, Cap. 360 The Public Works and Road Regulations
Environment (General)			
	Environmentally Sensitive Areas Rules, 2001 (LN 37 of 2001)	Conservation Authority Act No. 16 of 1999;	The National Parks Act. Cap. 290 The National Parks (Amendment) Acts, 1995, 2000,2004 The National Parks (Nelson's Dockyard Parking) Regulations The National Parks (Nelson's Dockyard) Order
	Environmental Management Act, 2000	Forest, Soil and Water Conservation Act No. 6 of 1945;	The Wild Birds Protection Act, Cap. 472
	The Environmentally Sensitive Areas (Nariva Swamp Managed Resource Protected Area) Notice, 2006 (LN 334 of 2006)		
	Certificate of Environmental Clearance (Designated Activities) Order, 2001 (LN 103 of 2001)	Wildlife Protection Act No. 9 of 1980	The Turtle Act, Cap. 446
	Certificate of Environmental Clearance Rules, 2001 (LN 104 of 2001)		The Protection of Animals Act, Cap 349
	Certificate of Environmental Clearance (Fees and Charges) Regulations, 2001 (LN 91 of 2001)		
<i>Protection of Vegetation</i> 	Municipal Corporations Act No. 21 of 1990 s.132		
	Summary Offences Chap.11:02 s.19		
	Malicious Damage Chap.11		
<i>Health</i>	Public Health Ordinance Ch. 12. No. 4 (1950 Laws)	Public Health Act No. 8 of 1975	The Public Health Act, Cap. 353

AREA OF FOCUS	TRINIDAD & TOBAGO	SAINT LUCIA	ANTIGUA & BARBUDA
			
<i>Pesticide Management</i> 			The Pesticides Control Act, Cap. 325
<i>Water Resources Management</i> 	National Water Resource Management Policy (September 2003)		
	Water Pollution Rules, 2001 as amended by the Water Pollution (Amendment) Rules, 2006		
	National Environmental Policy, 2005		
	Vision 2020 Draft National Strategic Plan, 2005		
	Vision 2020 Sub-Committee Report (Sector Strategic Plan) for the Environment		

ACTION 4: BUILD CAPACITY FOR IWCAM

The effectiveness of IWCAM will on implementation and enforcement. The inadequate human resource capacity – specifically, the lack of adequately trained manpower to carry out the functions needed for integrated watershed and coastal areas management, and a lack of training in the following areas –

- environmental impact assessments;
- water quality sampling and assessments
 - enforcement and conduct of prosecutions in court
 - awareness of environmental matters by judiciary international environmental law.

With regard to programmes on international environmental law the following activities may be undertaken –

- (e) Develop a user-friendly web-based legal resource centre and network of enquiry to assess, exchange information and experiences and promote international environmental law including aspects pertinent to the implementation and enforcement of MEAs;
- (f) Carry out legal research and experts (including non-lawyers) workshops to develop a series of legal briefs and capacity-building manuals on legal developments in the field of pollution control;
- (g) Undertake capacity building and host dialogues on legal aspects of pollution control;
- (h) Encourage a greater involvement of academic, legal, professional and judicial associations (could be coordinated with UNEP Environmental Justice Programmes) in the development and implementation of international environmental law.

ACTION 5: BETTER ACCOUNTABILITY, COMPLIANCE AND ENFORCEMENT

The most important objective for pollution control is to utilize those resources currently in a manner that would produce the maximum impact. The laws governing water pollution must be enforced in order meet that objective. Historically enforcement has not been very effective in GEF-IWCAM countries for a variety of reasons that include outdated fines and penalties, shortage of enforcement personnel, lack of training and political interference all of which are conducted under a command-and control strategy. These factors prompt the need to introduce alternative methods to achieve the desired results. The following market and technology-based approaches are recommended as enforcement alternatives -

- ***Introduce user charges/permits*** which would allow dischargers discretion in the choice of pollution abatement techniques to meet effluent standards;
- ***Reliance on risk-based enforcement*** whereby significant violators that present the greatest risk to human health and the environment will be targeted. This will require the development of tools that allow analysis of risk as well as patterns of violations among

corporations and facilities within a particular sector, training in risk-based enforcement and making this information publicly available.

- ***Compliance incentives for small businesses.*** Responsible small businesses who volunteer to comply with water pollution regulations should be given access to compliance assistance without fear of penalties. They may also be given time to correct violations.
- ***Incentives for auditing, disclosure and correction.*** Reduced penalties for companies that disclose and promptly correct violations should be afforded. This should not be available for repeat offenders and those actions amounting to reckless endangerment.
- ***Third party audits for industry compliance.*** Independent, certified, private sector firms should be engaged to audit industry performance. This will assure the public that discharge requirements are being met and violations promptly disclosed and corrected.
- ***Multimedia permitting.*** Many facilities must obtain multiple discharge permits in order to operate. An applicant for a water pollution permit should be granted a permit for other types of releases simultaneously (where applicable). This will encourage pollution prevention for all media, minimize duplication and delay and allow facility managers to use lowest-cost options.
- ***Awards for compliance.*** National awards should be developed for dischargers that design and apply new technologies that benefit water quality.
- ***Effluent trading.*** Under an effluent trading programme, a discharger who reduces pollution below the minimum level required to meet water quality standards can sell its excess pollution reductions to other dischargers within the same receiving environment. This will create an economic incentive for dischargers to go beyond minimum pollution reductions and encourage pollution prevention. Trading programs can be established also for non-point sources and indirect dischargers (facilities that discharge into a municipal sewage treatment plant)
- ***Introduce a ticket system, compounding offences and the use administrative measures to resolve breaches of the relative law.***
- ***Use education instead of regulation.*** All stakeholders including industry sector should be involved in the making of regulations and

in developing agreements on how best to regulate.

- ***Develop Enforcement Policy.*** This will establish the principles on which the Department (or other entity) will make its enforcement and prosecution decisions thereby promoting consistency in enforcement and minimizing political interference.

ACTION 6: BUILD STAKEHOLDER INVOLVEMENT

While much of the modern day environmental laws have recognized the contribution that stakeholder involvement can make in the prevention and enforcement of environmental laws, much of the legislation related to watershed and coastal areas do not incorporate management tools such as public consultations within their framework. Increased stakeholder involvement and sensitization will promote a successful management program. The majority of the Acts cited have no role for the local communities.

Programmes should be developed and implemented to train and sensitize communities and all stakeholders including judicial personnel on the value of environmental quality to the economy and well-being of the country.

ACTION 7: PROMOTE REGIONAL LINKAGES

Overburdened government officials in IWCAM project countries can benefit from the sharing of information, the transfer of resource management skills, problem-solving solutions and best practices among themselves as a responsive mechanism to staff shortages and expertise. Cuba has in its legislative practice mandated agencies that discharge responsibilities in respect of the marine environment to collaborate with each other. There is much opportunity for the sharing of information etc. via electronic media. The United Nations websites should be expanded to facilitate exchanges regionally and globally on all matters pertaining to IWCAM.

ACTION 8: ESTABLISH TECHNICAL PROGRAMMES

Putting well-focused programmes for watershed and coastal areas management is equally important as establishing an appropriate legal and institutional arrangement. The quantitative and systemic aspects of marine pollution are well documented for the WCR. Key programmes to address them should consider -

1. Determining assimilative capacity of nearshore zones;
2. Identifying bio-indicators or other methods of monitoring the assimilative capacity of these zones (early warning indicators);
3. On carbonate beaches monitor for long-term changes to beach sand quantity (hopefully this outcome can be avoided);
4. Based on (1) and 2), establish maximum loads of various pollutants - and manage watersheds to meet these targets through land management, enforcement of best practices and regulating direct discharges;
5. There is a need to monitor both pollutant loading in-river and to monitor water quality and health in order to monitor and evaluate progress in defining and maintaining sustainable levels of development in watersheds on the land-side. This will require a well-organized and accessible data and information management system.

Individually, the focus on the watershed side is to have in place the policy, legislation, management/planning tools, enforcement, monitoring and information management to achieve the assimilative capacity targets associated with water quality loadings to coastal areas, and ultimately healthy coastal (and watershed) ecosystems. On the coastal side the need is related to: a) establishing assimilative capacity; and b) monitoring key indicators (such as coral health and beach width for carbonate beaches). For coastal management (a) would likely be achieved partly through (b). In some locations without coral reefs, the indicator may be sediment quality. Of course, there is a need on the coastal side to be managing a host of other possible impacts to the water quality and coral health in the coastal area including direct discharges to the sea from outfalls, spills, damage/destruction to corals, over-fishing, etc.

Communication between watershed and coastal managers relates to the targets set and comparing measurements on actual loads and measurements/bio-indicators in the coastal zone. It is likely the setting of loading targets and the evaluation of assimilative capacity will be an iterative process.

19.2 Conclusions

Pollution and degradation in watersheds, the coastal zone and the associated ecosystems from a variety of land-based sources which include industrial development activities, tourism development activities, urban, domestic, agricultural activities and oil is common to most of the Caribbean territories. Run-off from fertilizers and pesticides are also major sources of pollution in the Caribbean, with fertilizer consumption in some islands being extremely high. The tourism industry, hotels and marinas generate sewage, solid and liquid

wastes; while the shipping and marine transport sector generates oil, solid and liquid wastes. Heavy industry generates oil, liquid wastes and heavy metals while domestic/municipal waste products include sewage, solid and liquid wastes. This myriad of effluents impacts the watershed areas including rivers as well as the coastal and marine ecosystems. We must therefore influence as far as possible what happens in our watersheds and coastal areas by assessing the impact of where development of each and every kind takes place, where crops are grown and oversee agricultural practices, contemplate where we put road surfaces, drains, culverts, embankments and bridges.

The coastal and marine resources of the Caribbean are integral to the economy and sustainable development of Caribbean countries. They are however constantly being pressured by the competing uses and the impacts of development activities. Because policies designed to protect the marine environment and its resources must address problems on land, they are by no means easy to formulate.

This consultancy brings together the legal, policy and institutional framework for the countries participating in the IWCAM project. Whilst there may be deficiencies in the information provided, the problems in the area are now well known and do not require further study before concrete actions to remedy them are taken. The report proposes options for an appropriate institutional approach that could be put in place. While there are numerous pieces of legislation that touch on IWCAM issues they are far from comprehensive. The LBS Protocol provides a substantial and comprehensive framework for any legislation addressing IWCAM. Caribbean countries should ratify the Protocol and enact national legislation to implement its provisions in any form that is recommended in this report. This recommendation is also applicable for the Republic of Haiti notwithstanding its monist traditional practice as regards international law.

Achieving sustainable development demands that new legal and institutional mechanisms, methods and models be formulated. The National Legislation Inventories lists and describes the legislation, institutions and policies which are relevant (both directly and indirectly) to the management of watershed and coastal areas and the prevention, reduction and control of pollution affecting those areas in their respective countries. It is hoped that this report provides the guidance needed for countries on IWCAM and make a contribution to this important regional effort.

Appendix I

References

- 1) An Eastern Caribbean Parks and Protected Areas Bibliography.
http://www.aoml.noaa.gov/general/lib/CREWS/Cleo/St.%20Croix/Salt_river144.pdf
- 2) Beauchamps, J. M. 1997. pollution et sédimentation dans la baie de Port-au-Prince. Econet 3(1): 1-4.
- 3) CEP Technical Report #33
- 4) Clinton, B. and Gore, A., “Reinventing Environmental Regulation”, March 16, 1995
- 5) Elroy, J.L., Potter, B., and Towle, E., “Challenges for Sustainable Development in Small Caribbean Islands”, Ch. 21 pp. 300
- 6) IWCAM Country Reports: http://www.iwcam.org/country_pages
- 7) Ly.1. 2003. Avant- propos de politique générale pour une gestion intégrée de la Zone côtière du milieu marin. mde/bio/atn/sf-5859-ha- Port-au-Prince. 27p.
- 8) Marine Turtle Fisheries in the UK Overseas Territories of the Caribbean: Domestic Legislation and the Requirements of Multilateral Agreements
<http://journalonline.tandf.co.uk/link.asp?id=G855W05636483459>
- 9) Marndr. 1999. politique du mardndr pour la gestion des bassins versants
- 10) Marndr/sdrt. Port-au-Prince. 22p.

- 11) Ministère de l'agriculture des ressources naturelles et du développement rural. 2000. Liste et cartes des bassins versants des Directions Départementales Agricoles et Sous-Directions Départementales Agricoles. marndr/sdri- Port-au-Prince. 5p.
- 12) Ministère de l'environnement. 1999. plan d'action pour L'Environnement. MDE. Port-au-Prince.80p.
- 13) Salm, r.o, clark, j.r et sircla, E. 2000. Marine and Coastal Protected Area. A guide for planners and managers, IUCN. Washington DC xxi + 371 pp
- 14) Sustainable Development of Biodiversity Resources in the Eastern Caribbean: Triple Alliances and Policy Implementation <http://journalonline.tandf.co.uk/link.asp?id=QQU091135W1T1676>
- 15) Theard, R. 1999. Aspects Législatifs et Réglementaire de la Gestion des Bassins Versants. Rapport de synthèse. Marndr /mde Port-au-Prince. 54p. + Annexes.
- 16) Theard, R.1999. Aspects Législatifs et Réglementaire de la Gestion des Bassins Versants. Recueil de textes législatifs et réglementaires Sur la gestion des bassins versants. Marndr /mde Port-au-Prince. 200p.
- 17) The Law and Policy of Biodiversity Conservation in the Caribbean: Cutting a Gordian Knot <http://journalonline.tandf.co.uk/link.asp?id=N858436328196475>
- 18) The SPAW Protocol and Caribbean Conservation: Can a Regional MEA Advance a Progressive Conservation Agenda? <http://journalonline.tandf.co.uk/link.asp?id=U223K6T537063142>
- 19) Trends In Freshwater and Coastal Area Resources in the Small Island Developing States of the Caribbean http://www.iwcam.org/information/reference_documents/Synthesis.doc/view
- 20) Unesco. 1998 . Les Côtes d'haïti . Evaluation des Ressources et impératif de gestion. Résultat d'un séminaire et des activités de gestion correspondantes. Dossiers régions côtières et petites îles 2. Unesco. Paris. Vi 32pp.
- 21) Victor, J.A. 1995. Code des Lois Haïtiennes de l'Environnement pnud/ecmu/hai/92? 001. Port-au-Prince, 324p.

22) Victor, J.A. 1997. Marpol. Une convention internationale sur la pollution marine. EcoNet 3(1) L 2:5.

23) Wenner, L.M., "Pollution Control: Implementation Alternatives" (citation unavailable)

24) Wilcox, E. 2003. projet de création d'un parc marin aux Arcadins et de développement communautaire avec les pêcheurs de Lully. WWF washington DC. 13 p.

25) Woods, C et Ottennwalder, J.A. 1992. The natural history of Southern Haïti. University of Florida. Gainesvilles 211 p.

Appendix II

SOURCE OF LAWS/ LEGISLATIVE AND POLICY INSTRUMENTS AND WHERE THEY CAN BE OBTAINED

Grenada

1 **Laws of Grenada 1990 (Continuous Revised Laws of Grenada 1990 Volume II –**

Volume X)

Volume II - CAP 1-66

Volume III - CAP 67-108

Volume IV - CAP 109-162

Volume V - CAP 163-218

Volume VI - CAP 219-284

Volume VII - CAP 285-344

Volume VIII (Subsidiary) - CAP 1-184

Volume IX (Subsidiary) - CAP 188-313

Volume X (Subsidiary) - CAP 314-344

2 **Laws of Grenada 1991 – 1999, individual years published by the Government printer contains: -**

(1) Principal legislation (ordinances) Acts

(2) Subsidiary legislation (orders, proclamations, rules, regulations etc.)

- (3) Imperial legislation (applicable to the State passed during the year)

St. Kitts and Nevis

1. **The Saint Christopher and Nevis Constitution Order 1983**
2. **National Conservation and Environmental Protection Act No. 5 of 1987**
 - a. (Amendment) No. 12 of 1996
 - b. (Amendment) No. 21 of 2001
 - i. National Conservation and Environmental Protection Act, 1987 (Appointed day) Notice No. 14 of 1989
 - ii. 26/91
 - iii. 11/91
 - iv. 44/83
 - v. 6/2004
3. **Fisheries Act No. 4 of 1984**
 - a. Fisheries (Amendment) Act No. 2 of 1992
 - b. Fisheries (Amendment) Act No. 10 of 1997
 - c. Fisheries Act (No. 4 of 1984) (Appointed Day) Order No. 24 of 1992
 - d. Fisheries Regulations No. 11 of 1995
 - e. Fisheries Act Cap 91 (Section 42 of No. 4 of 1984)

- f. Turtle Act Cap 99 (Section 42 of No. 4 of 1984)
- 4. **Development Control and Planning Act No. 14 of 2000**
 - a. Development Control and Planning (Amendment) Act No. 7 of 2002.
- 5. **Litter (Abatement) Act No. 8 of 1989**
 - a. Amended 22/2000
 - b. Amended 6/2001
 - c. 23/90
- 6. **Maritime Areas Act No. 3 of 1984**
- 7. **Watercourses and Waterworks Ordinance Cap. 185**
 - a. Amended 8/62
 - b. Amended 4/74 (by implication)
 - c. Amended 8/86 (by implication/ “ordinance” to “Act”)
- 8. **National Disaster Management Act No. 5 of 1998**
 - a. Commencement 12/99
- 9. **South-East Peninsula Land Development and Conservation Act No. 12 of 1986**
 - a. South-East Peninsula Land Development and Conservation Act (Appointed Day) Notice No. 30 of 1986
- 10. **Frigate Bay Development Corporation Act No. 13 of 1972**
 - a. Amended 9/75
 - b. Commencement 16/73

11. **Public Health Act No. 22 of 1969**

- a. Amended 7/76
- b. Amended 5/2001
- c. Commencement 36/70

(Hard copies of all the legislation is available at the Attorney General's Chambers of St. Kitts and Nevis)

LEGISLATION/POLICY INSTRUMENT	CONTACT PERSONS
<u>Water Services Department (Ministry of Works and Public Utilities)</u>	Permanent Secretary - Mr. Peets (869) 466 6119 or (869) 467 1581/ 1582
<u>Ministry of Sustainable Development, Department of Physical Planning and Environment.</u>	Permanent Secretary - Hilary Hazel (869) 467 1065
Ministry of Agriculture, Department of Agriculture	Permanent Secretary - Dr Samuel Morton- Anthony (869) 467 1016 /1017 or (869) 465 8045
Ministry of Agriculture, Nevis Island Administration, Department of Physical Planning and Environment.	Permanent Secretary – Pearliecan Wilkin (869) 469 5641
St. Kitts and Nevis Solid Waste Management Corporation	(869) 467 1027 or (869) 4659507

Fisheries Management Unit, Nevis island Assembly.	Permanent Secretary – Pearliecan Wilkin (869) 469 5521 ext. 2088/ 2161
The Saint Christopher Heritage Society	(869) 465 5584

Trinidad and Tobago

LEGISLATION/POLICY INSTRUMENT	WHERE IT CAN BE OBTAINED
Environmental Management Act, 2000	www.ttenvironmentalcommission.org
Certificate of Environmental Clearance Rules, 2001 (LN 104 of 2001)	www.ttenvironmentalcommission.org
Certificate of Environmental Clearance (Designated Activities) Order, 2001 (LN 103 of 2001)	www.ttenvironmentalcommission.org
Certificate of Environmental Clearance (Fees and Charges) Regulations, 2001 (LN 91 of 2001)	www.ttenvironmentalcommission.org
Environmentally Sensitive Areas Rules, 2001 (LN 37 of 2001)	www.ttenvironmentalcommission.org
Water Pollution Rules, 2001 as amended by the Water Pollution (Amendment) Rules, 2006	www.ttenvironmentalcommission.org
The Environmentally Sensitive Area (Matura National Park) Notice, 2004 (LN 323 of 2004)	The Government Printer 2 – 4 Victoria Avenue, Woodbrook, Trinidad, West Indies Tel 868-625-4139
The Environmentally Sensitive Areas (Nariva Swamp Managed Resource Protected Area) Notice, 2006 (LN 334 of 2006)	
Forests Act Chap. 66:01	
Forest (Prohibited Areas) Order Chap. 66:01	
Chaguaramas Development Authority Act, Chap. 35:02	

Port Authority Act Chap.51:01	
State Lands Act Chap. 57:01	
Municipal Corporations Act	
Summary Offences Chap.11:02	
Highways Act Chap. 48:01)	
Malicious Damage Chap.11:06	
Agricultural Fires act Chap. 63:02	The Government Printer 2 – 4 Victoria Avenue, Woodbrook, Trinidad, West Indies Tel 868-625-4139
Public Health Ordinance Ch. 12. No. 4 (1950 Laws)	
Water and Sewerage Act Chap. 54:40	
Marine Areas (Preservation and Enhancement) Act Chap. 37:02	
Marine Areas (Restricted Area) Order Chap. 37:02	
National Environmental Policy, 2005	www.ema.co.tt
Vision 2020 Draft National Strategic Plan, 2005	http://vision2020.info.tt/
Vision 2020 Sub-Committee Report (Sector Strategic Plan) for the Environment	http://vision2020.info.tt/
National Programme of Action for the Protection of the Coastal and Marine Environment from Land-Based Sources and Activities 2006-2011	Ministry of Public Utilities and the Environment, 16 – 18 Sackville Street, Port of Spain, Trinidad, West Indies Tel 868-625-6083
National Action Plan to Combat Land Degradation in Trinidad and Tobago 2006 - 2020	
National Physical Development Plan – Trinidad and Tobago, 1982	Town and Country Planning Division, Ministry of Planning and Development,
The Tobago Region Physical Development Plan, 1991	

Hillside Development in Trinidad and Tobago – Policy and Development Standards, 2006	Eric Williams Finance Building, Independence Square, Port of Spain, Trinidad, West Indies Tel: 868-627-9700
National Water Resource Management Policy (September 2003)	Water Resource Management Unit, Water and Sewerage Authority, Head Office, Farm Road, Valsayn, St. Joseph, Trinidad, West Indies Tel: 868-627-9700
National Policy and Programmes on Wetland Conservation for Trinidad and Tobago, 2002	Forestry Division, Head Office, Long Circular Road, St. James, Trinidad, West Indies Tel: 868-622-5214
1999 Policy of the Forestry Division	

