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EXECUTIVE SUMMARY

For the purpose of this convention, St. Vincent and the Grenadines will focus on land degradation as oppose to the extreme case of desertification. Because of its equatorial location and its legal/political history, some indigenous forest cover still remains. How long this forest would be able to supply the needs of Vincentians will depend on the extent to which the UN Convention to Combat Desertification and Drought is implemented. Loss of the forest translates into loss of water, biological diversity and sustainable livelihood. For this reason, much of this first report is centered on deforestation. The report is not exhaustive or conclusive but rather instructive for life in St. Vincent and the Grenadines.

Both new and existing economic developmental activities have severely impacted forest cover in St. Vincent in a negative way. Unemployment, poverty and the desire for extravagant life styles have compromise the integrity of the forest and threaten Vincentian existence.

The smaller islands of the Grenadines are less fertile and semi-arid. These islands are therefore prone to desertification. Traditional life style practices have not been kind to these islands and although they boast of white sand beaches, an asset to the tourism industry, their development remains an uncertainty. Lack of surface water limits development to the extent that life on these islands revolves around the fragile coastal resources.

The experimental approach to environmental resource management sets the National Environmental Advisory Board at the center of management. The body monitors environmental activities and recommend policy direction and alternative approaches. There are several practical applications to this approach. Most important, it brings a holistic approach to environmental management rather than the piece-wise approach characteristic of sectoral management. This management strategy is supportive of synergies and helps to strengthen overarching themes.

The various forest management and restoration projects shared around the Caribbean is evidence of an awakening of consciousness in the region. The departments of the various government ministries in the Eastern Caribbean charged with the management of the forest are concerned with the loss of biodiversity and the degradation associated with improper use and inappropriate agricultural technologies employed in the watershed. Wanton destruction of forest is manifested in the many sediment plumes extending for miles offshore. The land slides which occur with disastrous effects such as the Gibson Corner (southwestern St. Vincent) experience speaks of unsound human interactions with the environment.

Public awareness must be encouraged at all levels of the society through consultative dialogue and discussion of the issues. The awareness must stretch beyond knowledge to an active sharing of the regulatory function of management.

Any national action plan must strive to address the critical issues of:

- Soil conservation
- Improved Agricultural Technology
- Land tenure
- Reafforestation
- Support for NGOs and
- Land Use Planning.

Such an effort would not be devoid of challenges and must therefore be underpinned by a commitment to reduce and mitigate land degradation. The approach does not necessarily ensure sustainability but reflects considerable optimism and the belief that land degradation can be traded for a productive lifestyle.

LIST OF ABBREVIATIONS

CARICOM	Caribbean Community
CBD	Convention on Biological Diversity
CBO	Community Based Organization
CDO	Canouan Development Organization
CIDA	Canadian International Development Agency
DFID	Department for International Development
EC	East Caribbean
ENCAP D	Environment Capacity Development
GEF	Global Environmental Facility
GDP	Gross Domestic Product
GIS	Government Information Service
ISM	Island Systems Management
JEMS	JEMS Environmental Management Services
MEA	Multilateral Environmental Agreement
NEAB	National Environmental Advisory Board
NEAP	National Environmental Action Plan
NGO	Non-Government Organization
NRMU	Natural Resources Management Unit
OECS	Organization of East Caribbean States
OFAOCC	Organization for the Advancement of the Carib Community
POA	Programme of Action
SVG	St. Vincent and the Grenadines
UNFCCC	United Nations Framework Convention on Climate Change

1.1 NATIONAL BACKGROUND INFORMATION

1.1.1 PHYSICAL AND DEMIGRAPHIC CONTEXT

St. Vincent and the Grenadines consists of mainland St. Vincent (345km²) and a number of smaller islands in the northern Grenadines (44km²), which include the islands of Bequia, Mustique, Canouan, Union Island, Palm Island and Petit St. Vincent, plus 28 smaller islets. The islands form part of the Winward Islands group, and are located between St. Lucia to the north and Grenada to the south, Barbados lies 100 miles to the west. St. Vincent is situated at 13⁰ 15'N latitude and 60⁰ 56'W longitude. The main island is 18 miles long and 11 miles at its widest point. Kingstown, the capital, is located on the southwest coast of the island and is the seat of Government and the main commercial centre. St. Vincent and the Grenadines is a member of both the Organisation of Eastern Caribbean States (OECS) and the Caribbean Community (CARICOM).

1.1.2 CLIMATE

St. Vincent and the Grenadines has a tropical climate with temperatures ranging from approximately 18⁰ C to 33⁰ C as recorded at the meteorological office at the E.T. Joshua airport. Temperatures tend to be cooler at higher elevations in the interior of the island. Annual precipitation varies from 150 cm in the extreme south to 381cm in the interior. As a result, there are many climatic zones on mainland St. Vincent. The driest season is from January to April.

1.1.3 ENVIRONMENT

The island encompasses 345 square kilometers with approximately 105 kilometers of coastline. St. Vincent is a mountainous, volcanic island rising to 1234 meters (4000ft) at the cone of La Soufriere. The island is characterised by rugged terrain with wet upland forests. Some of its valleys are occupied by rivers flowing to black sand beaches which reflect their volcanic origin. The island has significant stands of tropical rain forests, some of which are primary forests. The primary rain forest provides the habitat for the endangered St. Vincent parrot as well as other wildlife. In contrast, the Grenadines consist of low dry hills, white sandy beaches and clear blue waters with extensive coral reefs.

1.1.4 PEOPLE

St. Vincent and the Grenadines has an estimated population of 111,810. Of that total, 103,375 residents (92.5% of the total) live on mainland St. Vincent. The remaining 8,435 (7.5%) live on the Grenadines. The population density is currently 285 per km². The population is predominantly Afro-West Indian. There is also a large number of East Indians and some remnants of the indigenous Carib Ameridian population. English is the official language of the country, while an English vernacular/creole is spoken as a local language by most of the population.

The population is young with 60 percent being under the age of 20 years. The average life expectancy is 69 years for males and 72 years for females. Improvements in nutrition, sanitation, immunization, and family planning have contributed to lower mortality rates and increased life expectancy. Since 1970 the infant mortality rate has dropped from 145.0 to 13.7 per thousand births, while the rate of natural increase has been reduced from 34.1 to approximately 18.9 percent of the total population.

1.1.5 ECONOMY

St. Vincent and the Grenadines remains strongly dependent on agriculture for its economic base. Although the share of Gross Domestic Product (GDP) accounted for by agriculture has decline from 21.2 percent in 1990 to 12.6 in 1996, agriculture continues to employ about 66% of the workforce. The fertility of the island's soils together with ample rainfall supports a wide variety of agriculture crops of which banana is the most important cash crop. Other crops such as sweet potatoes, eddoes, tannias, yams and coconuts are also produced.

Agro-processing, manufacturing and tourism have also contributed significantly to the growth of the economy. Light manufacturing, including the production of textiles, packaging, metal and plastic products and electronic components, accounts for approximately 10% of the GDP. Tourism contributes about 2-3% of the GDP.

The economy has grown steadily at an average of 13.3% between 1970 and 1990. In 1998, the Gross Domestic product (GDP) amounted to \$630.95 Million (EC). Of that figure, 12.6% was derived from agriculture, 8.5 percent from manufacturing, 15.4 from trade, and 17.4 percent from government services. The annual per capita income is currently \$5,673 (EC) {US\$2093}. The unemployment figure is estimated at an unofficial 22.0 percent, while inflation is 3.6 percent.

1.1.6 GOVERNMENT

On October 27,1979, the island gained political independence from Great Britain and now has a democratically elected government and Prime Minister. The Governor general who is nominated by the Prime Minister is appointed by and represents the Crown.

1.1.7 EDUCATION

Education in St. Vincent and the Grenadines is modeled off the British system and is therefore of a very high standard. However, education is not compulsory and at present the literacy rate stands at approximately 80-85%.

1.2 POLITICAL / GEOGRAPHICAL STRUCTURE OF THE COUNTRY

The Grenadine islands are small and depend almost entirely on the coastal environment for their existence. These islands experience a much drier climate than St. Vincent and as a result do not produce many agriculture crops. Instead, tourism is the major revenue earner for these islands.

The coastal environment of these islands is under great stress from the various life supporting activities which they facilitate. Bit by bit, the coastal environment is being degraded to make way for new hotels and/or beach houses. Development cannot be stopped. However, before major development takes place, environmental concerns that should be addressed. Environmental Impact Assessment should become a prerequisite for such developments.

The coastal environment of Ashton (Union Island) is far more natural than that of Clifton. Ashton has relatively large areas of coastal vegetation, some of which appears to be very healthy. There is, however, a lack of vegetation in close proximity to the built up area of the coastline. The lack of vegetation could be attributed to its removal for coastal development.

Mangroves are very important coastal habitats. They protect the coral reefs by acting as filters for sediment and other land-based pollutants. However, the long-term value of mangroves is often overlooked. Union Island is a perfect example of this. In Union Island, mangrove forests have been removed to make way for coastal development due to economic pressure.

2.1 RESPONDING TO THE UNCCD

2.1.1 SIGNING THE UNCCD

St. Vincent and the Grenadines became a signatory to the UNCCD in July 1998. As with most other United Nations environmental conventions signed or ratified by St. Vincent and the Grenadines, the office of the Environmental Services Coordinator in the Ministry of Health and the Environment was designated technical focal point. In this capacity, the Environmental Services Coordinator is responsible for coordinating all aspects of the UNCCD at the local and regional levels as well as liaising with the Convention Secretariat.

2.1.2 THE NATIONAL ENVIRONMENTAL ADVISORY BOARD

In the design and execution of work plans as well as monitoring and evaluation, the focal point is ably assisted by the National Environmental Advisory Board. The Advisory Board is a multidisciplinary stakeholder body representing both the government and the NGO sectors. Members of the board are:

- The Environmental Services Coordinator
- The Town Planner
- The Chief Engineer
- The President of the National Youth Council
- The Chief Environmental Health Officer
- The Director of Fisheries
- The Director of Forestry
- The Chief Agriculture Officer
- A representative of the National Trust
- A representative of the NGO Community
- The Director of Community Development
- The Solicitor General

2.1.3 THE NATIONAL ENVIRONMENTAL ACTION PLAN

Environmental priorities for St. Vincent and the Grenadines are contained in the National Environmental Action Plan (NEAP). The priorities in the document represent the local response to the Small Island Developing States (SIDS) Programme of Action (POA), which captured the spirit of Agenda 21. The issues of the NEAP are therefore local reflections of global concerns. The priority areas of the NEAP include:

- Deforestation
- Land Use Planning
- Management of Water Resources

All of which are directly related to land degradation.

2.1.4 INTEREST GROUPS

Administrative developments often move ahead of legislative ones in St. Vincent and the Grenadines. Consequently even without the enactment of local legislation to address issues related to UNCCD, institutional arrangement to address the issues was established. The institutional arrangement identifies the key stakeholders and the current actors. It also requires the development of a draft national strategy as a vehicle for the implementation of the programme.

Current actors in this programme include the Ministry of Health and the Environment, the Ministry of Agriculture (Fisheries and Forestry, Farming) and the National Farmers' Union. This is by no means an exhaustive list of stakeholders nor is it the most desirable. It is, however, a list of the actors that are currently involved in the fight against land degradation. The draft strategy envisioned a three tier hierarchy of players namely:

- The NEAB which advises the Minister
- A technical group
- The stakeholders

Some forestry officers and agricultural extension officers currently fill the role of the technical group. However, no public education programme has yet been developed for CCD hence national awareness is currently at an unacceptable level. The proposed administrative mechanism is not public knowledge. This situation needs to be addressed as a matter of urgency.

2.2.1 WATER RESOURCES

The island state of St. Vincent and the Grenadines exhibit remarkable divergence within its narrow geographic belt. This divergence gives rise of microclimatic zones that are unique and distinct in many ways. The formation and geology of the Grenadines make no provision for stream formation. Additionally, the size of the individual land mass limits the amount of water that can be collected from rainfall, consequently some of these islands are uninhabited while others support only sparse, stunted vegetation and limited biodiversity. For most of the year, the inhabited islands (Bequia, Union Island, Canouan, Mustique and Palm Island) either import potable water or rely on desalination plants.

For mainland St. Vincent, however, the situation is different. The annual rainfall of between 150cm and 380cm seems more than adequate to meet the needs of the island. In earlier times, much of this water percolated through permeable volcanic soil to feed the over twenty (20) streams and rivers that drain the slopes of St. Vincent. This apparent abundance of water created a false sense of security to the extent that the issue of desertification seemed distant and remote, even laughable. However, the events of the last twenty years have cast serious doubts in the minds of some Vincentians about water safety and land productivity. Despite the consistency of the rainfall, several streams and

rivers are now dry most of the year while the normal flow volume of the major ones have decreased significantly.

2.2.2 AGRICULTURE, CONSTRUCTION AND WATER

In the area of agriculture, crop yields have declined in some areas to the extent that an irrigation project has been implemented to support the banana industry. There are concerns about the need to change altitudinal elevation to maintain the production of some crops. Such elevation would translate into deforestation. Currently, agriculture is limited by the Crown Land Act to areas below the 1000 foot contour. Crown Land Regulations (no.25) (1993) seeks to protect water shed and states that the tenant must agree to cultivate the tenancy in a proper and husband-like manner.... He shall take steps to "carry out soil and water conservation measures and to maintain all types of control bunds and/or barriers which occur within the area.." Adherence to this stipulation requires vigilance on the part of the various departments in the Ministry of Agriculture.

In the area of construction, land clearing and subsequent coverage by impermeable building materials (asphalt, concrete, galvanized iron etc.) reduce soil penetration while increasing surface run off. Consequently, the high surface run off has become erosive and leads to land degradation and coastal flooding.

2.2.3 NEED FOR NATIONAL AWARENESS; PRIORITY AREAS AND PROPOSED ACTION

The aforementioned issues point to the need to arrest land degradation in the interest of sustainability. It should be noted that currently St. Vincent and the Grenadines has no area that can truly be classified as desert, but that desertification is the final stage of a process current at work in St. Vincent and the Grenadines. The UNCCD therefore provides an excellent opportunity for SVG to address land degradation issues. It calls attention to the current state of water resources, soil fertility, institutional capacity and technological development. Although to some extent these issues are addressed at the sectoral level, a national strategy has never been formulated. The issue has, therefore, remained sectoral rather than national. The scenario became very evident during the data gathering exercise for this report. As a result, the decision was taken to seek assistance from the secretariat of the UNCCD to develop a national awareness programme.

The awareness programme will seek to:

- Inform civil society
- Instruct stakeholders and
- Prescribe directives for policy makers

In addressing land degradation, the priorities to be considered are agricultural practices, land use practices, poverty and land tenure. All of these areas are being addressed at varying levels and with varying degrees of urgency by different sectors. The new vision seeks to coordinate these activities under a national action plan. The draft national action plan seek to find synergies with other programmes for the purpose of maximizing returns from both human and financial investments while seeking additional sources of funding. The draft national action plan will also encourage stakeholder investment in watershed management through community group effort. It is hoped that such projects would be subsidized by funding from local and regional sources.

Land tenure and poverty issues are currently addressed through a government land resettlement programme, but greater effort is needed to stop illegal farming in high elevations.

The vigorous reforestation programmes and contour farming as advocated by the Soil Conservation Unit in the Ministry of Agriculture is expected to show positive results in the short term. Currently the unit is working jointly with farmers and other stakeholders to install bench terrace in Greggs and Colonarie. This project is financed entirely by the government as an activity under the Ministry of Agriculture.

The strategies enunciated in the national strategic plan are constrained by financial and technological deficiencies at the national levels. They are further compounded by population growth and economic inflation. If adequate funding and appropriate technology could be found, the island could see a stabilizing of its land degradation problems within ten (10) years and definite restoration in twenty-five (25) years. The draft action plan also calls for:

- A monitoring and reporting mechanism as a means of identifying problems
- Establishing early warning systems and
- Initiating corrective measures in the shortest possible time.

Although a significant amount of work has been done with the focus on combating land degradation, public awareness is woefully sparse. There is no culture of information sharing, stakeholder involvement or record keeping. Such deficiencies speak of a need for institutional strengthening in terms of personnel and training. There is also need to foster links with other data gathering programmes like the national Agricultural Census now in progress.

In the area of financing, allocations are made from the national budget towards the Forestry, Water and Agricultural sectors. Additionally, NGOs and Community Based Organizations have joined forces with national and international agencies to address various components of land degradation.

From a legal perspective, soil conservation efforts are supported by (1) the Forestry Resource Conservation Act of 1992 which makes provision for the management and protection of forested areas, and (2) the Central Water and Sewage Authority Act of 1992 which permits the protection of areas for water resources related to water supply needs.

3.1 AFFECTED AREAS AND STAKEHOLDERS

The equatorial location of St. Vincent and the Grenadines allows for adequate rainfall to supply the water needs of St. Vincent. However, soil structure, land use patterns and evapotranspiration combine to threaten productivity and sustainability in a number of areas.

3.1.1 WATER ISSUES AND LAND DEGRADATION IN THE GRENADINES

The sparsity of organic matter in the calciferous soils of the Grenadines makes soil water retention almost nil. When this is coupled with evapotranspiration and survival pressures, the Grenadines can be classified as desert land. For the residents of these areas, the challenge of eking out an existence devolves around their ability to effectively manage coastal resources. Some animal rearing is done on Bequia and Union Island. In both cases, there has been constant complaint about land degradation occasioned by overgrazing, yet residents are not prepared to change what is an unsustainable traditional practice.

In Canouan, a noted development project controls the eastern third of the island. This project mandates the greening of the landscape. To this end, each housing plot is required to maintain vegetation on 1/3 of its area. The Forestry Department of the Ministry of Agriculture has been involved in specie selection and silviculture in Canouan.

3.1.2 FACTORS AFFECTING LAND DEGRADATION ON ST. VINCENT

On mainland St. Vincent, the immediate issue is not water shortage but overexploitation or inappropriate use of land. In this regard, farming on steep slopes (La Soufriere, St. Andrews) has resulted in serious soil erosion and fertility loss. In some areas, landslides have exposed the bedrock thus making the area barren. In other cases, rapid leaching of soil nutrients has resulted in infertile, sandy farms with heavy reliance on chemical fertilizers. Leaching of chemicals into the water table has endangered the lives of residents living in the farming areas.

Most of the deforestation in the higher elevations (e.g. Soufriere Hills) is tied to illegal farming activities. The farmers are unemployed persons attempting to extract a livelihood from the fertile but unstable slopes of the volcano. In their exploits, they clear large patches of land from the interior. These farm plots are only visible from above since the forest borders remain intact. The forestry department has reported a loss of 15% from the existing forest between 1993 and 1999.

The goal of the forestry department is a 35% forest cover. To achieve this goal, the department has planned several initiatives namely:

- An active and vigorous reforestation programme which is responsible for the 28% forest existing today.
- A move towards agro-forestry where farmers occupying sloping land (>40%) are

encouraged to plant tree crops on such slopes to avoid tillage and the associated erosion

Some charcoal burning and logging is done in St. Vincent but this is not the major cause of deforestation. Most of the logging is done as a controlled thinning exercise conducted by the Forestry Department. The remainder of the logging is due to illegal deforestation in which case the logs are simply left to rot. Not all of the existing forest consists of indigenous species. In its effort to protect vital water shed areas, the Forestry Department has planted some pure stands of Blue Mahoe.

There is a watershed management project in the Montreal area that is a joint effort by the Forestry Department, the local community and the Organisation of East Caribbean States - Natural Resources Management Unit (OECS-NRMU). The OECS-NRMU obtained funding from the Department For International Development (DFID). The project thus represents a partnership at the local, regional and international levels which is dedicated to the protection of environmental resources.

Other affected areas on the mainland St. Vincent include Fort Charlotte, Gun Hill, Great House and Coulls Hill. These areas have very shallow soil cover atop igneous rocks of volcanic origin. The vegetation that grows during the wet season is quickly dried out during the drier months before being consumed by fires which are often of a spontaneous nature. Therefore, the soil in these areas is very poor and almost barren. These areas provide some grazing for three months of the year and remain almost naked for the remaining nine months.

Given the number of Community Based Organizations (CBOs) and Non-Governmental Organizations (NGO) in St. Vincent, it is not surprising that there is a high level of environmental consciousness among Vincentians. Community groups and NGOs frequently undertake tree-planting exercise, organise environmental workshops and spearhead activities towards participatory developments. Unfortunately, much of this effort is impeded by poverty, land tenure issues and "developmental" nuances. Unemployment among members of CBO can force a change of residence or lead to inactivity of the group. CBO activities are also frustrated by the externalization of environmental costs by businesses and corporation whose only concern is the fortification of their financial base.

3.2.1 BIODIVERSITY

The loss of forest cover results in the loss of biological diversity. Not only are the habitats of animals destroyed but the exposed land dries out rapidly then erodes. Because the island is characterized by micro-zones, clearing of a small area can mean the ultimate loss of species of plant and/or animal. This is particularly worrying when we realize that no comprehensive survey of our forest has ever been done and that there is no exhaustive database of the biological resources of St. Vincent and the Grenadines.

3.2.2 UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

Although the total annual rainfall for St. Vincent and the Grenadines has shown little change over the last twenty-five (25) years, the pattern has changed significantly. Instead of six months of almost evenly distributed rainfall the country experiences short periods of torrential down pours. This is followed by seven to nine months of little or no precipitation. Because much of the sloping land has been cleared for agriculture and housing construction, torrential rains result in heavy run off causing much erosion. Very little of this water percolates into the soils to feed the dwindling streams. Consequently, the normal flow volume of streams in St. Vincent has diminished appreciable over the last twenty-five (25) years.

Whether changes in rainfall pattern are indicative of climate change or simply a phase in a cyclic event is uncertain. However, there is no uncertainty as it relates to the increase in temperature. This increase in temperature supported by the dry North-East Trades favours land degradation that threatens agriculture and Biodiversity in St. Vincent and the Grenadines.

4.1 COMBATING DESERTIFICATION

4.1.1 TRADITIONAL ACTIVITIES

Traditional farming practices in St. Vincent had a built-in mechanism to retard or avert land degradation. Under Colonial control, farming was restricted to low-lying areas. This was later institutionalized by the Crown Lands Act which prohibited farming above the 1000 foot contour. This dispensation was characterized by contour farming on slopes with intermittent rows of Vetiver grass which (1) reduced erosion, leaching and water loss and (2) provide habitats in support of biodiversity. During this period also, crop rotation was the norm, and the practice of leaving the land fallow every five or six years was in the unwritten code of good farm practice. The benefits of such practices were seen in the consistent high yields over several generations, the natural control of agricultural pests, and the absence of sheet erosion.

4.1.2 IMPACT OF BANANAS

These tried and tested practices were swiftly abandoned to meet the needs of an expanding population with an unsustainable life style. Banana production needed more lands than the traditional root crops. This led to deforestation, eradication of the Vetiver grass and a change of farming practice. The practice of leaving the land fallow was abandoned as the intensive farming practice of banana kept the same plot of land under cultivation for twenty-five or more years. Such long-term use of the soil for single cropping destroys the integrity of the soil thus leading to:

- Loss of fertility
- Loss of soil flora and fauna
- Change of soil crumb structure

While banana cultivation was spreading in the lower elevations, housing needs were also expanding. Both activities have inched their way up the slopes into protected forest areas.

4.1.3 CURRENT EFFORTS

Current efforts to combat degradation point to the need for returning to some traditional practices. A campaign by the forestry department to relocate farmers squatting on high altitude crown lands has achieved satisfactory results. What is still an issue is the long-term monocropping on the same plot of land and the absence of contour farming. A combined effort by the extension service of the Ministry of Agriculture and the Department of Forestry has resulted in the recovering and restoration of some denuded areas like Zion Hill in Barrouallie and portions of the Colonaire watershed. These activities speak of national commitment to combat land degradation.

4.2 INSTITUTIONAL RESPONSE; THE ROLE OF NGO'S AND REGIONAL AGENCIES

From an institutional standpoint, these commitments are reflected in the signing of the UNCBD, UNCCD, the UNFCCC and the fulfillment of their attendant obligations. Several Community based organizations (JEMS, CDO, Women in Nation Building, and OFAOCA) received the government's endorsement as they sourced funds from the GEF to address issues relating to land degradation. Among CBOs, JEMS stands out as a role model. Between 1982 and 1995 this organisation received four national awards for the successful execution of projects aimed at combating land degradation. Its greatest achievement is the preservation of the Kings Hill forest reserve, the oldest stand of natural vegetation in the Eastern Caribbean. This organisation also fought against sand mining and quarrying in biologically sensitive areas.

SVG in support of sub-regional activities to combat land degradation. Working jointly with the OECS-NRMU, several conservation projects were developed. Ongoing projects include:

1. *The Buccament Valley Development Project.* This project brings together eight community groups and sporting organizations from five neighbouring communities. This project seeks to develop a co-management plan for the areas whose forest and water resources have been under severe stress characteristic of 'common' property in underdeveloped countries.
2. *The Montreal Water Catchment Project.* This Project brings together three communities to address deforestation and restoration of the watershed. The lessons learnt from these projects are shared with the OECS sub-region.

The countries of the OECS are heavily reliant on their natural resource base for economic development. Success in conserving key environmental resources is therefore critical to sustainable development in these countries. Because they are islands, another important characteristic of the OECS countries is the linkage between terrestrial and coastal ecosystems. This means that a multi-dimensional integrated planning approach to address environmental issues is required. To this end, an East Caribbean Environmental Charter is being developed.

Currently, member states of the OECS are receiving assistance from Canada for the development of institutional capacity to manage the environment. The project entitled, "Environment Capacity Development " (ENCAP D), is being executed jointly by the OECS-NRMU and the Canadian International Development Agency (CIDA). The ENCAP D project is supportive of the request from the Policy Advisory Committee of the OECS, which mandated the NRMU to develop an environmental charter for the region. St. Vincent is an active participant in the development of this charter. SVG has also endorsed the proposed sub-regional project on land degradation with anticipated funding from the GEF.

5.1 INSTITUTIONAL ARRANGEMENT

The cabinet of Ministers is the highest decision making body in St. Vincent and the Grenadines. This body is composed of all members elected to the House of Assembly during a general election. From the government's side, Ministers are appointed to give political direction to Ministries.

Environmental issues fall under the aegis of the Ministry of Health and the Environment. The Chief Medical officer is the technical head of this Ministry and the immediate head of the Environmental Unit. The Environmental Services Coordinator heads the Environment Unit and chairs the National Environmental Advisory Board (NEAB). The NEAB is a cabinet appointed body whose role is to advise the Ministry on matters germane to the environment.

It should be noted that appointment to the board is not the appointment of an individual, but an office. This means that there is no gender divide. The current Board has four females and seven males; three from NGO's and eight from the government sector. There is no hierarchy on the board. Its integrity is maintained by sound professional competence and commitment fostered by an obligation to national development.

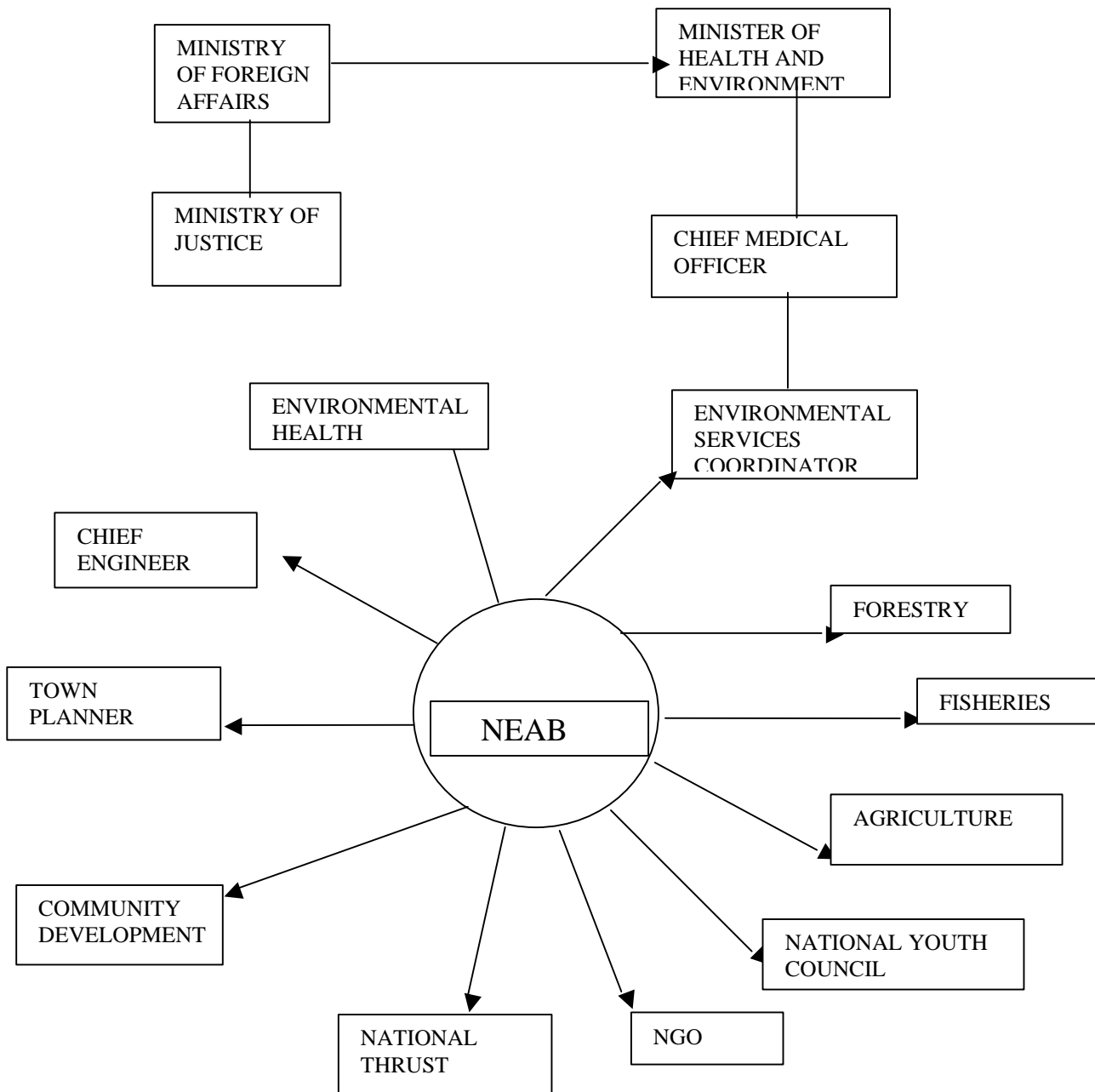
Given the composition of the board and the authority of individual board members, decisions emanating therefrom are technically and legally sound. To ensure transparency, all decisions of the board are recorded and distributed to all board members. Members are free to share this information with the press. Frequently, the Ministry uses the media (Government Information Service [GIS]) to share developments with the nation. Environmental issues are therefore well ventilated.

The NEAB is charged with oversight of the National Environmental Action Plan (NEAP). Because Environmental issues permeate all departments/sectors of government, the Environmental Unit functions primarily as a coordinating and monitory agency thus leaving Departments to do their record keeping. While data can be obtained by a visit to the records unit of most Ministries, there is no consistency in format, such as, data type, presentation, spacial domain, time frame, and accuracy. This presents a major problems when a coordinated approach is need to address an issue.

Under the auspices of the UNFCCC, there is an ongoing initiative to develop a national database. However, allocation under UNFCCC will only initiate the process. Additional funding is needed to create a bona fide national database. While local support is available for institutionalization of the database, there is and absence of expertise to implement the programme. This speaks of the need for funding to develop technical and institutional capacity for environmental management.

Because the primary role of the NEAB is to guide the implementation of the NEAP which is executed by the various Ministries of Departments, the NEAB does not have budgetary allocations. The logic is that the funding is made available to the executing agencies. It is here that the multi-sectoral, inter-disciplinary character of the Board

ENVIRONMENTAL INSTITUTIONAL ARRANGEMENT



manifests its true value. Because all ministries executing environmental activities are represented on the board, the concerns of the board are reflected in the budget and work-plan of the agencies.

The existence of the advisory board as a national monitoring body is an experimental one. The initiative seeks to maximize the benefits to be derived from the limited technical and financial resources of the country. It takes cognizance of the absence of economic instruments in environment evaluation in St. Vincent and the Grenadines and brings to bear a collaborative forecasting and monitoring alternative. This is particularly useful in the implementation of Multilateral Environmental Agreements (MEAs). Coordinating several MEAs is a major task for island states. While all of the agreements have real meaning for fragile island states, fulfilling obligations under these agreements is often beyond the scope of government. For this reason, partnerships must be forged with the private sector and NGO's. Poverty alleviation is a more critical issue to be addressed than the fulfilling of the MEAs obligations. It is well known that land degradation is an index of poverty and that issues of land degradation, i.e. loss of biological diversity, deforestation/desertification, are probably irreversible. The government of St. Vincent and the Grenadines has taken a bold step to address this problem through three major land reform projects, agriculture diversification and youth skills training programmes. Additional international assistance is being sought in an effort to arrest this problem. Notwithstanding, the many nude hills in St. Vincent are evidence of poverty.

Development policies in St. Vincent and the Grenadines demand public participation in national issues. Therefore, although St. Vincent and the Grenadines has done very little by way of addressing land degradation/deforestation as articulated in the UNCCD, the issues are being addressed indirectly via Climate Change and vulnerability, Biological Diversity and Island Systems Management (ISM). ISM is an OECS approach to integrated resource management at the island state level.

Despite the synergies fostered among the various environmental initiatives in St. Vincent and the Grenadines, there is need for a focused approach in each case. To this end, issues relating to land degradation/desertification need special attention. St. Vincent and the Grenadines must take seriously its obligation under the UNCCD and these cannot be fully addressed in an amalgamated national environmental approach. Surely, there are overarching themes that are best worked together but there are some mutually exclusive issues that must be treated as such

5.2 MULTILATERAL ENVIRONMENTAL AGREEMENTS

MEA's are generally signed by the Ministry of Foreign Affairs following legal approval by the Attorney General's office. Implications of the convention then become the role of the relevant Ministry or Department. The Technical focal point for most environmental

conventions is the office of the Environmental Services Coordinator. Among the list of MEA's signed by St. Vincent and the Grenadines are:

The United Nations Framework Convention on Climate Change (UNFCCC). This convention and its Protocol seek to control the emission of greenhouse gases. The government of St. Vincent and the Grenadines and, the private sector have taken measures to reduce green house gas emissions.

The United Nations Convention on Biological Diversity (CBD). This convention seeks to protect flora and fauna and their habitats from destruction by man.

The Basel Convention on the Control of Transboundry Movement of Hazardous Waste and their Disposal.

The Vienna convention on the Protection of Ozone Layer. Protection of the ozone layer will reduce UVB radiation reaching the earth thereby reducing the rate of global warming.

The United Nation Convention on the Law of the Sea (UNCLOS). This convention prescribes jurisdictional rule for the marine environment. UNCLOS obligates coastal member states to "protect and preserve the marine environment". This convention provides the framework for the Exclusive Economic Zone.

A number of initiatives are being carried out under several of these agreements. For example, national reports have been produced under UNFCCC and CBD. The OECS solid waste management project (an initiative emanating from the Marpol convention) is now a reality. This project is funded jointly by the World Bank and the Government of the member states of the OECS.

The national reports on Climate Change and Biological Diversity both identify areas of weakness that contribute to land degradation and point to possible mitigation measures. Implementation of the recommendations of these reports will support the development of strategies towards conservation. However, translation of obligations under MEA's into locally binding acts, regulations or laws is a very slow process. The locally recommended approach is to look for areas of similarity in existing laws or acts and lobby for amendments and or enforcement.

6.1 RESOURCES FOR IMPLEMENTATION

Although the language of environmental science seems new, the concept of sustainable use of environmental resources was an integral part of the Vincentian culture until the latter half of the twentieth century. Population explosion, extravagant life style and some components of the green revolution are the real proponents of land degradation in St. Vincent and the Grenadines. Fortunately, some principles of conservation are institutionalized. Forestry Department has a long tradition of protecting forested areas (areas above 1,000 ft, contour). Working jointly with the Canadian International Development Agency (CIDA), a Forestry Development Project was executed between 1989 and 1994. The goal of the project was to (1) develop the institutional capacity of the St. Vincent Forestry Division to manage and protect the country's forest resources and (2) create an awareness among Vincentians, that can both reverse the trend of environmental degradation and provide for the forest needs. The project focused on enhancing forest resources and developing and strengthening community involvement and staff training. More specifically, four technical areas were addressed. They are

- Policy and Institutional Development
- Organization and Staff Development
- Conservation of National Resources
- Development of Plantation Forests.

Staff development became a regional initiative. Staff members were sent to Trinidad, Puerto Rico and Barbados for training. One visible output of the project is the active silvicultural operation that now assists the private sector. The project cost exceeded EC\$5m.

Government does not have a monopoly on conservation or international funding. In 1996, JEMS Environmental Management Service accessed funding from the GEF to help CBOs develop projects for funding under the GEF. Since then, the CBOs have accessed funding from the GEF to do work on habitat conservation, and watershed management.

Given the diversity of executing agents for environmental activities, there is need for effective coordination and monitoring. All members of the NEAB are full time workers at their substantive posts. This situation gives them little time to monitor. The Technical Focal point (Environmental Service Coordinator) is in a similar predicament. The conclusion is that monitoring is seldom done or not done at all. Solving this problem requires additional technical staff which the country can ill afford. Despite the apparent prevalence of funds for environmental activities at the international level, the problem persists. The reality is that where grant funds are available (such as at the GEF) it is difficult to source at the island state level. Regional approaches are the preferred methodology but are problematic in the absence of a truly regional environmental entity.

The University of the West Indies is emerging as a possible entity to address environmental issues. Surely, the expertise exists in the field of agriculture, hydrology

and meteorology. Science at the University of the West Indies must now move from the classroom to the fields and communities to provide services like early warning systems, resistant species and water conservation strategies. There is need for climatic/geographic modeling systems appropriate to small island states. In addition, an expansion of the courses in Agricultural Technology is necessary.

6.2 NATIONAL ACTION PLAN

St. Vincent and the Grenadines remains committed to its obligations under UNCCD. However, given the national circumstances vis-à-vis Economics, institutional development and human resources, St. Vincent and the Grenadines is not yet in a position to present a fully developed National Action Programme to the COP. The contents of this document should therefore not be seen as the national code for averting land degradation, rather, it should be seen as the pulse of a nation under economic and environmental stress, seeking the best possible prescription for environmental, as well as, economic sustainability. The contents of the report highlight the synergies among environmental initiatives and national approaches towards sustainable development. Indeed, it is economic growth that must mitigate environmental resources, for it is only by reducing poverty and stabilizing population growth that land degradation/desertification can be averted. The development of a national action plan must therefore be guided by three basic truths;

1. St. Vincent and the Grenadines has no naturally occurring mineral wealth.
2. Agriculture has been and will continue to be an important sector in economic development for St. Vincent.
3. Land tenure issues are dear to the heart of Vincentians

The absence of mineral wealth in St. Vincent and the Grenadines limits developmental options. There is thus heavy reliance on agriculture and tourism. Both of these options devolve around lush, arable land and unique geographic location and phenomenon. Land degradation, therefore, is counter-productive to economic development in St. Vincent. If only for this reason, combating land degradation must be the responsibility of all Vincentians. Too often, short-term economic gains jeopardize future survival. The rules of engagement in this global village, however, dictates that SVG addresses this issue bearing in mind the tenants of sustainability i.e. that supplying the needs of the immediate should not jeopardize future survival. Under the Planned National Action Programme therefore, attention would be paid to:

6.2.1

Strengthening the soil conservation unit in an effort to improve soil fertility and reduce erosion and leaching. Currently, land clearing for construction and agriculture exposes and excavates large quantities of topsoil. Much of this topsoil is taken to the sea during heavy rains. The sediments adversely affect fishing, reef development and beach tourism. The accompanying loss of topsoil and nutrient reduces agricultural yields and invites the use of synthetic fertilizers and pesticides which are also agents of land degradation.

6.2.2

Improving agricultural technology for greater yields and soil conservation.

When the first European settlers came to the country, they cleared large areas of forest to make way for sugarcane cultivation. With the abolition of slavery, sugar plantation quickly gave way to smallholdings and subsistence farming although some large holdings remained which produced Sea Island cotton and arrowroot for export. In the early 1950's, banana took the place of sugarcane as a plantation crop. Like sugar before it, banana cultivation resulted in more deforestation. Competition in the global market place demanded a fruit that could only be produced with the use of agrochemicals. Such agrochemical use negatively impacted natural water supply.

Appropriate agricultural technologies have not advanced significantly enough to offset the need for additional cropland to meet the needs of the country. Therefore, as the search for and use of suitable arable land intensifies, so to does the degree of deforestation, erosion, siltation, and land degradation/desertification.

6.2.3

Issues of land tenure. The abolition of slavery saw the ex-slaves moving away from the estates of their masters to the less arable, more fragile, less stable volcanic slopes to eke out an existence. Hence the genesis of squatting that is plaguing the country today. Ownership of land is a Vincentian obsession so that those who can afford buy available lands while the less fortunate or more enterprising retreat to the hills. In an effort to alleviate this problem, the government has acquired three of the remaining large holdings (estates) and subdivided them into small housing and farm lots. The latest of these land reform programmes is currently taking place at Mount Wynne on the northwestern coast of the island.

6.2.4

Implementing the revised building code with emphasis on land clearing, site/location and Coastal Setback. Squatting on crown lands by private persons has reached crisis proportion in St. Vincent. Desperate for housing, citizens have cleared forest, disrupt waterways and converts farm land into house spots. In addressing this issue, government will have to evaluate whether to control land transaction to maintain planned zonation/usage or to allow unplanned, unsustainable development to continue. For the future safety of all Vincentians, forest reserve and agricultural allotments must be protected from housing and squatter activity.

6.2.5

Maintaining a minimum of 28% forest cover. Ideally, a 35% forest cover coupled with appropriate technological management practices will meet the forest need of Vincentians in the future. However, it is impractical to consider maintaining 35% forest cover in the face of an expanding population which practices subsistence farming, unsustainable

logging, poor conservation and little or no political will to protect natural resources. Greater accountability and management authority is needed in the fight against deforestation. There is also a great need for private sector partnership to promote sustainable forest management.

6.2.6

Securing all water-catchment areas in a joint venture between CWSA and forestry. An adequate supply of fresh water is the only real defense against desertification. Given the fact that the volume of surface water in St. Vincent has decreased over the past twenty years, it is critical that all necessary measures be taken to protect the remaining source. Additionally, the use of agrochemicals (pesticides and fertilizers) and farming technology (irrigation) is putting greater pressure on national water resources. Not only is the demand greater but the quality is also threatened by agrochemical leachate.

6.2.7

Providing support for NGO activities as per conservation efforts. To be a protector, one must feel a sense of ownership. NGO activities allow ordinary people a voice in their own affairs, a hand in management and a sense of pride in having made a meaningful contribution to their future and the future of their children. Such efforts must therefore be encouraged and supported.

6.2.8

Strengthening Public Awareness initiatives to increase partnerships in environmental resource management. In keeping with the developmental policies of this country, public education is a priority. For this reason, most developmental projects government Ministries have resident education units. Examples of these are the Health Education Unit in the Ministry of Health and the Environment, the Public Awareness arm of the Solid Waste Management Project and the Communications arm of the departments of Fisheries and Forestry. Most of the United Nations conventions being executed in this country have a public awareness component. The UNCCD needs to mirror other UN conventions in this respect while forging links for maximum benefits.

7.0 CONCLUSION

The production of this document was guided by the methodology developed by the UNCCD. While the national focal point spearheaded the exercise, assistance was received from the secretariat in the form of a regional consultant, Mr. Philbert Browne.

Mr. Browne visited St. Vincent from February 14th to 18th, 2000. During his visit he met with key stakeholders from government ministries, the NGO community and civil society. Mr. Browne pointed to the low level of participation by SVG in regional activities of the CCD but felt that there was simply not enough bodies to go around. He was, however, pleased with the number of synergistic activities taking place in the country.

Because of the shortage of personnel, the Environmental Unit produced the draft document which was presented to a group of thirty five (35) at a national consultation held on April 12th. The document was revised between April 12th and 21st. Unfortunately, the next meeting of the National Environmental Advisory Board is slated for April 27th by which time this document would have been submitted to the secretariat. The document as stand, therefore, does not have the endorsement of the Cabinet of Ministers or the NEAB as a body. Individual members of the NEAB have contributed to the development of the document. There is, therefore, no question as per the authenticity of information presented in the document.

Financial assistance for the production of this document was provided by the Secretariat. The government and people of St. Vincent and the Grenadines express their sincere gratitude to the Secretariat for this support. The process of developing the document highlighted areas of neglect hitherto overlooked by the relevant agencies. In brief, the exercise of producing this document has benefited the country in many ways for which we are grateful.

Fulfilling national obligations under UNCCD is now a priority for St. Vincent and the Grenadines. Given the several areas of overlap identified in the document, it is clear that SVG will benefit significantly from implementing the convention.