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**GOVERNMENT OF SAINT LUCIA**

**MINISTRY OF AGRICULTURE, LANDS, FISHERIES  
AND FORESTRY**

**DEPARTMENT OF FORESTRY**

**Consultancy to Develop**

**NATIONAL ACTION PLAN AND STRATEGIC ACTION  
PLAN  
TO COMBAT DESERTIFICATION AND DROUGHT  
In Saint Lucia**

Publication reference: SFA2003/SLU/BIT-1/0710/EMF/LC

**ANNEX 1**

**Final Draft National Action Plan and Strategic Action Plan -  
NAPSAP**

Prepared by



December 2008





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**Executed by the Ministry of Agriculture, Land, Fisheries and Forestry  
With Funding from the EU  
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## UNCCD National Action Plan – Saint Lucia

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## **Forward by the Minister of Agriculture, Forestry and Fisheries**

On July 2, 1997, Saint Lucia signed the Convention to Combat Desertification/Land Degradation, negotiated under the auspices of the United Nations (UNCCD), with the Ministry of Agriculture, Forestry and Fisheries (MAFF), through the Department of Forestry acting as the national focal point (NFP) for the Convention.

Since signing the Convention, the island, no different from other small island developing states (SIDS) with limited available resources continues to be faced with the dilemma of balancing economic development and environmental conservation. Central to this are the ongoing challenges with regard to land degradation and drought-like conditions, particularly in watersheds with high agricultural and development activity.

In response to the degrading state of lands and the coastal environment, several studies have been commissioned, and a number of programmes and projects have or are being implemented that are directly or indirectly related to land and water resources management, though within a broader context of integrated management of watersheds and coastal areas.

Such initiatives and other related activities undertaken to date in the various sectors, which have served to advance implementation efforts for meeting the requirements of the Convention, have yielded some baseline information and a framework for sustainable land management in Saint Lucia. However, efforts to reduce the negative impact of land degradation, including the protection of water sheds, safeguarding of endangered biodiversity while supporting traditional livelihood patterns have been frustrated by a weak legislative system, absence of a national land policy, land zoning and planning, limited economic incentives, and a general lack of capacity at the institutional, systemic and individual levels.

Current patterns in land development on the island have further exacerbated the problem of poor land management, pointing to a trend leading up to a crisis in land markets. Emerging conflicts among uses and users of land, has resulted in the transformation and loss of many landscapes and ecosystems, with inevitable consequences on the island's water supply and the key productive sectors, agriculture, fisheries, industry and tourism. Hence the management of land and ensuring its productivity is a critical and essential requirement for sustainable development, including poverty reduction, food security, employment generation opportunities, environmental quality, social cohesion and overall quality of life.

The Ministry of Agriculture, Forestry and Fisheries has thus seen the need to facilitate several initiatives aimed at fostering collaboration among the various sectors of development to achieve where possible, synergies in programmes and activities to ensure more effective more effective management of the land resources. These synergies cater to enhancing the contribution of land to economic development, including poverty reduction, food security, and employment generation opportunities, for sustainable development.

The National Action Programme and Strategic Action Plan (herein after referred to as the NAPSAP) is context within the companion document, the Country Study Report on Land Degradation and Drought in Saint Lucia, which provides the detail and background to the programme. The NAPSAP thus provides the status of and future endeavours for to address land degradation and drought, and the implementation of the UNCCD over the short, medium and long term.

The NAPSAP aims to promote and enable enlightened decision making by the Saint Lucian population with respect to the sustainable use and management of land resources. The approach of the NAPSAP is one which utilizes the participatory process for ensuring focused, consistent and effective representation of primary stakeholders including Government, policy makers, private sector and the general public, and in particular rural communities in the process for addressing land degradation and overall UNCCD implementation. Given the fundamental role to be played by the NGO and community sector in implementing the NAPSAP, community involvement and strengthening the community sector for participation are key elements of the Programme.

The NAPSAP is a long-term programme with a strategic plan which covers the 10-year period, 2008 to 2018. The programme includes:

- A vision, approach and guiding principles for the sustainable management of land resources and the mitigation of drought-like conditions in Saint Lucia;
- Strategies and priority actions at the community, local and national levels to combat land degradation, rehabilitate degraded lands and mitigate drought-like conditions;
- An institutional framework for implementation of the NAPSAP; and
- A mechanism for monitoring and evaluation of the NAPSAP, including indicators for monitoring land degradation.

In order to meet the short-term, medium-term and long-term objectives for sustainable land management and rehabilitation, the process of implementation of the NAPSAP is divided over the 2008 to 2018 period into three phases, namely a short term of 2008 to 2010; a medium term of 2011 to 2013; and a long term of 2014 to 2018.

The Ministry of Agriculture, Forestry and Fisheries is grateful for the work of the Adhoc Technical Working Group (ATWG), which took over the role of the dormant UNCCD National Coordinating Committee in March 2005, in guiding the development of the NAPSAP in collaboration with the national consultant. The expertise of this multi-sectoral working group has resulted in a NAPSAP that is broad based and establishes strategies and priorities within the framework of sustainable development recognizing that the sustainable management of the land resources of Saint Lucia is critical to socio-economic development and the livelihoods of its citizens. Its implementation will promote national and local awareness and facilitate the participation of local populations and non-

governmental groups in this programme to reduce land degradation and mitigate the impacts of drought.

The Government of Saint Lucia through the Ministry of Agriculture, Forestry and Fisheries, is also grateful to the European Union for funding activities towards the completion of the NAPSAP under the EU Special Framework of Assistance (SFA) 2003 programme, Economic and Agricultural Diversification and Poverty Reduction through Integrated Natural Resources Management. The goal of the SFA 2003 programme was the management of Saint Lucia's natural resources by building capacity and developing consensus on a collective vision for the efficient, sustainable and equitable use of the resources. Hence, the NAPSAP and its companion outputs represent a valuable investment in environmental management for sustainable development, which will complement ongoing initiatives in integrated land management, water resource management, biodiversity protection, agriculture and other economic diversification initiatives.

## **List of Acronyms and Abbreviations**

ATWG	Adhoc Technical Working Group
BERU	Banana Emergency Recovery Unit
BNTF	Basic Needs Trust Fund
CARICOM	Caribbean Community
CBOs	Community Based Organizations
CBD	(UN) Convention on Biological Diversity
CEHI	Caribbean Environmental Health Institute
CIDA	Canadian International Development Agency
COP	Conference of Parties
CPACC	Caribbean Planning for Adaptation to Climate Change
CRIC	Committee for the Review of the Implementation of the Convention
CROSQ	Caribbean Regional Organisation for Standards and Quality
CSME	Caribbean Single Market and Economy
CST	Committee on Science and Technology
DCA	Development Control Authority
DESELAC	Regional Information Network on Desertification and Drought
EIA	Environmental Impact Assessment
EU	European Union
FAO	Food and Agriculture Organization
FNR	First National Report
GEF	Global Environment Facility
GIS	Government Information Service
GM	Global Mechanism
GOSL	Government of Saint Lucia
IDP	Integrated Development Planning
IFAD	International Fund for Agricultural Development
IUC	Information Unit for Convention
LAC	Latin America and the Caribbean

LDC	Least Developed Countries
LRIS	Land Resources Information System
LRMS	Land Resource Management System
L RTP	Land Registration and Titling Project
MAFF	Ministry of Agriculture, Forestry and Fisheries
MEA	Multilateral Environmental Agreement
MPDEH	Ministry of Physical Development, Environment & Housing
MSP	Medium Size Project
NA	Not Applicable
NAP	National Action Programme
NCA	National Conservation Authority
NCC	National Coordinating Committee (for the UNCCD)
NCSA	National Capacity Needs Self-Assessment for Global Environmental Management
NCSAP	National Capacity Self-Assessment Project
NFP	National Focal Point
NEMS	National Environmental Management Strategy
NEP	National Environment Policy
NEMO	National Emergency Management Organization
NLPC	National Land Policy Committee
OAS	Organization of American States
OECS	Organization of Eastern Caribbean States
OP 15	Operational Programme 15 (GEF)
PEO	Public Education and Outreach
PRF	Poverty Reduction Fund
PROUD	Programme for Regulation of Unplanned Development
RAP	Regional Action Plan
RSO	Research and Systematic Observation
SFA	Special Framework of Assistance
SDES	Sustainable Development & Environment Section

SGD	Saint Georges Declaration of Principles for Environmental Sustainability in the OECS
SIDS-POA	Small Island Developing State – Programme of Action
SLBS	St Lucia Bureau of Standards
SLM	Sustainable Land Management
SLNT	Saint Lucia National Trust
SLSWMA	St Lucia Solid Waste Management Authority
SRAP	Sub-regional Action Plan
TNA	Technology Needs Assessment
TPN	Thematic Programme Network
TWCG	Talvern Water Catchment Group
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNCED	United Nations Conference on Environment and Development
V&A	Vulnerability and Adaptation
WASCO	Water & Sewerage Company
WRMU	Water Resource Management Agency ( now defunct)
WRMA	Water Resource Management Agency
WEMP	Watershed and Environmental Management Programme

## 1.0 INTRODUCTION

### 1.1 Background and Rationale

Saint Lucia is a small island developing state lying within the Antillean Archipelago or garland of Eastern Caribbean Islands, and is situated near latitude 14 degrees north and 61 degrees west. The island has an area of 616 km<sup>2</sup> and a population of approximately 160,000. As a consequence of its volcanic origin, the island has a very rugged topography with a central ridge of mountains, including Mount Gimie the highest peak (950m). It is estimated that some eighty percent (80%) of the country has slopes greater than ten (10) degrees, and nearly 20,000 acres (8,000 ha) are over thirty (30) degrees and suitable mostly as forested water catchment and wildlife habitat. The Government Forest Reserve, which accounts for 12% of the total land area is the main contiguous forest area in the central region of the island and is integral to the protection of soil/land and water resources of the country.

Located within the Trade Wind belt, the island has two (2) climatic seasons based on rainfall; a wet season that extends from June to November and a dry season occurring between December to May, though in recent times the distinction between the seasons has not been as clear-cut, and drought-like conditions tend to persist for extended periods.

The island's natural environment, like that of most small island developing states (SIDS) is characterised by and faces challenges originating from its small size (both physical area and economy), ocean-locked, limited infrastructure and a consequent high vulnerability to economic exposure, and environmental and natural disasters. The fragility and small size of the island's ecosystems, results in a high level of inter-connectivity among these and their natural functions; hence, activities occurring in one area can very rapidly have negative environmental impacts on surrounding ecosystems; in particular, changes taking place in upper watershed areas very rapidly impact on lower watershed and coastal areas.

Land, including both terrestrial and marine space, as in any country, and in particular in SIDS, is one of the most important resources and is key to the economic development of the country. Further, in the St. Lucia context, the unique characteristics of SIDS, in association with multiple drivers and root causes such as prevailing land tenure systems, fragile soil types, physiographic and climatic variation, limits the land area available for development and creates intense competition between the land use options including urban settlement, agriculture, tourism and other infrastructure.

The inextricable link between land and the island's water and biological resources has also been widely demonstrated. Problems associated with poor land management have affected the quantity and quality of the fresh water resources. There is visible evidence of reduced stream base flow, increasing

water shortages, more frequent costly de-silting of waterways and attendant flooding. Concomitant loss in biodiversity occurs as a result of a loss of habitats, due to forest clearing and a reduction in water availability and quality to ensure the integrity, stability, functions and services of ecological systems.

The impacts of poor land management, particularly in relation to land degradation and drought, also have tremendous adverse implications for economic growth, human development and the environment. This is as a result of increased vulnerability of the population to loss of livelihoods, food security risks, as well as the collateral damage to the economic assets of the country and the environment as a whole. The island's history is replete with accounts of major natural disasters related to land, such as the 1938 Ravine Poisson Landslide, highlighting the vulnerability to land related natural hazards, with the potential for substantial loss of life and property damage.

Current patterns in land development in Saint Lucia point to a trend leading up to a crisis in land markets. Emerging conflicts among uses and users of land, has resulted in the transformation and loss of many landscapes and ecosystems, with inevitable consequences on the island's water supply and the key productive sectors, agriculture, fisheries, industry and tourism. Hence the management of land and ensuring its productivity is a critical and essential requirement for sustainable development, including poverty reduction, food security, employment generation opportunities, environmental quality, social cohesion and overall quality of life.

**Desertification/Land Degradation and Drought** thus poses a problem of national concern, as it cuts across sectors and communities; physically it is dispersed among locations/communities around island and economically it is dispersed among sectors with respect to their contribution to land degradation.

In its broadest sense, land degradation means the loss of some or all of its productive capacity as a result of human activity or habitation patterns. *Desertification is a process of land degradation which starts with the loss of vegetation cover and ends with the destruction of the soil's fertility and its transformation into barren desert, resulting from a combination of climatic effects (mainly high temperatures and low rainfall) and human activities (e.g. burning, overgrazing, poor farming practices).*

<b>Land Degradation includes:</b>	
⊖ Loss of ecosystem resilience	⊖ Water logging
⊖ Loss of ecosystem functions and services	⊖ Salinization/salt water intrusion
⊖ Deforestation	⊖ Acidification
⊖ Water and wind erosion	⊖ Loss of or damage to vegetative cover

- |  |   |
|--|---|
| ⊖ Riverbank erosion                                    | ⊖ Sediment depositions on productive land and in rivers and waterways |
| ⊖ Soil fertility/productivity loss                     |   |
| ⊖ Degradation of soil structure e.g. hardpan formation | ⊖ Loss of habitat and biodiversity (terrestrial & marine)             |

Drought as a broad concept is the consequence of a natural reduction in the amount of precipitation received over an extended period of time related to the timing, duration and effectiveness of the rains. The impact of drought is dependent though not only on the duration, intensity and spatial extent of the drought episode, but also on the demands made by human activities and vegetation on a region's water supplies.

Cox<sup>1</sup> premised that one of the major impacts of drought on the island, that is declining flow regimes in the watersheds of St. Lucia, can be explained by two factors; long-term climatic variations (mostly high temperatures and low rainfall) and shifts in land use. Conversion of lands in upper reaches of the watersheds on the island have caused changes in the watershed hydrologic response, resulting in increased runoff and less moisture retained in the basin to recharge base flow.

Given the implications for economic growth, human development and the environment, land degradation and drought considerations must be taken into account in the relevant social, economic and environmental policies and actions, and an integrated approach adopted for mainstreaming land degradation issues into the national planning process must be pursued. The nexus between the land aspect of environmental sustainability and the productive sectors such as tourism and agriculture in particular, must also be given greater emphasis.

A functional national land use and management policy is thus an imperative to create a backdrop for the management of land degradation and drought issues. In the absence of statutory land zoning prescriptions that define spatial allocations for optimal land use within a watershed context, as well as provide adequate development controls, land development patterns are now driven more by land market forces rather than policy and strategic planning instruments. Planning for land development tends to be sector-driven with little attention paid to the holistic management of land, including the maintenance of the land/water balance in terms of supply capacity for the various ecosystem services (rivers/water, soil/land productivity, biodiversity, buffers to natural hazards, etc.). The result has been exploitation of land resources beyond its carrying capacity, with little or no mitigation of the impacts of land degradation and drought effects, and the subsequent loss in potential of the islands water resources to maintain ecosystem functions and services.

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<sup>1</sup> C. Cox, PhD Thesis, 2003

Several policies, legislative and institutional frameworks, and programmes designed to either rationalise or optimise land use and management have been put in place by the government of Saint Lucia, within the broader framework of land and water resources management; some already adopted and some still in the implementation phase. While, these initiatives have had positive impacts in terms of remedying many of the early-day land related problems, the current and emerging land development and management issues in Saint Lucia still need to be resolved with urgency. The National Land Policy, enacted in 2006, purposes to “provide coordination and effectiveness in land management, development and administration in the country in order to respond to the challenges of globalisation, including the need for economic diversification and growth, the imperative of environmental sustainability and the ever expanding demand for social services and infrastructure”. Regrettably, the framework for the accession of the National Land Policy is yet to be established.

The National Action Programme and Strategic Action Plan (NAPSAP) to Combat Land Degradation in Saint Lucia with its objective to provide an integrated framework for mitigating the physical, biological and socio-economic impacts of land degradation and drought on the island thus provides at this time, one of the most expedient means to facilitate the implementation of the National Land Policy.

Following an extensive consultative process with stakeholders, it was determined that the UNCCD National Action Plan and Strategic Action Plan, herein referred to as the NAPSAP, should be considered a dynamic document, as new and emerging issues, which may not have been considered priority at the time of preparation or updating, may increase in significance and should therefore be addressed through ongoing revisions of the document over time. Consequently, a strong monitoring and evaluation component is included to ensure the regular and systematic review and updating of the NAPSAP.

This UNCCD National Action Plan and Strategic Action Plan(NAPSAP), encompasses a holistic vision and integrated action plan for combating land degradation and drought utilising a land management approach and includes goals and outcomes defined by targets to be achieved within specific time frames.

## **1.2 United Nations Convention to Combat Desertification (UNCCD)**

The need for global and national assessment of land degradation was recognised early in the 1970’s by the International Community. Land degradation was, and still is recognised as a major economic, social and environmental problem of concern to many countries in all regions of the world. Hence in 1992, the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro considered three major environmental issues: Biodiversity and

the conservations of biological resources, Climate Change and Desertification (Land degradation). The United Nations Convention to Combat Desertification (UNCCD) was elaborated and well articulated as an instrument for achieving sustainable development, with a focus on addressing land degradation issues.

### **UNCCD DEFINITIONS**

**Desertification** is a process of land degradation in arid, semi-arid and dry sub-humid areas, which starts with the loss of vegetation cover and ends with the destruction of the soil's fertility and its transformation into barren desert, resulting from a combination of various factors including climatic variations (mainly high temperatures and low rainfall) and human activities (e.g. burning, overgrazing, poor farming practices).

**Land Degradation** as defined by the UNCCD, is the reduction or loss, in arid, semi-arid and dry sub-humid areas, of the biological or economic productivity and complexity of rain-fed cropland, irrigated cropland, or range, pasture, forest and woodlands resulting from land uses or from a process or combination of processes, including processes arising from human activities and habitation patterns.

**Land** means the terrestrial bio-productive system that comprises soil, vegetation, other biota, and the ecological and hydrological processes that operate within the system.

**Drought** means the naturally occurring phenomenon that exists when precipitation has been significantly below normal recorded levels causing serious hydrological imbalances that adversely affect land resource production systems.

**Combating desertification** includes activities which are part of the integrated development of land in arid, semi-arid and dry sub-humid areas for sustainable development which are aimed at ensuring the long-term productivity of lands.

**Mitigating the effects of drought** means activities related to the prediction of drought and intended to reduce the vulnerability of society and natural systems to drought as it relates to combating desertification.

The main objective of the UNCCD, as stated in the Article 2 of the Convention, is to combat desertification and mitigate the effects of drought in countries experiencing this phenomenon. In the spirit of the UNCCD, "combating desertification" includes activities that are part of the integrated development of

land in arid, semi-arid and dry sub-humid areas for sustainable development which are aimed at:

- prevention and/or reduction of land degradation;
- rehabilitation of partly degraded land; and
- reclamation of desertified land.

The UNCCD recognizes the linkages between poverty and environmental degradation, and is the first international treaty to:

- Address the issues of poverty and environmental degradation in rural areas, particularly in Africa:
- Recognize that grassroots resource users are central to identifying and implementing solutions;
- Adopt a bottom-up approach, involving the active participation of women as well as men in the local communities, in all phases of the development process;
- Emphasize the need for an integrated approach to combating desertification;
- Call for an innovative mechanism - the Global Mechanism - to mobilize substantial resources, through partnership at all levels.

The Convention works principally on a regional basis and it is driven by National Action Programmes/Plans which aim at identifying the factors contributing to desertification/land degradation and the practical measures necessary to combat desertification/land degradation and mitigate the effects of drought.

In May 2003, the council of the Global Environment Fund (GEF) introduced Operational Programme N.15 (OP15) as a specific framework for mitigating land degradation through the adoption of sustainable land management (SLM). The main objective of OP15 is “**to mitigate the causes and negative impacts of land degradation on the structure and functional integrity of ecosystems through sustainable land management practices as a contribution to improving people’s livelihoods and economic well-being.**” Affected countries signatory to the UNCCD are eligible to access GEF funding for projects that promote sustainable land management for the mitigation of land degradation and promotion of ecosystem integrity, stability, functions and services. The OP<sup>2</sup> thus provides a potential funding mechanism for the implementation of activities within Saint Lucia’s NAPSAP, within sustainable land management (SLM) context.

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<sup>2</sup> Eligible countries can access up to USD 500,000 from GEF, matched by an equal amount in co-financing under UNDP sponsored portfolio project to provide capacity building and mainstreaming of SLM

### 1.3 Development of the National Action Programme/Plan (NAPSAP)

In March 2000, a National Coordinating Committee (NCC) comprising fourteen (14) representatives drawn from Government, Government agencies, Non-Governmental Organizations (NGOs), Community Based Organizations (CBOs) and some knowledgeable individuals, was formed. A first national consultation was then held soon after, to provide guidance to the NCC to commence the formulation of a National Action Programme/Plan (NAPSAP).

The UNCCD, National Coordinating Committee (NCC) however, remained basically dormant, participating mainly in the preparation of the country's National Reports to the UNCCD. Having encountered numerous difficulties in obtaining the requisite widespread input from the NCC, and given the limited funding available for the Convention, the MAFF/NFP in March 2005, established an Adhoc Technical Working Group (ATWG) the composition of which is depicted in Box 1.

**BOX 1**  
**SAINT LUCIA UNCCD NATIONAL ACTION PLAN (NAP) ADHOC  
 TECHNICAL WORKING GROUP (ATWG)**

*Convention National Focal Point, Project Coordinator and Chairperson of  
 ATWG: Chief Forestry Officer*

*National Consultant: AGRICO LTD.*

*Technical Working Group:*

2. Biodiversity Unit, MAFF
3. Department of Agriculture – Extension, MAFF
4. Department of Fisheries, MAFF
5. Forestry Department, MAFF
6. Corporate Department, MAFF
7. Water Resources Unit, MAFF
8. Sustainable Development and Environment Section (SDES), Ministry with  
 Responsibility for the Environment
9. Meteorological Services Department, Ministry of Communications, Works,  
 Transport and Public Utilities (MCWTPU)
10. Ministry of Finance
11. Ministry of Tourism and Civil Aviation
12. Physical Planning Department, Ministry with Responsibility for Planning
13. Public Health Department, Ministry of Health
14. Public Works Department, MCWTPU
15. The Saint Lucia National Trust
16. National Emergency Management Organisation (NEMO)

The AWTG took over the role of the dormant UNCCD-NCC to guide the development of the NAPSAP, working in collaboration with the national consultant. This multi-sectoral working group provided expertise from the various fields of land and water resources management as reflected in its composition.

The development of the NAPSAP, a process which has been extremely protracted, has however, provided for a programme of action aimed at correcting, mitigating and preventing the problems of land degradation and drought and for the overall management of the most critical and important natural resource in Saint Lucia, the land resource base, over the short, medium and long term.

#### **1.4 Approach and Methodology**

The approaches used in preparing the NAPSAP included the following:

- **Use of a Participatory Approach**

In developing the NAPSAP, particular attention has been paid to promoting and engaging civil society and the general public consistent within Article 10, paragraph 2(f) of the UNCCD, given that civil society is expected to play a key role in the implementation of NAPSAP in Saint Lucia. In this regard a stakeholder analysis was conducted and extensive consultations and focus group meetings were conducted since 2000. National awareness seminars and consultations were conducted at various junctures to consolidate and validate feedback on the evolving NAPSAP. In some cases, interviews with key individuals were also conducted, to harness existing institutional memory to refine the inputs into the NAPSAP.

The engagement of the many stakeholders in the participatory, planning and development process has served to identify the degree of degradation of the land resource, the root causes for the degradation of the resource and opportunities and practical solutions that are available for arresting, restoring, rehabilitating, reforestation and improving the physical and biological structure of the land.

- **Use of a Results Based Approach**

A results based approach to programme management was utilised to formulate the programme for the NAPSAP. This approach was used to

- Provide realistic results;
- Identify beneficiaries, their needs and priorities;

- Develop a monitoring and evaluation process, including identification of appropriate performance indicators.

- **Situational Analysis as the Basis**

In order to derive the context for the NAPSAP, a situational analysis was undertaken as a first step and presented in the Country Study Report on Land Degradation and Drought in Saint Lucia. The NAPSAP must therefore be placed within the context of this companion document, as it provides the detail and the background to the NAPSAP and the final synthesis of the priority issues and challenges to be addressed within the NAPSAP with respect to land degradation and drought, as well as the implementation of the UNCCD, over the short, medium and long term.

- **Cognisance of Conditions Precedent**

The aims and objectives of the NAPSAP are primarily, built on the objectives of the National Land Policy. Thus the objectives embodied in the NAPSAP serve as the point of departure for a results based approach, for implementation of the National Land Policy.

Within the broader framework of land and water resources management, several other policies have already been adopted and some in the implementation phase, by the government of Saint Lucia. These include the, National Environmental Policy (NEP/NEMS), the Agriculture Sector Policy and Strategy, and the National Water Policy. The NAPSAP also gives cognisance to these policies drawing on the principles enshrined in these policies, in particular the National Environmental Policy and National Environmental Strategy (NEP/NEMS), which is considered the overarching instrument for ensuring an integrated approach to national development planning.

Further alignment is also sought with the several international and regional agreements, treaties and protocols, which the country is signatory to, and which which have a bearing on land and environmental resources, including the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD) based on the NCSA process, the Millennium Development Goals (MDGs), Agenda 21, the SIDS-Programme of Action (SIDS – POA) and St. George's Declaration of Principles for Environmental Sustainability.

The NAPSAP thus provides a convenient avenue for deriving synergies in the implementation of activities towards meeting the country's commitments to its environmental and development agenda, through the advancement of the NCSA process. The NAPSAP also aims to build on collaborative approaches being

embraced towards mainstreaming environmental management within the development agenda, including the recent initiatives involving the endorsement of the Environmental Management Act (Draft, April 2008) and the establishment of National Environment Commission (NEC) as an overarching agency to address the problem of coordination and collaboration of agencies on environmental management issues.

A National Action Plan and Strategic Action Plan (NAPSAP) to combat land degradation and drought is vital, to stem the continued loss of the productivity of the country's soils occurring through processes of soil erosion, land slippage and land pollution/contamination, as well as reverse the trend of the progressive dwindling in the availability of the island's fresh water resources. The NAPSAP will provide opportunities for conserving the country's biodiversity, and prevent further deterioration in the quality of the island's coastal, marine and fresh water resources. This in turn will minimise the risk to and enhance sustainable opportunities for the key productive sectors of agriculture and tourism sector, and facilitate future social and economic development.

The NAPSAP is thus broad based and establishes strategies and priorities within the framework of sustainable development, recognizing that the sustainable management of the land resources of Saint Lucia is critical to socio-economic development, particularly with respect to sustainable livelihoods. The implementation of the NAPSAP will promote national and local awareness and facilitate the participation of local communities and non-governmental groups in programmes to reduce land degradation and mitigate the impacts of drought. In fact, the fulfilment of the objectives of the UNCCD provides a vehicle for the country's successful pursuit of sustainable development.

While the primary beneficiaries will be persons in the farming communities, benefits will also accrue to land owners, land and water resource users and agencies, including business developers in key economic sectors, from the improved physical and biological structure of the land, a reduction in sedimentation of flood plains and valleys, improved quantity and quality of water resources, reduction in negative impacts on coastal resources and, in general, greater protection of the environment, human health and life.

This draft final document is considered an unofficial document based mainly on the outcomes of broad based consultation with key stakeholders and subsequent final national consultations in the north and south of the island for consideration

and adoption of the plan. The document on submission to the Cabinet Ministers will be approved and given legal endorsement either as:

- An Official government document, or
- An Official document approved by the legislature.

## 2.0 LAND DEGRADATION AND DROUGHT ISSUES AND CHALLENGES

### 2.1 General Land Degradation and Drought Issues

Land degradation has been known to be caused by complex interactions of physical, chemical, biological, social, political and cultural factors. In Saint Lucia most of the land degradation has been as a result of human action and not solely by climatic effects. This phenomenon is comparatively cited in the context of the phenomenon of land degradation/desertification which has occurred in Haiti<sup>3</sup> as a result of human action, to the detriment of its people.

The impacts of land degradation (such as high levels of sedimentation) have also been identified as the main problems negatively affecting the health of coastal resources.



Photos: Internet - August, 2008 - Flooding effects of Hurricane Ike on a deforested Haiti.



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<sup>3</sup> Haiti provides a tangible example of the effects of “desertification” in the Caribbean region, where the use of wood as source of energy has resulted in a decimation of the country’s forest resources. Consequently hundreds of people die every year as a result of flash flooding and suffer the serious effects of hunger as the loss in soil productivity has resulted in a significant decline in the agricultural production to the detriment of its people.

The effects of land degradation and drought on the island are generally characterised as being economic, social or environmental in nature and include:

- reduction in available water (irrigation, domestic) evidenced by the apparent progressive dwindling of the islands freshwater water resources, (which are essentially derived from surface water);
- reduced soil and ecosystem productivity;
- sediment and erosion damage to productive and transportation infrastructure reflected in increased levels of siltation of major drainage systems and increased incidents of land slippage in areas of human settlement;
- loss of habitat and biodiversity due to high sediment levels in coastal areas, seen in the resultant negative impact on coral reef systems.
- driver for poverty and declining food security, health, etc.

A number of issues have been identified which contribute to mismanagement of Saint Lucia's land resources, and ultimately, have led to land degradation and the occurrence of drought. Unsustainable resource management practices are often induced by the disruption of social systems, the under-valuation of traditional knowledge, inadequate government policies, weak institutions, increasing population pressure and poverty.

A summary of issues, which are described in greater detail in the UNCCD Country Study Report, are presented in Appendix 1: Possible Impacts of Land Degradation on Small Island States such as Saint Lucia.

Root causes of land degradation identified include:

- Physiographic and climatic variations
- Fragile soil types
- Prevailing land tenure systems
- Limited areas available for development creating intense competition between often limited land use options. This has resulted in increased activity in the upper watershed or other sensitive areas, affecting the landscape/endemic flora/fauna and impacting on river and coastal water quality.

Man-made causes of land degradation identified include:

- deforestation,
- unsustainable agricultural practices (poor soil and water conservation/drainage, over-irrigation),
- continuous intensive cultivation, and
- inadequate development controls and absence of good governance with respect to planning and management of physical developments, including construction of buildings and infrastructure.

*The most commonly recognised processes of land degradation and drought in Saint Lucia include deforestation, accelerated soil erosion, riverbank erosion,*

*declining soil fertility and soil physical structure, reduction in drainage capacities and increased incidence of flooding, increasing incidences of land slippage, reduced stream base flow and increasing water shortages, high sedimentation rates in rivers and coastal waters resulting in the loss of ecosystem functions and services due to soil and water pollution/ contamination, and overall loss of biodiversity.*



**Plate 1: Commonly recognised processes of land degradation in St. Lucia**

These are largely due to poor agricultural practices and in more recent times, poorly managed road construction and urban expansion, including physical and infrastructural developments for tourism and housing.

In Saint Lucia’s National Report to the Barbados Action Programme, soil erosion has been deemed to be the largest contributor to land degradation and the most significant problem being faced by the island. Areas most affected, are those where deforestation and intensive agriculture have and are being practiced. The estimated annual erosion rates for agricultural and forest watersheds were at 73.3 and 7.2 t/ha (Cox, 2003).

Soil erosion occurs both incrementally as a result of small rainfall events, and more dramatically as a result of larger storm events. Soil erosion is enhanced during periods of drought due to the drying out of the topsoil and effective loss of soil structure and aggregation. In this condition topsoil is easily blown or washed away as a result of the erodibility of the soil and the erosive nature of wind and rainfall.

Land degradation also impacts the various types of ecosystem services. Apart from the loss of fertility and productivity of the land itself, which ultimately affects

livelihoods on the whole, there are significant implications with respect to loss of biodiversity. Biodiversity loss is associated with the:

- loss of terrestrial and marine habitats. Surveys conducted on several coral reef areas around Saint Lucia during the period 1999-2004 showed that there has been an overall decrease in hard coral cover.
- reduction in water availability, which has national implications and an aspect which has been drawing considerable attention.
- decrease in the aesthetic value of beaches and recreational areas are also affected, thereby depleting the tourism product as well.

## **2.2 Economic Issues**

- **Agriculture and Food Security** - Agriculture has traditionally been the mainstay of the island's economy; the poor management of land in the context of agriculture continues to be a key contributor to environmental and land degradation in Saint Lucia, largely as a consequence of the deforestation and associated unsustainable agricultural practices.



### Plate 2: Land degradation resulting from intensive agriculture

The potential loss of soil productivity is a threat to the sustainability of agriculture and food production; agriculture and food production is particularly dependent on the upper horizons of the soil, which are most vulnerable to erosion by water and wind. Reduced agricultural and food production in conjunction with associated global risks of increased food prices and rising fuel costs, are direct threats to national food security.

- **Development Imperatives** - The Island's economy is being radically transformed, with traditional sectors such as agriculture, losing importance and new sectors, in particular the tourism sector, gaining greater prominence. Non-agriculture related land use still tends to be in conflict with prescribed land capability, as the country pursued economic development. Further, development which is largely driven by socio-economic needs, often takes place in sensitive areas, affecting the landscape and biodiversity. Steep slopes and other fragile land areas are routinely cleared for tourism and housing developments with little emphasis given to reducing the negative impacts. Forested and protected areas continued to be viewed by developers as wastelands which could be put to better economic use. Changes in the economic landscape, accompanied by competing demands for land and water, thus present immense challenges, but also new opportunities, for the sustainable use, management and conservation of land and water resources.
- **New Trading Regimes** - Changes in the trading environment, especially relating to agreements that the island is party to (e.g. World Trade Organisation (WTO), the Caribbean Single Market and Economy (CSME), and the European Union's Economic Partnership Agreement (EPA)) will present much challenge as efforts are made to develop appropriate

- responses such as the need for economic diversification while balancing environmental sustainability.
- **Land Markets** - Unregulated land market speculation result in changes in land use which oftentimes are associated with unsustainable practices, thereby further contributing to land degradation.
  - **Natural Resource Valuation** - Greater recognition of the importance of land to the country is required including the linkages with economic sectors. Economic valuation of land and water resources would provide the basis for informed decision making with respect to land management.
  - **Drain on Economic Resources** - While there is little detailed data on the economic losses resulting from land degradation and drought, there is no doubt of the huge drain on the country's economic resources as evidenced by the oftentimes colossal losses resulting from human injury, loss of lives and destroyed infrastructure, crops and livestock, and household, and commercial and industrial assets.
  - **Funding and Financing** - To mitigate the associated effects of land degradation and drought that threaten the economic well being of people and the integrity, stability functions and services of ecological systems in the long run, will require planning and relatively high technical and financial investments. For example, flood mitigation projects costing several millions of dollars have had to be implemented in Castries, Dennery and Anse-la-Raye, with interventions still required in other coastal areas. However, while the issues of land degradation and drought are recognized by most existing environmental policies, these issues are currently not **mainstreamed**, and **are often not** at the forefront of national debate. As a result, government's budgetary allocations to address land degradation and drought are inadequate. Economic valuation of the country's land resources would greatly assist in generating more realistic estimates for budgeting and financing of land management.

### 2.3 Social Issues

- **Population Growth and Demographic Changes** – Population growth and the resulting urban expansion have adversely impacted the management of the island's land resources. The construction of roads and the proliferation of many unplanned settlements to provide varied forms of human settlement, bring along attendant issues of poor drainage and disposal of material, major contributors to the process of land degradation. The island's water resources are also impacted by the increase requirement for a reliable and good quality water supply.

- **Employment and Poverty** - There has been an established positive correlation with increasing incidence of poverty and the increased vulnerability to factors of land degradation. The Poverty Assessment (2005) identified the decline in earnings from the banana industry, and the shrinking of the export-oriented light manufacturing and assembly sector which created a high level of unemployment, as some of the main causes and sustaining factors of poverty in Saint Lucia. Falling banana earnings have also had a ripple effect into other areas of the economy, spreading poverty beyond the agricultural sector. The interrelationship between poverty and land and the potential threats to the welfare of the rural population, thus provides a means for addressing issues of land management, using the minimum poverty reduction platform outlined in the 2005 Poverty Assessment Report; specific measures have been recommended for management of land assets and resources consistent with the needs of the various sectors.
- **Land Use Changes** - While no major land use assessments have been undertaken since the 1980's, aerial photographs taken in 2004 and agricultural census data (2006) point to significant changes in land use: in particular, a considerable decline in lands under agricultural production with these lands going into alternative, and in most instances non-sustainable uses for other development, contributing to land degradation.
- **Social Stability** – Land degradation has enormous social costs. When land degradation occurs at an alarming rate, severe pressure is brought to bear on the available resource in and around communities. This causes migration and dislocation of people, accompanied by conflicts and loss in cultural identity, which further undermine social stability.
- **Traditional Knowledge** - Underlying causes of land degradation are related to the poor knowledge, attitudes and practices of farmers and land owners/users, in an inextricable link to livelihood status. There has been a progressive decline in the use of traditional knowledge. The consequent loss of this knowledge may adversely affect land use, management and conservation efforts.

## 2.4 Environmental Issues and Challenges

- **Climate and Weather** - Desertification, land degradation and drought are naturally occurring phenomena influenced by climatic effects. The surface energy balance of the natural system has been altered, mainly as a result of the changes in land use over the years. Owing to this shift in evapotranspiration, Saint Lucia, over the last decade, has experienced prolonged drought conditions and this is likely to continue given the current rate of land and watershed degradation. Further, natural climatic

variations can affect drought-prone areas, and the long-term effects of climate change may worsen already critical areas.

- **Pollution and Waste Management** - Pollution stemming from agricultural, domestic and industrial sources has been largely associated with the degradation of land and water resources. Agricultural pollution has been largely associated with agro-chemical use and the main areas affected have been the rivers, coastal mangroves and the near shore environment. Illegal dumping of waste, particularly hazardous and bulky waste still occurs at informal dumpsites and in waterways, leading to pollution of both land and water; a situation that further contributes to the increased incidence of flooding. Sediment overloading from pumice mining/quarrying close also contributes to the pollution of the rivers and waterways. The control of the generation, storage, treatment, recycling and reuse, transport, recovery, and disposal of hazardous wastes, especially pesticides, household chemicals and industrial contaminants will continue to pose a tremendous challenge to the management of land and water resources, and the environment as a whole.
- **Vulnerability and Risks** – Inappropriate land use and management, and the resultant land degradation ultimately increase the island's vulnerability to disasters, especially to the impacts of flooding and landslides. There is also growing concern about the vulnerability to the non-traditional threats of hazards arising from human activities and habitation patterns, including climate change and sea level rise, and biodiversity loss. Reduction in the land's vulnerability weakens the natural resilience, with both physical and socio-economic consequences. Disaster risk reduction and mitigation is thus critical for protecting health and safety, in terms of both human life and the country's natural resources.

## 2.5 Policy and Legislative Issues and Challenges

- **Policy Framework** – Economic growth and sustainable development issues continue to be discussed in isolation of the land degradation and drought problems. However, several policies, strategies and other statements in various sectors, relevant to regulation of the management and use of lands, or that address some aspect of land degradation, albeit to varying degrees, have or are being developed and or implemented. The lack of a coordinated policy framework to facilitate mainstreaming of land degradation and drought issues into environmental and other policy areas, however, can lead to policy decisions across and even within sectors that can potentially exacerbate land degradation and drought. The National Land Policy aimed at improving and rationalising land (terrestrial and marine space) use and management, enacted in 2006, needs to be put into force, to provide the much needed coordinated framework for

harmonising the several and diverse policies for managing development imperatives to minimize the potential negative impacts on the island's land and water resources.

- **Improved Policy Mix** - Actions are currently being pursued aimed at improving the policy mix under the EU Special Framework of Assistance (SFA) 2003 programme, Economic and Agricultural Diversification and Poverty Reduction through Integrated Natural Resources Management, System for Environmental Services Incentives. This involves the development of a framework for Compensation for Environmental Services (CES/PES) which seeks to develop a market based approach to watershed management, including mechanisms, incentives, standards, etc.
- **Legislative Framework** - The unprecedented rapid rate of changing land use is a manifestation of the lack of adequate development controls, and points to a need for instituting new controls and enforcing those that already exist. There are a number of laws for regulation of the management and use of lands, many of which were enacted prior to accession to the UNCCD, and thus, are not fully accommodating of the implementation of the Convention. Further, the frequent disregard for established procedures such as Environmental Impact Assessments (EIAs) is also an impediment to the rational, effective and efficient management of land resources. Implementation of the NLP should provide the framework for the review and formulation of specific laws and regulations, including the enforcement of existing ones where necessary. Instruments such as Environmental Impact Assessments (EIAs) could also be utilised for monitoring and enforcement for compliance to guidelines for land management, as is currently being done for biodiversity management. It is also envisaged, that recent initiatives such as the pilot praedial larceny project in the Ministry of Agriculture aimed at developing solutions for managing environmental related infractions, could assist in addressing issues related to the regulatory framework.
- **Land Tenure** - There are several impediments related to land ownership that would need to be resolved to support the legislative framework. The system of land tenure continues to be a major constraint to land management and conservation. Many persons operating on lands do not have clear title to these properties, and as such, have little inclination to conserve and use sustainably the land resources.

## 2.6 Organisational and Technical Capacity

- **Coordinating and Collaboration** - As is the case for environmental management in general, existing barriers to sustainable land management are compounded by the critical gaps and overlaps in institutional responsibilities, insufficient collaboration among public sector agencies, and a high degree of fragmentation of authority and roles among the wide range of land management agencies. Further, the implementing agencies for the various multi-lateral environmental agreements (MEAs), including the UNCCD, tend to be overtaxed by the competing demands of their own work programmes, including the reporting and other obligatory activities required for implementation of these agreements. This is evidenced in inefficient and ineffective coordination of activities, poor communication and in some instances, failure to achieve set targets. Issues of custody, accountability and authority need to be rationalised to ensure effective land management. In addition, arrangements to foster co-management and participatory approaches need to be clearly defined. Recent initiatives by the GOSL, including the endorsement of the Environmental Management Act (Draft, April 2008) and the establishment of National Environment Commission (NEC) as an overarching agency for environmental management should serve to create the kind of institutional framework required to resolve the problems of coordination and collaboration among agencies on environmental management issues.
- **Capacity:** Designated land management institutions/agencies have inadequate capacities and lack the resources to fulfil their mandates – organisational capacity development is an imperative for NAPSAP implementation. The advancement of the National Capacity Needs Self-Assessments for Global Environmental Management (NCSA) process will assist in the identification and development of the requisite capacities for global environmental management.
- **Information and Knowledge Management:** The inadequacy of decision support systems with regard to research and systematic observation, monitoring and evaluation and dissemination of data and information must be addressed.
- **Cultural Attitudes:** The attitude of civil society to effecting land management practices that maintain a healthy environment is inadequate. This issue is further compounded by the inability of relevant agencies to establish and effectively monitor and enforce compliance to protocols in this regard. A culture of sustainable land use and management, including land conservation needs to be built at all levels of society. The primary focus of public education and outreach should be young persons, where it is still possible to engender attitudinal changes that promote sustainable

management and wise use of land resources or correct negative impacts of land degradation and drought.

## **2.10 Priority Areas**

The Country Study Report, based on the wide-ranging commitments under the UNCCD, the issues and challenges and opportunities in terms of initiatives undertaken, identified seven priority areas for the NAPSAP that will ensure a holistic approach to resolving the problem of land degradation and drought and for the successful implementation of the Convention.

1. Functional National Coordinating Body/Focal Agency for coordinating implementation of the NAP to promote a more holistic approach to land degradation and drought within the context of an overall national sustainable land management strategy;
2. Amend, implement and enforce more relevant policies and up-to-date legislation for creation of an improved policy and legislative environment that reflect the realities of the present day, to enable the process; suitable policy mix (land policy/water policy/ CES, incentives for sustainable land management etc.); enforcement of legislation/regulations;
3. Capacity strengthening – Improve institutional and human resources, and acquire adequate financial resources to effectively coordinate land degradation and drought mitigation efforts and action and to ensure that these are incorporated into work programmes and corporate plans of implementation agencies;
4. Public Relations Strategy to increase level of awareness on UNCCD issues among key agencies, Ministries of Government and publics, to facilitate mainstreaming of land degradation and drought issues into work programmes.
5. Establish appropriate information and communications management systems to assist in promoting better understanding of Convention and impacts of land degradation and drought;
6. Improve systems for research and systematic observation, including human and technical resource, for monitoring and evaluation of land degradation and drought,- including baseline studies, establishment of benchmark and indicators for assessment of the root causes of land degradation and factors that cause drought, mapping of degraded and

drought-prone areas; development of early warning and forecasting systems to include drought assessment methodologies, indices etc.;

7. Determine and implement response mechanisms for land degradation and drought mitigation.

### **3 THE PROGRAMME**

The aforementioned priority areas provide the basis for the response formulated in the NAPSAP, in respect of strategic actions and programme/project interventions.

Pursuant to the foregoing, the following four programme areas have been identified as the four pillars of the NAPSAP, under which the many issues which contribute to mismanagement of the country's land resources and ultimately have contributed to land degradation and the adverse impact of drought will be addressed:

- 3 Behavioural Change
- 4 Capacity Development and Institutional/ Organisational Strengthening
- 5 Sustainable Land Management (SLM)
- 6 Disaster Risk Reduction and Early Warning Systems

Notably, these four programme areas are mutually reinforcing and will be implemented simultaneously, with recommended actions targeting the following thematic areas:

- **Thematic Areas:**

The key thematic areas to be addressed include:

- Land Use and Management
- Water Resources and Water Resources Management
- Environmental Management
- Sustainable Development
- Millennium Development Goals
- Poverty Reduction and Sustainable Livelihoods
- Forest and Wild Life Protection
- Pollution and Waste management
- Public (animal and plant) health
- Disaster Management
- Information and Communication Management

Monitoring and Evaluation of the NAPSAP, is also considered critical to the proposed results based approach.

Further, due cognizance is given to the interrelationship with the six thematic programme networks (TPN) approved by country parties from Latin America and

the Caribbean, and which provide a broad framework for addressing land degradation issues in a systematic manner. The TPN are as follows:

1. Identification and use of Benchmarks and Indicators of Desertification and Drought;
2. The Regional Information Network on Desertification and Drought (DESELAC);
3. Integrated Water Resource Management;
4. Agro-forestry and Combating Poverty;
5. Best Practices and Traditional Knowledge;
6. Renewable Energy.

The programme areas have been translated into result areas, under which a number of recommended actions have been proposed and are further elaborated in Section 9. The framework for implementing the recommended actions is presented below and summarised in Table I which shows the linkages among the vision, goal, outcomes and the result areas.

### **3.1 VISION**

The vision of the NAPSAP is the systematic and sustainable management and conservation of the land resources of Saint Lucia as a valuable natural resource and economic asset to meet current and future social and economic development, cultural and ecological needs, through measures that ensure the long term productivity of land and integrity of the water resources for the benefit of all its citizens.

### **3.2 GOAL**

The goal of the NAPSAP is the creation of a holistic and cohesive framework for integrating the sustainable use and management of the country's land resources into national development, ensuring that both the intrinsic/natural and man-made factors (root causes) contributing to land degradation and drought are effectively addressed, through a fully participatory approach.

### **3.3 AIMS AND OBJECTIVES**

The primary objective of the National Action Programme to Combat Desertification/Land Degradation in Saint Lucia (SLU-UNCCD-NAPSAP) is to stem the continued loss of the productivity of land and reverse the declining trend in the availability and quality of the island's water resources, to ensure a sustainable quality of life for the people of Saint Lucia.

The NAPSAP will integrate as one of implementing tools for the national Land Policy, to provide an integrated framework for mitigating the physical, biological and socio-economic impacts of land degradation and drought on the island. In this regard it will provide further opportunities for deriving synergies with current and emerging initiatives in land and water management.

The NAPSAP also purposes to provide a comprehensive framework for implementing the country's obligations under the United Nations Convention to Combat Desertification (UNCCD).

Thus, through a three phased implementation (short, medium and long term), the Programme aims to achieve the following outcomes:

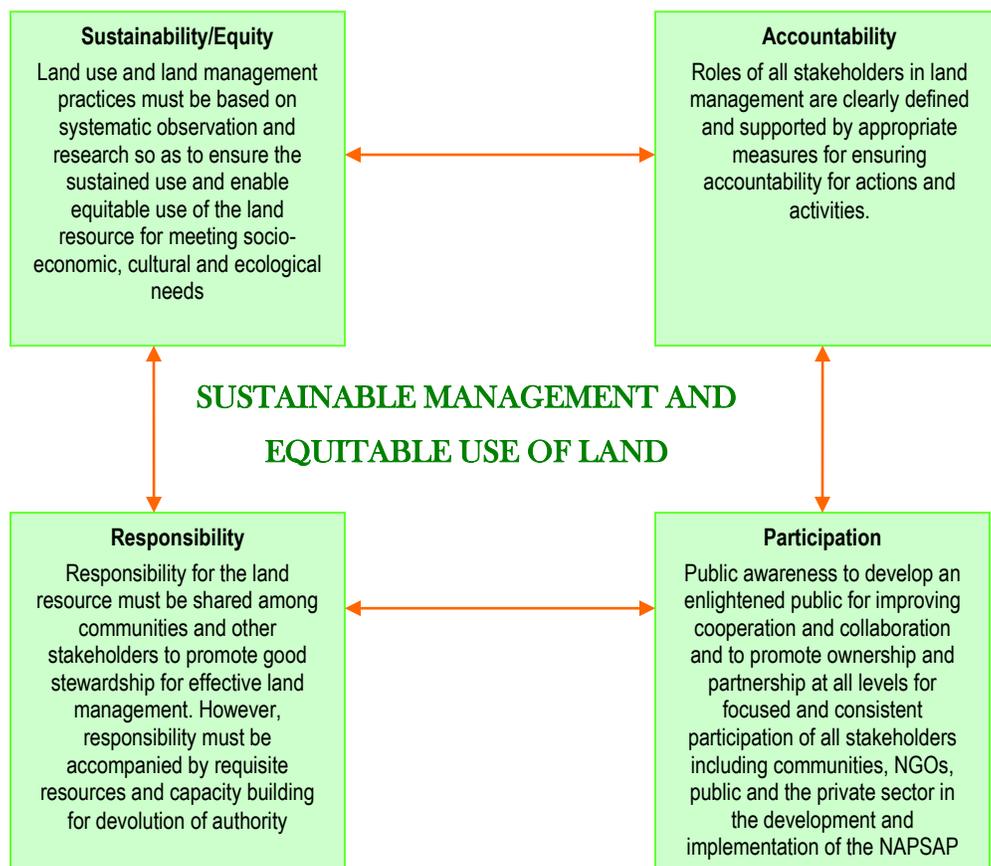
- An enlightened society capable of responsible action with respect to sustainable land management issues;
- Sustainable and equitable use of use of the country's natural resources to satisfy current and future socio-economic, cultural and ecological need;
- More systematic observation and monitoring of land resources (processes and interactions) and the provision of requisite information systems to ensure sustainable land management;
- An improved regulatory and legislative framework that will provide appropriate protection of the land resource base, supported by appropriate authority and resources to promote good stewardship and effective land management;
- Functioning formal mechanisms for institutional collaboration and cooperation;
- Institutionalising of conservation, mitigation and other measures and practices.

The NAPSAP has also been developed for the specific purpose of:

- providing a reference point to government, non-governmental and community based organizations, land resource users and the general public to enable participation in the design and implementation of programmes and actions to combat land degradation and mitigate the effects of drought;
- defining a comprehensive mandate for land management authorities, developers and policy-makers;
- assisting in garnering support at all levels for the implementation of the Plan in synergy with other related programmes and activities such as NBSAP, UNFCCC, etc.

### 3.4 GUIDING PRINCIPLES

Figure 1 outlines the set of principles, hinged on the sustainable land management (SLM) approach, which will guide the implementation of the NAPSAP and which will be used to achieve its goals and objectives. They encompass the principles set out in the Convention and are based on the sentiments articulated during the participatory/consultative process.



**Figure 1: Guiding Principles for Implementation of National Action Programme for Implementation of the UNCCD**

These principles are in accord with the guiding principles in other relevant policies, and in particular the National Land Policy, which encompass: *Equity; Rights; Stewardship; Leadership; Accountability; Collaboration and participation; Enforcement; Efficiency; Capacity building; Coordination and integration; Protection of common property; Precaution; Provision of incentives and disincentives; Diversity; Public awareness; Knowledge.*

## **4 STRATEGY AND ACTION FRAMEWORK**

The NAPSAP consists of key strategies and actions aimed at addressing the issues of land degradation and drought mitigation utilising a sustainable land management (SLM) approach, which promotes judicious use of land resources. These actions, including the implementation of projects, range from public education and awareness, protection of soil and water resources to institutional reform and development. All of the activities work towards behavioural change and the establishment of a holistic and cohesive framework for the sustainable and equitable use of the country's land resources. In carrying out these actions and projects the following strategies and actions will be used to ensure success of the NAPSAP. It is expected that these strategies and actions will lead to significant changes on the ground and facilitate tackling of the particularly challenging land degradation issues at hand.

The recommended strategies and related actions are outlined under the programme areas below. These are further categorised into result areas and targets to achieve the desired outcomes in Section 6.

### **1 Establishment of Framework for Behavioural Change**

- i. Promote behavioural change
  - Ensure a participatory process that is culturally sensitive
  - Undertake public education and outreach (PEO) activities for heightened public awareness and consciousness
  - Improve information management on land degradation and drought situation with particular focus on impacts on livelihoods
  - Provide incentives to promote private and community partnerships

### **2 Capacity Development and Institutional/ Organisational Strengthening**

- i. Strengthen institutional capacity
  - Improve capacities at all levels for cooperation and collaboration
  - Promote physical, human and institutional linkages
- ii. Enhance the policy, legislative and institutional framework
  - Fast track implementation of national land policy
  - Strengthen existing land and water resources related policies, legislation and management structure
  - Enforcement of policies and legislation related whether directly or indirectly to land management by various agencies
  - Promote collaboration on part of agencies with overlapping mandates

- Utilize integrated development planning and integrated watershed management approaches
- Improve data management and information sharing among agencies/stakeholders
- iii. Build human resource capacity for sustainable land management
  - Expand and enhance education and outreach programmes that are sustainable
  - Build technical capacities through training and skills upgrading

### **3 Sustainable Land Management (SLM)**

- i. Implement interventions for amelioration of poor land productivity
  - Establish programmes to monitor factors affecting soil quality
  - Develop and adopt best practice in land management e.g. Good Agricultural Practices (GAPs), etc.
- ii. Implement interventions to address declining water resources
  - Establish integrated watershed management programmes and plans
  - Adopt improved forest management strategies
  - Improve soil quality
- iii. Pollution control/prevention
  - Improve waste management on part of public
  - Improve practice with respect to proper disposal of agrochemicals
  - Proper treatment of waste water
- iv. Adopt and promote sustainable land use practices
  - Institute best practice in agriculture
  - Establish proper infrastructure in new developments and housing projects
  - Strengthen development planning process and policy
  - Address existing land tenure issues, squatting, etc.
  - Address issues of poverty which are underlying causes of land degradation
  - Improve mining/quarry management

### **4 Disaster Risk Reduction and Early Warning Systems**

- i. Establish systems for Disaster Risk Reduction
  - Undertake vulnerability and adaptation assessments
  - Design systems for early warning that are community-based

- Identify, map and continuously update information for effective management of land resources including, flood, drought, landslide risk and debris flow hazards, within an integrated watershed context

## **5 Monitoring and Evaluation**

- i. Establish monitoring and evaluation system capable of monitoring progress of both NAPSAP and implementation of UNCCD
- ii. Establish benchmarks and indicators for systematic observation and research for effective monitoring of land resources including:
  - Establish systems/methodologies and indicators for ongoing monitoring
  - Undertake appropriate research and systematic observation including proper data collection, analysis and reporting

## **5 CONDITIONS AND REQUIREMENTS**

The critical conditions and requirements for the successful implementation of the NAPSAP and achieving the objectives of the NAPSAP are as follows:

1. Political commitment and bureaucratic will - The supreme policy makers, as well as the resource users, must be apprised of the value of land to the country's development and the resulting consequence of the impacts of land degradation and drought; hence, the importance of implementation of the UNCCD. Mechanisms and activities to be pursued to achieve this must address the devolution of power, authority and allocation of resources to ensure that the community and individual levels are a part of the decision making process.
2. Appropriate policy, legislative and regulatory environment to promote good governance - including increased surveillance, monitoring and enforcement to ensure the integration of land management imperatives within the broader social and economic development agenda.
3. A functional Environmental Management Framework to provide for:
  - More effective participation - The involvement of affected populations and collaboration and cooperation among all stakeholders will require a change in the traditional method of engagement with respect to community groups to methods that promote more participatory discussion.

Groups must be persuaded to initiate and catalyse the process, thereby mobilizing the Government into action; hence, people would be empowered and mobilized to effectively participate in addressing land management issues.

- A comprehensive and integrated long term national sustainable development strategy. Such a strategy should address the underlying causes of land degradation, in particular, poverty. Further, a more integrated approach to poverty eradication must be adopted taking into account the link between poverty and environmental degradation, especially in rural areas.
- Institutionalisation of a long term programme of systematic observation and research of the nation's terrestrial and marine environments - To effectively address land degradation and drought issues, decision making must be based on sound information. Further, this would facilitate monitoring and evaluation of management measures relating to land and water resources, and measuring the effectiveness of the NAPSAP. Strengthened linkages – integrated land, water, coastal and watershed management/sector policies.
- Sustainable financing- this will require public/private sector partnership to generate investment in sustainable land management.

In addition, the successful implementation of the NAPSAP will depend on the strengthening of linkages among the various sectors of the economy to facilitate the simultaneous implementation of appropriate policies and programmes in key sectors, such as:

- *Integrated land, water, coastal area and watershed management* – the adoption of an integrated watershed management approach that incorporates the elements of the NEP/NEMS, National Land Policy, National Water Policy and Coastal Zone Management Policy, among others, into a national sustainable development strategy and the design and implementation of integrated watershed plans for critical areas is needed;
- *Agriculture* – the ongoing transformation and modernization of the sector utilizing appropriate technologies, such as GAPs, to minimize negative environmental impacts and promote sustainable use and management of land and water resources;
- *Forestry* – the strengthening of capacity in this sector, to regulate land management within an integrated watershed management framework to ensure stabilisation and maintenance of forest cover, and to introduce and

- sustain SLM programmes and actions for protection of land and water resources;
- *Tourism*: the rapid growth in this sector must be guided by policies which guarantee the integrity of the natural resource base, particularly the natural landscape and near shore marine environment, to ensure a sustainable tourism product;
  - *Construction*: the need to promote sustainable land use and development practices to manage the negative environmental impacts of this sector and mitigate the risk of associated disasters.
  - *Education*: the adoption of fresh approaches to public education and outreach aimed at change in knowledge, attitude and practice towards sustainable land management;
  - *Social Transformation* – the implementation of complementary strategies such as poverty reduction strategies, with particular focus on the management of land assets and resources for the creation of more stable communities with improved capacity for more sustainable use and management of land and water resources.

## 6 PROGRAMME AREAS

This five programme areas are further elaborated under result areas and within set targets aimed at achieving the desired outcomes within specific timeframes during the 10 year period. The activities under the five result areas have been colour coded time frames depending on the commencement period for the activity, as follows:

<b>Commencing immediate to short term period</b>	<b>2008 – 2009 commencement</b>
<b>Medium term actions</b>	<b>2010 – 2013</b>
<b>Long term actions</b>	<b>2014 – 2018</b>

The Inter-Agency Mechanism (I-AM) referred to within the various tables is described in the framework for implementation is elaborated in the Section 7, and is proposed as the lead entity for implementing activities under the NAPSAP.

### 6.1 Establishment of the Framework for Behavioural Change

### **Objective**

To improve the knowledge base and employ the best available tools and mechanisms to influence and bring about a change in peoples attitudes and improve the practice of making wise choices with respect to decision making on land issues.

### **Implementation**

Land degradation is largely the result of poor practices due to limited knowledge or poor attitudes towards the management and utilisation of land resources. As such, sustainable land management calls for public and private sector organisations, Government, communities, corporate citizens and individuals, to take actions to manage land resources sustainably and correct negative impacts that may have been brought about by their actions.

However, while public education programmes increase people's awareness and concerns about environmental management, they do not often result in a functional change in the attitudes of persons. Functional change instead, is the outcome of long term and complex processes which require knowledge and mechanisms to promote certain behaviours and to transform people's psyche to make them more conscious and appreciative of environmental issues. Knowledge of the social and cultural factors which influence people's choices and behaviours is therefore central to the implementation of an education and outreach programme for attitudinal and behavioural change. Further, the approach used has to be aggressive and consistent with accompanying systematic observation to monitor and understand the choices that are made by the population over time.

Information is what will ultimately catalyse stakeholders into some type of action and it is essential therefore that data not only be captured within databases, but that it is translated into information resulting which must be made accessible and available to the relevant stakeholders. Focused attention will, therefore, be given to developing capacities to facilitate the development, application and diffusion, including transfer of technologies, practices and processes for mitigation and conservation, including the application of best available practices.

The strategy to promote behavioural changes will involve the **Establishment of the framework for behavioural change (enabling environment)** and is one of facilitation and working with people in their efforts to transform deep-seated negative behaviours towards the environment. The creation of this framework will be underpinned by a comprehensive public awareness, education and outreach

programme (PEO). The PEO programme will further, build on existing PEO programmes for the environment, and seek to present a stronger focus on land degradation and drought issues with respect to sustainable land management (SLM) and risk reduction.

This programme area will be implemented by way of a combination of actions and projects aimed at facilitating and working with people to engender positive behaviour towards the environment including:

1. **Leading by Example** – Requires Government to provide clear and consistent messages with respect to the importance of sustainable management and wise use of the country's land resources; Institute integrated development planning process, to ensure that SLM is considered in all national development initiatives.
2. **Facilitation** – Through the support of municipal, local community and group actions that will increase environmental awareness and lead to behavioural changes. Pilot and demonstration sites will be established in strategic locations to showcase best practices related to sustainable land management, to influence attitudes and practices towards land management.
3. **Provision of an enabling environment** – Through the conduct of public education programmes, media campaigns, skills training; the strengthening of the institutional and harmonisation of the legislative framework, strengthening and enforcement of environmental standards and regulations, including the introduction of incentive and penalty systems. Within the emerging Environmental Management Framework, a facility similar to that of an Environmental Trust Fund will be established and operationalised to support implementation of activities in support of NAPSAP implementation.
4. **Creation of Partnerships** – Collaboration among State agencies, the private sector, NGOs, CBOs, communities, and individuals in projects/actions which promote sustainable management and wise use of land resources or correct negative impacts through a well defined institutional mechanism that encourages public participation and devolves responsibility and authority to the lowest possible organisational levels consistent with effective management.

A summary of the key actions to be implemented under this programme with respect to behavioural change is presented in Table 1.

**Table 1: Summary of Behavioural (Attitudinal and Functional)/Change Programme Actions**

<b>Result A. Framework for Behavioural Change Established</b>				
<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicators</b>	<b>Responsibility/ Collaboration</b>
<i>Target A 1. Enhancement of awareness of all publics (communities, schools, judiciary, politicians, businesses, land developers, etc.) on land degradation and drought issues to improve the practice of making wise choices with respect to land use and management</i>				
A.1.1 Develop and implement a Public Education and Outreach (PEO) programme awareness programmes to increase stakeholder participation and development of partnerships for active involvement in land management	Formulate a Public Education and Outreach (PEO) Strategy -	2008-2009	PEO strategy tailored for five (5) different audiences implemented by 2010	I-AM MALFF - (DoF)/ AIU Government Information (GIS) Media houses Other Government ministries and agencies with land-related responsibilities Min. of Education Educational institutions Farmers and Fishers Community Groups Churches
	Develop and implement specific Awareness Programmes to targeted audiences building on and complementing existing initiatives, and integrating with the broader environmental management programme Programmes to incorporate fresh and innovative approaches for (i) design – (e.g. use of imagery from local folklore, use of popular/contemporary messages in media – fuel crisis/rising food prices, use of children to connote a “future” theme) and (ii) delivery such as through press press briefings, focus groups, popular theatre, cinema advertisement slots, messages through church/religion and music;	2008-onwards	Public well informed and conscious of sustainable land management in decision making for environmental and land management and participating implementation of NAPSAP	
	Conduct aggressive public	2008-	Campaign	

<b>Result A. Framework for Behavioural Change Established</b>				
<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicators</b>	<b>Responsibility/ Collaboration</b>
	awareness campaign throughout the country, to highlight the impacts of land degradation and drought on the environment and socio-economic development of the country; utilise press briefings, talk shows, focus group discussions, among other delivery methods	2009	evaluation to determine level of sensitisation of farming, rural and local communities of the need to adopt sustainable land management to ensure land conservation	
	Establish fora for regular dialogue on land degradation and drought issues – workshops/seminars, internet chat groups, talk shows, among others	2008-onwards	Increased stakeholder participation and collaborative partnerships demonstrated by community involvement in land management	
A.1.2 Promote a sense of responsibility and good stewardship in all actors to lead to a sharing of responsibility and resources for implementing sustainable use practices for land management and drought mitigation	Design and implement national programmes that promote community/civil society involvement in land/environmental management initiatives through a participatory approach. Promote “adopt-a-community” projects and “Greening initiatives” for businesses (e.g. Green globe, Blue flag, ISO 14000)	2010 - onwards	Increased investment in land management  Reports produced	I-AM MALFF - DoF Ministry wrf the Environment/NEC Other Government ministries and agencies with land-related responsibilities Educational Institutions Farmers and Fishers Community Groups Private sector/business community
A.1.3 Establish mechanisms to promote a positive socio-cultural relationship between the people and the land for improved knowledge, attitudes and practice	Conduct studies on the impact of social and cultural factors on land resources utilisation to inform PEO Strategy and Awareness Programmes	2008 - onwards	Report on impact studies produced	I-AM MALFF - DoF SDES Community Based Organisations (CBOs) NGOs Min. of Social Transformation
	Develop and implement formal and informal strategies	2010 - onwards	Reports on KAP studies; increased	I-AM MALFF -

<b>Result A. Framework for Behavioural Change Established</b>				
<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicators</b>	<b>Responsibility/ Collaboration</b>
	to educate individuals and groups about land degradation and drought issues and to facilitate increased community participation in NAPSAP implementation – regular fora including workshops/ seminars, talk shows, popular theatre, cinema advertisement slots, messages through church/religion and music, etc.		community participation in implementation of NAPSAP activities	DoF / AIU Government Information (GIS) Other Government ministries and agencies with land-related responsibilities Community Based Organisations (CBOs) NGOs Min. of Social Transformation
<b>Target A 2 Increase level of use of traditional knowledge and practices in land management and drought mitigation</b>				
A.2.1 Create formal and informal knowledge exchange strategies and mechanisms to facilitate access to local and traditional knowledge and practices and promote benefits to be derived – documentation, awareness, etc.	Facilitate the documentation and dissemination of local and traditional knowledge and practices associated with land resources management utilising LRIS  Utilise sustainable livelihoods approach to promote benefits of SLM		Policy, procedures and measures for preserving traditional knowledge and practices, as well as rights of communities and resource users established	I-AM MALFF - DoF / AIU Government Information (GIS) Folk Research Centre (FRC) CBOs/NGOs
	Assist in facilitating the enhancement of existing educational tools and teaching aids for environmental management to emphasise sustainable land management	2010-2015	Wider range of educational resources available tools	I-AM MALFF – DoF Ministry wrf the Environment/SDES Educational Institutions
<b>Target A 3 Development of effective information and communication systems aimed at achieving effective management of land resources</b>				
A.3.1 Establish and implement effective information	Assist in facilitating the implementation of the proposed Land Resource Information System (LRIS) ;	2009 - onwards	Land degradation and drought database established in	I-AM MALFF - DoF Corporate Planning Unit / WRMA

<b>Result A. Framework for Behavioural Change Established</b>				
<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicators</b>	<b>Responsibility/ Collaboration</b>
management systems for appropriate assessment and monitoring of issues, trends and impacts on the status of land resources to ensure conservation and sustainable land use	Create a comprehensive database of land degradation and drought parameters including available information on assessment of impacts, identification of root causes and vulnerability mapping in order to set a baseline for and establish a system for ongoing assessment and monitoring.		DoF including vulnerability maps, assessment reports, etc. , available in formats for incorporation into LRIS and on websites such as SLU MAFFE website and other related sites including biodiversity website	Ministry wrf Planning Other Government ministries and agencies with land-related responsibilities Community Based Organisations (CBOs) NGOs
	Ensure security and safeguarding of data bases and information systems at all levels and ensure requisite approval procedures for granting access to such information are followed	2009 - onwards	Procedures established and compliance monitored	I-AM MALFF - DoF / Corporate Planning Unit
	Assist in facilitating the establishment of National and Community-based Environmental Monitoring Networks to encourage and facilitate contributions to information management systems; provision of training, computer equipment. and development and maintenance of LRIS; Develop protocols for data collection and information sharing	2009 - onwards	Environmental Monitoring Networks established and persons/CBO's equipped to manage networks	I-AM MALFF - DoF / Corporate Planning Unit Ministry wrf the Environment/NEC SDES MALFF-DoF Other Government Agencies CBOs Regional and International Agencies
A.3.2 Ensure knowledge and information on land degradation and drought and measures for mitigation and management and benefits to be derived are accessible and	Piggy back on Clearing House Mechanism and Information Management System for Biodiversity Management for dissemination of information on trends and impacts of land degradation and drought on the status of land resources, measures for mitigation and	2009 - onwards	Information made available on SLU MAFFE website and/or related sites such a biodiversity website	I-AM MALFF - DoF / Corporate Planning Unit

<b>Result A. Framework for Behavioural Change Established</b>				
<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicators</b>	<b>Responsibility/ Collaboration</b>
utilised by state and non state parties and civil society to advance socio-economic development	management and benefits to be derived, policies and plans, etc. to promote conservation and sustainable land use in development			
	Produce and disseminate information materials for relevant target groups and d	2009 - onwards	Information materials produced and disseminated to five (5) key target groups inclusive of state and non-state parties	I-AM MALFF - DoF / AIU Government Information (GIS)
	Develop protocols for access and use of traditional knowledge and practices	2010 - 2011		

## **6.2 Capacity Development and Institutional/ Organisational Strengthening**

### **Objective**

To strengthen the existing capacity at all levels (systemic, institutional and individual) and develop new capacity to successfully implement the NAPSAP.

### **Implementation**

Although the concept of land management has been promoted for some time, this has been done primarily at the sector level, with very few attempts to reconcile often conflicting needs and interests of different sectors and stakeholders, thus leading to more conflicts and pressure on land and its natural resources. Most land use planning exercises have tended to be top-down, driven largely by pressures for economic growth and are not supported by institutional reform and decentralization required to allow effective development, implementation and enforcement of the existing systems. Capacity limitations also preclude integration of environmental and participatory considerations into land management.

Several relevant institutional and policy measures, though not specifically targeted towards the direct implementation of the Convention are being undertaken at the national level, and are expected to impact on issues related to land degradation and drought. Thus, this programme area will seek to incorporate these existing and planned initiatives into a comprehensive plan for capacity development and institutional strengthening. *These initiatives include inter alia,:*

- The national land policy and national water policy initiatives, which are expected to be implemented under the holistic policy for environment, and will establish the basis for the integrated and coordinated use, management and administration of land and water resources in the wider context of sustainable development, will be actively promoted.
- Initially however, to enable the capacity building process, the NAP will capitalize on the recent initiative of developing a Medium Size Project (MSP) proposal under the LDC-SIDS Portfolio Project for Sustainable Land Management, aimed at providing support to ensure that land policy implementation is mainstreamed into the national development strategy and receives the requisite budgetary support.
- The legislative and institutional environmental review commissioned by the then MPESD, to address the rationalization of environmental management agencies on the island, as well as strengthen linkages among institutions dealing with environmental issues, including land degradation, will be actively supported. Accordingly, this will serve to identify the deficiencies in existing legislative instruments which will require further strengthening and make recommendations for new and more appropriate legislative and regulatory framework. The new regulatory framework will give authority to the broad systemic and institutional framework. Further, measures for the enforcement of these laws and regulations will be developed through the participatory process to ensure “buy-in” by all stakeholders.
- Capacity building to advance the mechanisms for coordination and cooperation developed with the assistance of the OECS Secretariat in the formulation of the NEP/NEMS and the need for further implementation will be given higher priority. The implementation of NEP/NEMS will thus serve to drive the process of harmonization of the policy, legal and regulatory framework for mainstreaming the objectives of the Convention within the country’s sustainable development goals and ensuring full integration of land degradation and drought issues at the macro and micro level. The NAPSAP will therefore be framed within the broader environmental management plan and implementation of the National Land Policy for the

- island, having a formal structure and supported by appropriate legislation and resources.
- Full implementation of existing integrated development planning (IDP) concept will be promoted to facilitate the creation of a suitable inter-agency mechanism for collaboration and coordination (including joint programming) among agencies. For the Integrated Development Planning approach, the following will be considered:
    - Priority setting
    - Memoranda of Understanding(MOU) between agencies, community groups among others;
    - Best practices and lessons learnt
  - The new forest sector and wildlife policy will also be actively promoted within the integrated approach to land management and support of initiatives towards implementation of the Convention.
  - The ongoing NCSA process will be utilised as a platform for furthering initiatives to foster inter-ministerial collaboration which commenced at the level of the Ministry of Agriculture; the Convention and Agreements Committee which was formed to develop linkages with the Ministry with responsibility for the Environment and other institutions and agencies to obtain synergies in implementation efforts for meeting requirements of conventions and agreements, and in particular the Conventions on Biological Diversity and Climate Change will be built upon. Integral to this is the fostering of capacity building to ensure participation at the level of Convention negotiation, particular with respect to the Ministries with responsibility for External and Foreign Affairs.
  - The recent initiatives undertaken within the EU Special Framework of Assistance (SFA) 2003 programme focusing on Economic and Agricultural Diversification and Poverty Reduction through Integrated Natural Resources Management, which sought to further elaborate and enhance the aforementioned initiatives will be used as a platform to create synergies by promoting an integrated and collaborative approach to implementation of the outputs for the following:
    - Forest and Wild life Policy
    - Environmental Management Framework
    - Biodiversity Management Improvement Programme
    - Riverbank Assessment and Rehabilitation
    - Compensation for Environmental Services
  - Other opportunities to create synergies in activities to ensure a more effective use of funds will be pursued under the upcoming SFA 2005

programme focused on Capacity Building and SFA 2008 programme focused on Land Management.

- The NFP for the UNCCD will also continue to foster partnerships with other developing countries such as the current exchange programme between technical and community watershed groups between Saint Lucia and Saint Vincent; the exchange programme funded by the OECS/NRMU comprises mainly field studies and practical work.
- Other related initiatives such as the new Physical Planning Act and associated Building Code and Guidelines, as well as the ongoing activities such as those undertaken by the PROUD Unit, established to address the regularization of land tenure and improve the poor infrastructural and housing conditions prevalent in unplanned (i.e. squatter) settlements, will form an integral part of the harmonized framework.

Other areas to be included for action under this programme area include:

- The capacities of local institutions such as local government, grassroots organizations, CBOs, churches, schools, and local corporations, will also be strengthened to assist with the development and implementation of the NAPSAP and to provide support for the necessary regulatory regimes. Specific capacity building initiatives related to inadequacies in infrastructure will be undertaken with local and grassroots organizations, to equip them with the requisite resources for planning their own actions and assessing progress on implementation of the Convention and improvements in socio-economic and ecological conditions.
- Successful implementation of the Convention will require the availability of a wide range of skills, supported by adequate technology and financial resources. From all indications, human capacity is currently inadequate both in terms of numbers and skills. In the immediate to short term it will be necessary to clearly identify areas where skills need to be enhanced and commence the process of acquiring or providing the necessary training, at the levels required for these specialized skills. Efforts will be focused on augmenting of skills in vulnerability and assessment, mitigation inventories and Convention methodologies, as well as the provision of training in research techniques, analysis, monitoring, impact assessments and techniques for valuation and management of the land resources. Communication, negotiating and advocacy techniques, good governance and data base management, are also some of the skills required. In the medium-to-long term, training will have to be conducted periodically to minimize loss in technical expertise due to the movement of staff, and where feasible increase staffing levels.

- Mechanisms will be developed to promote peer and professional networking among technical, research and community/NGO personnel will be required to generate the enlightened self interest for ownership and engagement of community and grass roots users in land management.

Table 2 summarizes the key actions to be implemented under the programme with respect to capacity development and institutional strengthening.

**Table 2: Summary of Capacity Development and Institutional Strengthening Programme Actions**

<b>Result Area B: Enhanced Capacity and Institutional Strengthening</b>				
<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicator</b>	<b>Responsibility/ Collaboration</b>
<i>Target B 1. Capacity Developed at <u>Systemic Level</u> for effective land management for mitigating land degradation and drought effects</i>				
B.1.1 Mechanism to promote collaboration among all actors within key economic sectors (agriculture, tourism, health, housing and industry) with responsibility for land administration and management to integrate land use, management and development considerations into all relevant policies and programmes and facilitate the coordinated implementation of initiatives related to land degradation and drought mitigation	Establish and operate a functional and appropriate inter-agency mechanism through the National Environmental Commission (NEC) to focus on implementation of strategies and plans for land use and management; composition should also be multi sectoral/ disciplinary (like NCC) with a mandate supported by requisite policy and regulatory framework to enable coordination and collaboration among agencies	2008-2009	Functional Inter-agency Mechanism (I-AM) established with relevant authority and mandate for land management and made operational	NEC MALFF-DoF Ministry wrf the Environment and NCSA process - SDES
	Equip Focal Point – DoF with a national Secretariat / Office with adequate resources to support the inter-agency functional mechanism; Secretariat to be co-managed by MALFF and Ministry wrf the Environment (provide for finance and administrative functions)	2008-2009	Functional Secretariat /Implementation Unit established	MALFF – DoF Ministry wrf the Environment/ NEC SDES

**Result Area B: Enhanced Capacity and Institutional Strengthening**

<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicator</b>	<b>Responsibility/ Collaboration</b>
	Assist in facilitating a State Leadership Initiative for the adoption of an integrated approach to land management among government agencies, utilising the integrated development planning (IDP) process within the environmental management framework	2008-onwards	Implementation of IDP in land management, which provides framework for avoidance and resolution of conflicts related to land and its uses	I-AM/NEC Ministry wrf the Environment Ministry wrf Physical Development and Planning Other Government agencies with responsibility for land administration and management
B.1.2 Implement harmonised policies, plans and other instruments (financial and socio-economic) that are compatible and mutually reinforcing to create and enabling environment that promotes sustainable land management	Harmonize policy framework through the promotion of a consultative and collaborative approach to develop linkages among sectors to incorporate sustainable land management objectives, issues and options into revised sector policies, plans and programmes; Issues related to land degradation and drought such as climate change, biodiversity management, impact and vulnerability assessments, disaster risk reduction, policy guidelines for access and use of traditional knowledge and practices, etc. should be considered and measures to address these incorporated into the revised policies and national development frameworks	2008–2010	Revised sector policies, plans and programmes and national development frameworks  Reports produced	NEC /I-AM Ministry with wrf the Environment Ministry wrf for Planning and Development Government Ministries/agencies wrf sectors impacting land management – agriculture, tourism, construction, etc.
	Assist in facilitating the fast-tracking of the accession and /or implementation of NEP/NEMs, National Land Policy, NCSA process and other relevant policies and strategies to provide for the	2008-2010	Status Reports on policy implementation produced	I-AM/NEC Ministry wrf the Environment Ministry wrf Physical Development and Planning Other Focal Point Agencies

**Result Area B: Enhanced Capacity and Institutional Strengthening**

<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicator</b>	<b>Responsibility/ Collaboration</b>
	coordinated implementation of NAPSAP with the other Environmental Conventions and Agreements within the SLM framework (provide technical support and advocacy as required and utilize the IDP process)			
	Establish and implement appropriate instruments to provide incentives and penalties (dis-incentives) schemes including PES/CES market based approaches, to promote judicious and sustainable land management	2008-onwards	Creative and effective use of a wide range of instruments that promote judicious and sustainable land management  Status Reports on implementation and impact produced	NEC /I-AM Ministry with wrf the Environment Ministry wrf for Planning and Development Government Ministries/agencies wrf sectors impacting land management – agriculture, tourism, construction, etc.
	Establish and make operational a financial facility/mechanism such as an Environmental Trust Fund to enable incentive/penalty system for SLM	2010 - onwards	Financial facility/mechanism established and operational by 2010	NEC /I-AM Ministry wrf the Environment - Sustainable Development and Environment Section (SDES); Ministry of Finance; MALFF/DoF International Donor Agencies NGOs (local, regional and international) Other MEA Secretariats
	Assist in facilitating the development and functioning of efficient land markets: through development of a Land Use (Zoning) Plan and incorporate in the overall National Development Plan; promote good governance by respecting policies for change in land use	2008-2010	Land Use and Zoning Plan implemented and respected	I-AM NEC/Ministry with wrf the Environment Ministry wrf for Planning and Development Other land management agencies

**Result Area B: Enhanced Capacity and Institutional Strengthening**

Intervention	Actions	Time Frame	Performance Indicator	Responsibility/ Collaboration
B.1.3 Improvement and implementation of legal measures for strengthening the mandates of public agencies involved in land administration and management	Review, enact or enforce relevant legislation, regulations and other legal measures relating to land and environmental management ensuring coherence and compatibility to strengthen mandates of agencies to operate in a harmonised frame in the management of land resources; Revision of and implementation of regulations for Land Conservation and Improvement Act of 1992 is critical in this regard.	2008-2010	Legislation relating to environmental management harmonised and integrated providing an improved legislative framework for land management	I-AM NEC/Ministry wrf the Environment MALFF/DoF Attorney General's Office Min. of Home Affairs – Police Department
B.1.4 Review, implement and enforce relevant measures (e.g. codes, standards, guidelines) for natural resources management to ensure conservation and sustainable use of land (terrestrial and marine) resources	Improve relevant legislation to enhance security of land tenure to remove impediments related to land ownership;  Develop specific legal measures for undertaking changes in land use and specific guidelines for the resolution of conflicts;  Conduct sensitisation and collaborate with financial sector to establish appropriate codes, standards or guidelines to promote environmental/land conservation in developments and business enterprises	2010 - 2012	Codes, standards, guidelines and other relevant legal measures established for natural resources management	I-AM NEC/Ministry wrf the Environment MALFF/DoF Attorney General's Office Ministry wrf Physical Development/ Planning and Department of Crown lands Financial Institutions
	Strengthen environmental standards and regulations; and enforcement support structures and mechanisms to monitor compliance as well as provide basis for	2010 - 2012	Agency Reports produced indicating reduction in environmental/land related infractions	SDES MALFF - DoF Saint Lucia Bureau of Standards/Caribbean Regional Organisation of Quality and

**Result Area B: Enhanced Capacity and Institutional Strengthening**

<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicator</b>	<b>Responsibility/ Collaboration</b>
	monitoring impact of land degradation and drought mitigation interventions; Foster regional networking to support national initiatives in this regard.			Standards (CROSQ)
	Assess proposed regional and international agreements and evaluate and monitor impacts of signed agreements and enabling legislation to ensure value and benefits of diversity in land rights and management	2012 - onwards	Value and benefits of diversity in land rights and management respected	I-AM NEC/Ministry wrf the Environment MALFF/DoF
<i>Target B 2 Capacity developed at Institutional Level ( agency and community level) for effective land use and management for mitigating land degradation and drought effects</i>				
B.2.1 Ensure availability of resources to support land management and sustainable livelihood initiatives for effective implementation of the NAPSAP	Conduct a financial and economic analysis of the implementation of the NAPSAP and develop a financing plan for activities of the NAPSAP within the framework of the overarching environmental management programme and related Environmental Trust Fund.	2008-2009	NAPSAP Financing Plan produced	I-AM NEC/Ministry wrf the Environment MALFF- DoF
B.2.2 Improve efficiency of organisations and processes, systems and procedures for land management to ensure a streamlined and integrated approach to addressing land degradation and drought issues within the broader environmental management framework	Develop and adopt standardized processes, systems and procedures for operations, reporting and evaluation for agencies involved in executing activities under NAPSAP; Capitalize on support available through Medium Size Project (MSP) project under the LDC-SIDS Portfolio Project for Sustainable Land Management.	2010 - 2015	Standardized processes, systems and procedures for operations, reporting and evaluation established and adopted by key agencies involved in executing NAPSAP activities; Increased incidence of joint implementation of projects, etc. and joint programming over time	I-AM NEC/Ministry wrf the Environment Other land management agencies CBOs NGOs

**Result Area B: Enhanced Capacity and Institutional Strengthening**

<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicator</b>	<b>Responsibility/ Collaboration</b>
B.2.3 Strengthen technical capacity of relevant agencies which support to the implementation of the NAPSAP and other related land and water resources management initiatives	Develop information and technological databases for systematic observation and monitoring of land degradation/drought including: - Land use databases and land capability database - Vulnerability assessment database and mapping - Benchmarks and indicators for baseline database; Can utilise as a base the Riverbank Assessment database developed under EU funded consultancy in the DoF and further expand to create a database network	2008 - onwards	Comprehensive information and technological databases established and functional in network of agencies by 2010	I-AM MALFF- DoF NEC Ministry wrf Environment/SDES Ministry wrf Physical Development and Planning Ministry of Communications, Works and Transport Other national agencies
	Development of Benchmarks and Indicators for Monitoring: - Identify appropriate benchmarks and indicators for monitoring environment with respect to land degradation and drought - - Benchmarks and indicators for monitoring participatory approach - Compilation and use of traditional knowledge	2008 - onwards	Benchmarks and indicators identified and incorporated into monitoring systems	I-AM Ministry wrf Environment/NEC  MALFF - DoF Biodiversity Unit Ministry wrf Environment/SDES
B.2.4 Build capacity within relevant agencies including social development and education entities to implement initiatives aimed at the sustainable use of land resources	Institute mechanisms for linkages between relevant and key Government agencies involved in SLM to derive synergies in implementation of NAPSAP activities and other agency related initiatives; - Memoranda of Understanding(MOU) between agencies, community groups, etc.	2008 - onwards	Agency Reports/MOUs Harmonised implementation of initiatives aimed at sustainable land management indicated by joint project implementation or improved project outputs	I-AM Ministry wrf Environment/NEC SDES MALFF - DoF Other state and non-state agencies Regional agencies CBOs/NGOs
	Establish systems for assessment, monitoring, research, etc. on land degradation and drought; Assist in facilitating the operations of the National	2008 - onwards	Monitoring and assessment systems established within broader national environmental	I-AM Ministry wrf Environment/NEC SDES MALFF - DoF Other Government/ national agencies

**Result Area B: Enhanced Capacity and Institutional Strengthening**

Intervention	Actions	Time Frame	Performance Indicator	Responsibility/ Collaboration
	Council for Science and Technology to coordinate research activities within a broader national environmental framework		framework	
	Establish procedures and guidelines for Green Accounting – in particular economic valuation of land resources to inform decision making - Determine the opportunity cost of land - Determine the loss of value of land – the loss should be reflected in GDP where those land uses contributes to GPD Periodically review and revise procedures and guidelines to ensure accurate and updated information is available and realistic results are achieved.	2009 - 2012	Procedures and guidelines for economic valuation of land resources established	I-AM Ministry wrf Environment/NEC SDES MALFF - DoF Ministry of Finance
	Establish a mechanism/forum to receive and respond to land degradation complaints/issues	2009 - 2010	Complaint mechanism established	I-AM Ministry wrf the Environment Ministry wrf Physical Development and Planning
<b>Target B 3 Capacity Developed at Individual Level for effective land use and management for mitigating land degradation and drought effects</b>				
B.3.1 Empowerment of communities, and state and non-state parties to effectively lead and participate in land management and sustainable livelihood initiatives and implementation of the NAPSAP	Develop a long-term training programme to improve the availability and quality of human resource to support sustainable land management and promote collaborative arrangements with educational and training institutions for implementation	2008 - 2009	National training programme developed to support sustainable land management	I-AM Ministry wrf Environment/NEC SDES MALFF - DoF Ministry of the Public Service Ministry of Education Other Government/ national agencies
	Conduct training – using training of trainers' model - to equip human resource with appropriate knowledge	2008 - onwards	Trained personnel in private and public sector with capacity to	I-AM MALFF - DoF Ministry wrf the Environment Other Government/

**Result Area B: Enhanced Capacity and Institutional Strengthening**

Intervention	Actions	Time Frame	Performance Indicator	Responsibility/ Collaboration
	and skills to manage sustainable land management issues: training and skills development in the areas of legislation, group dynamics, communication skills, project development and preparation; and technical training in areas such as environmental quality monitoring and assessment, risk reduction and management, skills for negotiation and participation in COPs for implementation of UNCCD and other MEAs, e.g. drafting of resolutions, etc.		manage sustainable land management issues and skills for negotiation and participation in COPs for implementation of UNCCD and other MEAs	national agencies Private Sector CBOs/NGOs
B.3.2 Develop training and educational programmes targeted at the various actors responsible for the management of land resources to ensure a structured and systematic approach to capacity building for SLM	<p>Improve training and educational tools and methods in order to incorporate land/environmental management (conservation and sustainable use) into relevant subject areas (eg. organic agriculture;</p> <p>Assist in facilitating the modification of curricula at all educational levels with respect to Science and Technology to emphasise issues of sustainable land/environmental management</p>	2009 - onwards	Training and educational tools including school curricula enhanced to incorporate elements of sustainable land management	I-AM MALFF - DoF Ministry of Education SALCC Other Government/ national agencies
	Conduct specific training in Geographic Information Systems (GIS) to facilitate participatory approach in integrated spatial planning	2008 - onwards	Trained personnel in private and public sector with capacity to participate in planning	I-AM MALFF - DoF Other Government/ national agencies Private Sector Local communities

**6.3 Sustainable Land Management**

### **Objective**

To apply conservation, adaptation and other measures, *inter alia*, to allow stabilisation and maintenance of forest cover, reduction of land degradation and introduction of programmes and actions to promote prudent use and conservation of land resources and mitigate against the impacts of drought.

### **Implementation**

The adoption of sustainable land management (SLM) practices has been acknowledged as a key means for combating land degradation and mitigating the effects drought.

The last decade though, has seen advances in the thrust for sustainable development, as several measures have been taken or are being planned within the framework of the Sustainable Land Management (SLM) at the national level. In addition to the articulation of a National Water Policy, NEP/NEMS, integrated coastal zone management policy and a proposed National Land Policy, various projects are being implemented aimed at strengthening land administration and building capacity for sustainable land management, both at the local and national levels.

The following areas are identified to be addressed under this programme area:

- The revitalization and furthering of the IDP approach to national development will serve to strengthen the overall development planning process, giving the requisite focus to land resources. In this regard, implementation of the Medium Size Project (MSP) proposal under the LDC-SIDS Portfolio Project for Sustainable Land Management will be given high priority. Further the process will be used to advance the preparation of National Development Plans incorporating spatial development plans based on Land Use (zoning), as well as various other sectoral and area development plans.
- In areas where land has already been degraded, the focus will be rehabilitation. In this regard, new actions will be identified and existing initiatives will be complemented.
- Cognizant of the nexus between environmental degradation, and in particular land degradation, and poverty, the various poverty reduction and environmental management strategies will be harmonized so as to be more effective and efficient. In this regard, lessons learnt from the many initiatives implemented by the GOSL such as the Poverty Reduction Fund (PRF), the Basic Needs Trust Fund (BNTF) and the Short Term Employment Programme (STEP) that have sought to assist affected communities around the island to physically address degradation issues, as well as in identify alternate and sustainable livelihoods to improve

economic well being while managing the environment, will be used to formulate appropriate methodologies and strategies to address issues of land degradation and drought.

- The pursuit of alternative sustainable livelihoods which utilise land resources, in areas such as agro-forestry, small industries, e.g. the local broom industry, will be given high priority as capacity building areas for addressing land degradation and drought within the context of achieving the island's sustainable development goals.
- Other measures will be focused on promoting sustainable investment in SLM, especially at the community level. Interventions to be undertaken with respect to adopting and promoting sustainable land use practices include:
  - Instituting of land management standards in the various sectors such as GAPs, Green Globe, ISO 14000, etc.;
  - Establishing proper guidelines for new developments and housing projects, with respect to land management, infrastructure etc.;
  - Addressing existing land tenure issues, squatting, etc.;
  - Addressing issues of poverty that are underlying causes of land degradation

Table 3 outlines the key action areas for implementing this programme area, which seeks to adopt and promote SLM.

**Table 3: Summary of Sustainable Land Management Programme Actions**

<b>Result Area C: Sustainable Land Management Approach Adopted</b>				
<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicators</b>	<b>Responsibility/ Collaboration</b>
<i>Target C 1. Adoption of measures to arrest land degradation and mitigate drought within a sustainable land management approach</i>				
C.1.1 Collaborate with relevant stakeholders to further the IDP approach to national development through the development of integrated development plans	Assist in facilitating the preparation of integrated development plans using the watershed as a unit of analysis including: <ul style="list-style-type: none"> <li>- National Physical Development Plan</li> <li>- Regional Development Plans</li> <li>- Integrated Watershed Management Plans</li> <li>- Local Area Development plans</li> <li>- Land Use Plan</li> <li>- Implementation of CZM Plan</li> </ul>	2008 - 2015	Integrated Development Plans produced incorporating an integrated watershed management approach	I-AM MALFF - DoF Ministry wrf Physical Development and Planning Ministry wrf the Environment - SDES Other relevant government/ national agencies Local communities
C.1.2 Implement measures for	Improve forest management strategies	2008 -	DoF reports; Consultancy	MALFF – DoF/ National

<b>Result Area C: Sustainable Land Management Approach Adopted</b>				
<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicators</b>	<b>Responsibility/ Collaboration</b>
<i>Target C 1. Adoption of measures to arrest land degradation and mitigate drought within a sustainable land management approach</i>				
rehabilitation, restoration and management of degraded lands	thus providing framework for Sustainable Forest Resources Management - Review Legislative and Institutional Framework for Forest Management - Develop new Forest Management Plan - Inventory of Biological Resources and Monitoring Programme - National Reforestation and Watershed Rehabilitation Programme	2012	Reports: Policy, legislative, institutional and operational framework for sustainable forest resources management enhanced	Biodiversity Unit Ministry wrf the Environment
	Enhance framework for Sustainable Water Resources Management: - Assist in facilitating the implementation of the National Water Resources Policy - Prepare and implement a 10 -25 yr national water resources Plan (Water Master planning - Watershed Plans) - Establishing electronic water resources information management system	2009-2018	Reports from WRMA: Operational framework for sustainable water resources management enhanced	MALFF – Water Resources Management Agency (WRMA) Ministry of Communications, Works, Transport & Public Utilities Ministry wrf Physical Development and Planning Private Sector Agencies WASCO and other Water users
C.1.3 Establish and maintain patterns of land use and management that protect and enhance the productivity of agricultural lands – farming techniques and infrastructure to minimise degradation	Promote Sustainable Management of Agricultural including: Farm Planning - Soil and Water Conservation Programmes -Implementing GAPs/organics and Certification Programmes -Agricultural Incentives Programme - Development of specific Public Awareness Programmes for Agriculture	2008 - onwards	MALFF reports National reports Increase used of sustainable agricultural systems resulting in and increased contribution to GDP of agricultural sector	MALFF Other national agencies CBOs Producer Associations Private Sector
	Advance Land Bank Initiative to: - avoid uninformed changes in agricultural land use	2009- onwards	Sector and agency reports: Land Bank Initiative advanced –	MALFF Ministry wrf Physical Development and Planning

<b>Result Area C: Sustainable Land Management Approach Adopted</b>				
<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicators</b>	<b>Responsibility/ Collaboration</b>
<i>Target C 1. Adoption of measures to arrest land degradation and mitigate drought within a sustainable land management approach</i>				
	<ul style="list-style-type: none"> <li>- ensure optimal use of under-utilised lands</li> <li>- promote sustainable land management through land lease controls</li> </ul>		land assets secured and properly managed	Producers Regional agencies - FAO
	Develop regulatory protocols to govern land use changes Establishment of agricultural, forestry and biodiversity habitats “no-go” areas within the context of the regulatory protocols	2008 - onwards	Protocols established and adhered to	I-AM Committee of Permanent Secretaries MALFF - DoF, Biodiversity Unit Ministry wrf Physical Development and Planning
C.1.4 Introduce environmental best practice in the sustainable land management approach to engender the adoption of conjoined environment/land/water management approaches	Establish pilot communities to demonstrate land related Environmental Best Practice	2008- onwards	Demonstration sites established	MALFF -DoF Ministry wrf Environment - SDES Community Based Organisations (CBOs) Min. of Social Transformation
	Assist in implementation of Solid and Hazardous Waste & Pesticides Management Plan - for pollution control - Management of farm generated waste (plastics, etc.) - Strengthening of the framework for regulation of importation, handling and use of agro-chemicals	2009 - 2015	SLSWMA annual reports: Elements of Solid and Hazardous Waste & Pesticides Management Plan implemented	I-AM Saint Lucia Solid Waste Management Authority (SLSWMA); MALFF Ministry wrf Environment – SDES Producer Associations/ National Fair Trade Organization
C.1.5 Address poverty as an underlying cause of land degradation	Promote sustainable livelihoods within poverty reduction initiatives including agro-forestry, small industries such as latanye brooms, and other biological resources identified	2009- onwards	National Reports – e.g. Poverty Assessments, etc. Increased livelihood opportunities,	I-AM MALFF – DoF, Biodiversity Unit Ministry of Social Transformation Agencies with mandate for poverty reduction

<b>Result Area C: Sustainable Land Management Approach Adopted</b>				
<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicators</b>	<b>Responsibility/ Collaboration</b>
<i>Target C 1. Adoption of measures to arrest land degradation and mitigate drought within a sustainable land management approach</i>				
	through the National Biodiversity Strategy and Action Plan		income generation and poverty alleviation	Local communities
<i>Target C 2. Rehabilitation of degraded lands and Mitigation of Drought</i>				
C.2.1 Maintain the integrity and value of terrestrial and aquatic environments	Undertake comprehensive studies utilising information in databases and available methodologies such as the riverbank assessment methodology to identify priority areas for rehabilitation	2009-onwards	Study reports	I-AM MALFF – DoF Other relevant government/ national agencies Local communities
	Utilise community-based management approaches, piggy-backing on a water management theme to undertake physical measures to rehabilitate degraded lands, including riverbank stabilization in degraded priority watersheds incorporating SLM practices <i>inter alia</i> : <ul style="list-style-type: none"> <li>o Agro-forestry cropping systems – (traditional and modified)</li> <li>o Management of riverbank Buffer Zones and Ridge Reserves (RBBZ) and Protected Forest Areas (PFA)</li> <li>o Progressive elimination of livestock grazing along riverbanks</li> </ul>	2009-onwards	Sustainable land practices integrated into landscape by utilising community-based efforts which recognise the importance of improvement of water quality, to rehabilitate degraded lands	I-AM MALFF – DoF Other relevant government/ national agencies Local communities
	Undertake feasibility studies (FS) of recommended interventions/ measures to: <ul style="list-style-type: none"> <li>o Determine</li> </ul>	2009-onwards	Outputs of Feasibility Study	I-AM MALFF – DoF Other relevant government/ national agencies Local communities

<b>Result Area C: Sustainable Land Management Approach Adopted</b>				
<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicators</b>	<b>Responsibility/ Collaboration</b>
<i>Target C 1. Adoption of measures to arrest land degradation and mitigate drought within a sustainable land management approach</i>				
	prioritization and implementation of critical interventions; o Develop strategic approach for the implementation of interventions/measures			
	Promote water conservation measures in all sectors: Including water storage and adoption of simple water harvesting measures	2009-onwards	Drought effects mitigated through water conservation	I-AM MALFF – DoF Relevant sector agencies Other state and non-state parties
C.2.2 Promote investment in SLM	Address land tenure issues to remove impediments related to land ownership	2009-onwards	More frequent incorporation of SLM practices into production and development activities	I-AM MALFF – DoF Ministry w/rf Physical Development and Planning
	Utilise legislation, regulations and incentive measures to ensure establishment of proper infrastructure in areas for new developments and ensure compliance	2009-onwards	Increased investment in infrastructure to protect land and water	I-AM Ministry w/rf Works Ministry w/rf Physical Development and Planning

#### **6.4 Disaster Risk Reduction and Early Warning Systems**

##### **Objective**

To establish systems for disaster risk management including early warning systems and develop disaster preparedness and management plans as an element for environmental risk management.

##### **Implementation**

Consistent with and complementary to natural hazard mitigation, is the protection of the natural environment. The island's natural resource base is crucial to the future of the country's economy and must be considered in any national hazard mitigation program or plan. Development pressures and neglect have substantially damaged many important elements of the natural environment, and will continue facilitate destruction in the future, if left unchecked. Many of

features, such as wetlands and mangroves, serve to naturally mitigate or minimize hazards. Environmental Impact Assessments and the implementation of appropriate mitigation measures are therefore of extreme importance in the protection of the environment.

While the main objective of the National Emergency Management Organisation (NEMO) is to eliminate or reduce the human loss and suffering resulting from natural disasters, other disaster planning functions which do not necessarily consider mitigation of desertification/land degradation and drought impacts, have a substantial role to play in protecting health and safety, including warning, evacuation and other response functions.

This implies the need for systems for public warning and systems for disaster risk reduction, including shelter and evacuation programmes, and the regulation of standards to promote safe development practices and to advise on development in hazard prone areas.

On the other hand, some efforts to mitigate natural hazards impacts can, in turn, have negative impacts on the natural environment. Construction of major flood control projects, for instance, which are intended to correct perennial flooding problems in specific areas may negatively impact water quality, or inadvertently cause flooding in other areas and negatively impact the coastal areas.

The following are areas that will be addressed under this programme area;

- Comprehensive hazard (including natural hazard) risks, including considerations for mitigation of desertification/land degradation and drought impacts, will be incorporated in the planning and development systems of the island, through the development of a National Disaster Management Plan. Further development of systematic risk assessment studies for the island, will be undertaken to provide understanding of insurance costs and active mitigation efforts for future planning. Installation of a systematic risk assessment utilizing geographic information systems (GIS) capability will be a long-term goal.
- With respect to information for decision making, the need for timely and relevant data on land issues is recognized and a number of initiatives are in place. High resolution satellite imagery has been procured and the Lands and Surveys Department of the Ministry with responsibility for Physical Development, and this agency is in the process of preparing updated land use information. A *Data Capture Project* to be funded under SFA 2001 has also been developed to improve the capacity of the MAFF and the former MPDE&H in the establishment of a national digital *Land Resources Information System (LRIS)*. Under SFA 1999, a project was also developed to *review land tenure issues* as they relate to constraints

posed to agricultural land development.<sup>4</sup> Additional information in the form of high resolution landslide hazard maps for the Castries watershed is currently being compiled under the auspices of the National Emergency Management Organisation (NEMO). This programme area will seek to combine these various initiatives to establish systems for data capture, especially mapped resources and hazards using GIS, to provide, timely, relevant and quality data for disaster mitigation planning, disaster preparedness and recovery operations as these relate to land management.

- Information for decision-making, with respect to adaptation, mitigation and other relevant activities, is and will remain a critical need. The generation of this information depends to a great extent on the existence of relevant data. Given the inadequacy of the existing body of environmental related data, steps need to be taken to ensure the establishment of an adequate system at the local/community level for early warning, particularly with respect to landslides, flood risks, drought and other impacts of land degradation. Baseline studies and ensuing vulnerability and adaptation assessments with respect to land degradation and drought, will be conducted at both at the national and sectoral levels, and the information and data generated will be used to derive appropriate predictive models.

A summary of the various actions and projects to be undertaken in this component of Disaster Risk Reduction and Early Warning Systems is presented in Table 4.

**Table 4: Summary of Disaster Risk Reduction and Early Warning Systems Programme Actions**

<b>Result Area D: Systems for Disaster Risk Management Established</b>				
<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicators</b>	<b>Responsibility/ Collaboration</b>
<i>Target D 1. Adoption of measures to mitigate and prevent natural and man-made hazard risks</i>				
D.1.1 Design and implement systems to identify and assess negative social and environmental impacts of natural and man-made hazards	Build on existing methodologies such as the Riverbank Assessment methodology to develop and adopt appropriate system and methodologies for stocktaking and collection of new information on land degradation and drought impacts (studies. Reviews,	2008 - 2010		I-AM MALFF – DoF/WRMA MCWTPU – Meteorological Services Min. wrf Environment/SDES National Emergency Management organisation

<sup>4</sup> Both SFA projects were delayed due to administrative issues related to disbursement of funds; implementation is pending

including those caused by development activities (tourism, agriculture, industry) and minimise harmful effects of these sectors on national ecosystems and to increase ecosystem/land resilience to such hazards	inventories)			(NEMO) Other relevant sector agencies
	Conduct assessment of disaster risk and hazards with respect to land degradation and drought– to enhance Disaster Management; conduct assessment workshops at local and national levels	2008 - 2009	Assessment reports	MAFF-DoF NEMO MCWTPU – Meteorological Services Min. wrf Environment/SDES
	Enhance/develop and implement national Disaster Management Plans for: Flood Drought Land degradation	2008 - 2009	Disaster Management Plans revised or produced	NEMO Ministry wrf Physical Development MCWTPU MALFF/WRMA Other relevant national agencies
D.1.2 Incorporate disaster risk considerations into management of land degradation and drought	Conduct systematic risk studies to provide understanding of insurance costs and costs of active mitigation efforts for future planning	2009- 2011	Study reports	NEMO Ministry wrf Physical Development MCWTPU MALFF/DoF/WRMA
	Install systems for systematic risk assessment using GIS capability	2011 - 2015	GIS risk systems installed	NEMO Ministry wrf Physical Development MALFF/DoF/WRMA Other relevant national agencies
	Promote the inclusion of land degradation and drought issues in the conduct of environmental	2009- onwards	EIAs contain procedures for assessment of developments on	I-AM MALFF - DoF Ministry wrf Physical Development and

	impact assessments through provision of logistical support to review EIAs for development initiatives and to monitor and enforce compliance with recommendations arising from such reviews.		land management  Compliance with recommendations and conditions resulting from EIA reviews	Planning
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**Target D 2 Adoption of measures for early warning**

D.2.1 Capacity building to provide timely, relevant and quality data for disaster mitigation planning, preparedness and recovery operations related to land degradation and drought	Develop system to support the identification, classification and mapping of land degradation and drought effects  Conduct baseline studies and vulnerability and adaptation assessments with respect to land degradation and drought at national and sector level	2008 - 2010	Study reports	MALFF – DoF/WRMA MCWTPU – Meteorological Services Min. wrf Environment/SDES National Emergency Management organisation (NEMO Secretariat)
	Develop systems/predictive models for early warning for land degradation and drought	2010 - 2015	Appropriate systems/predictive models produced	MALFF – DoF/WRMA MCWTPU – Meteorological Services NEMO
	Improve information and communications systems by integrating various national initiatives aimed at data capture such as LRIS and vulnerability and hazard mapping, and drought monitoring	2009 - 2012	Information and Communication Systems for managing impacts of land degradation and drought established	MALFF – DoF/WRMA Min. wrf Environment/SDES Ministry wrf Planning MCWTPU – Meteorological Services
	Provide equipment and resources to facilitate implementation of systems for data capture and analysis using available technologies such as GIS for vulnerability and mapping; Include GIS training to improve human resource	2009 - 2015	Trained persons and facilities available to enable use of data systems	MALFF – DoF/WRMA Min. wrf Environment/SDES Ministry wrf Planning MCWTPU – Meteorological Services
	Utilise environmental monitoring networks to establish systems at the local/community level for early warning re: landslides, floods, drought, etc.	2009 - onwards	Early warning systems established	MALFF/DoF/WRMA Min. wrf Environment/NEC Other relevant national agencies Local communities

	Deepen relationship and use of CIMA to approach drought triggers on a regional level	2008 - onwards	Inter-agency linkages strengthened	MCWTPU – Meteorological Services MALFF – DoF/WRMA NEMO
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## 6.5 Monitoring and Evaluation

The NAPSAP comprises a ten year action plan utilising the results based approach consequently, monitoring and evaluation is expected to be a key component of each result area. The process should be ongoing and guided by the following strategic directions and actions:

- A national coordinating mechanism within the framework of the Inter-Agency Mechanism established to manage the implementation of the NAPSAP. Roles and responsibilities clearly defined for all agencies involved in executing activities under the NAPSAP. The management entity however, will have lead responsibility for executing the NAPSAP and for ensuring the implementation of the monitoring and evaluation process.
- A participatory and consultative approach is to be utilised in the monitoring and evaluation process with particular focus on evaluating the level of success against the defined targets. Evaluation will also take into account the status of implementation through identification of gaps, and the measurement of impacts and level of success in the application of best practices.

**Table 5: Summary of Monitoring and Evaluation Programme Actions**

<b>Result Area E: Effective Monitoring and Evaluation of UNCCD National Action Programme and Strategic Action Plan (NAPSAP)</b>				
<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicators</b>	<b>Responsibility/ Collaborators</b>
<i>Target E 1. Implementation of the goal and programmes emanating from the NAPSAP within the ten (10) year time frame</i>				
E.1.1 Develop and implement a national monitoring system for NAPSAP	Utilise participatory approaches to formulate a monitoring and evaluation strategy for the NAPSAP, as	2008-2009	Monitoring, evaluation and systems for reporting on progress of	I-AM MALFF -DoF Ministry wrf Environment - NEC Other relevant national agencies

<b>Result Area E: Effective Monitoring and Evaluation of UNCCD National Action Programme and Strategic Action Plan (NAPSAP)</b>				
<b>Intervention</b>	<b>Actions</b>	<b>Time Frame</b>	<b>Performance Indicators</b>	<b>Responsibility/ Collaborators</b>
	well as for the implementation of UNCCD, with clearly defined milestones, performance indicators and time frames		NAPSAP and implementation of UNCCD established	Local communities
	Identify and utilise appropriate technologies for monitoring and assessment	2009 - onwards		Ministry wrf the Environment Other national agencies
	Liaise with regional and international entities to exchange information on best practices and progress in implementing UNCCD National Action Plans and avenues for regional collaboration and harmonization	2008- onwards	National, regional and international participation and collaboration enhanced	I-AM MALFF -DoF International and regional agencies
E.1.2 Enhance capacity of stakeholders to provide information and participate in the monitoring process	Develop standardized processes and procedures for monitoring, evaluation and reporting to ensure consistency among agencies involved in executing activities under the NAPSAP	2008 - 2009	Monitoring and Evaluation Reports produced with clearly defined indicators of progress	I-AM MALFF -DoF Other relevant agencies
	Maintain operations of relevant data bases to ensure accurate and timely generation of data related to implementation of the NAPSAP	2009 - onwards	Data bases maintained and reliable	I-AM MALFF -DoF Other relevant agencies
	Utilise relevant elements of PEO strategy to ensure ongoing training and other sensitization of all actors/local communities aimed at programme management	2009 - onwards	Increased knowledge based for decision-making in land management	I-AM MALFF -DoF Other relevant agencies

## **7 IMPLEMENTATION FRAMEWORK**

The adoption and implementation of the NAPSAP will require the appropriate enabling environment, due to the amplitude and complexity of the issues involved with land degradation.

### **7.1 Institutional framework and implementation arrangements**

The NAPSAP is broad based and this requires that the Government and stakeholders take a multi-faceted approach to its implementation. To achieve its objectives, there must be coordination of actions and initiatives under the NAPSAP and a mechanism whereby the lead organisations and institutions will be able to manage resources to effectively implement the NAPSAP. An appropriate institutional framework therefore must be established for the successful implementation of the NAPSAP.

The institutional arrangements recommended for achieving greater output will be based on:

- a) The establishment of a mechanism at the national level to coordinate the activities of the different stakeholders involved at the various stages in the process;
- b) The development and proper implementation of policies and programs within the various sectors, and the ability to secure financial support for the successful implementation of the initiative;
- c) Rationalization of the roles and responsibilities of the various private and public sector agencies with the intention of maximizing their output and deriving optimal synergies among them.

Several organisations are expected to be engaged in the planning and implementation of programmes, projects and actions, in particular government ministries and agencies in the various sectors, community organisations and groups, private sector stakeholders, including land resource users such as developers. In order to maintain and promote the sustainable land management (SLM) focus, the Ministry with responsibility for Lands through the Focal Point of the UNCCD should serve as the champion for implementation of the NAPSAP activities. Further, to ensure an environmental management and sustainable development focus the Ministries with responsibility for Sustainable Development and the Environment (e.g. SDES) will co-manage the process of implementation of the NAPSAP.

A NAPSAP Inter-Agency Mechanism (I-AM) which may take form of either a Committee or Board of Management will be established to provide oversight to the implementation of the NAPSAP. The I-AM will also provide the communications networking and principal nodes for the dissemination of information and coordination of actions, for stakeholders to play an integral part in the national decision-making process for the implementation of the NAPSAP.

### **7.1.1 NAPSAP Inter-Agency Mechanism (I-AM)**

The NAPSAP Inter-Agency Mechanism (I-AM), established within the Ministry with responsibility for Lands and through the Focal Point of the UNCCD will drive the implementation process for the NAPSAP and will, therefore, be responsible for the overall administration and coordination of the implementation activities of the NAPSAP.

The GOSL through the mechanism of the new Environmental Management Framework will establish a Management Authority for managing the broader issue of environment to which the NAPSAP Inter-Agency Mechanism will report and will provide the avenue for seeking Cabinet approval for the implementation of the NAPSAP. An appropriate line Ministry or Ministries will be identified from among the Ministries with responsibility for Land and the Environment, through which national budget allocations will be made for the implementation of the NAPSAP.

The I-AM should have broad representation from the range of state agencies, non-state parties including the private sector – resource users and civil society, with components of its management provided by the Ministries with responsibility for Land and the Environment. The proposed composition of the I-AM is as follows:

1. Ministry with responsibility for Lands through UNCCD Focal Point – provide Technical Supervision – Executing Agency – Co- chair
2. Ministry with responsibility for Sustainable Development or Environment – SDES - Executing Agency - Co - chair
3. Ministry of Communications, Works, Transport and Public Utilities (MCWTPU)
4. Ministry of Finance
5. Ministry of Tourism and Civil Aviation

6. Physical Planning Department, Ministry of Physical Development
7. Saint Lucia National Trust
8. National Emergency Management Organisation (NEMO)
9. Representatives of the community organisations and groups;
10. Other Technical Cooperation and Research Institutions; and
11. Private Sector and Non-Government Agencies.

### **7.1.2 Roles and Responsibilities**

#### NAPSAP Inter-Agency Mechanism (I-AM)

The role of the national NAPSAP Inter-Agency Mechanism is to facilitate the mainstreaming of functions and implementation of activities in the NAPSAP. The I-AM will perform a coordinating and facilitating function aimed at mainstreaming these activities into existing and new programmes during the course of implementation. The key functions of the I-AM will include:

- to establish and enhance linkages between national institutions and initiatives and local/community level development processes;
- to coordinate the inputs of, and facilitate collaboration among all parties;
- to coordinate organisational development and institutional support;
- to facilitate the identification of training needs and skills development;
- to conduct public awareness and information programmes, either directly or through collaboration with media houses, community organisations and local opinion leaders;
- to provide for a communication, negotiating and advocacy role in national processes;
- to advise Government through the Environmental Management Authority - NEC on the policy implications of proposed interventions.

#### The Management Mechanism

The day to day operations regarding implementation of the NAPSAP will be managed by a Programme Coordinator/Programme Liaison Officer who will be deployed from the existing staff of either the MALFF or Ministry with responsibility for the Environment/SDES. Hence, the focal point will be expanded to support a UNCCD national Secretariat, to house the Programme Coordinator/Programme Liaison Officer and be adequately equipped with a dedicated secretary and budget. Additional administrative support will be provided from existing staff of

the co-managing Ministries with responsibility for Land and Environment (MALFF/SDES), as needed.

The principal undertaking of the UNCCD Secretariat is the performance of those functions and the provision of these services that fall under the purview of the NAPSAP Inter-Agency Mechanism. The Secretariat will also be responsible for the implementation of specific core activities and projects.

### The Adhoc Technical Working Group

Further, the existing mechanism of the Adhoc Technical Working Group (ATWG) will be continued and utilised as a Technical and Scientific Committee to provide for the technical guidance for NAPSAP implementation, through a consultative process and provide for:

- Development of a framework to expedite the completion of the NAPSAP
- Assistance in acquiring available data and ensure a steady information flow among the ATWG, Focal Point and the Consultant during the preparation of the NAPSAP
- Oversight of the preparation of the NAPSAP
- Reviewing and refining the various draft outputs
- Mobilizing the necessary expertise and resources as needed for the preparation and implementation of the NAPSAP

The composition of the ATWG is expected to vary to facilitate the integration of the programmes developed under the UNCCD into wider national programmes to promote sustainable development.

The participatory process for involving partners in the development and implementation of the National Action Programme is critical for the success of the NAPSAP. The dynamic nature of such an initiative is well recognized and opportunities for updating the NAPSAP will be developed under the programme component for monitoring and evaluation.

Given the limitations observed in the initial participatory mechanism, the Programme Steering Committee, the use of the mechanism of the Adhoc working groups is recommended. The thrust of the participatory approach will be shifted from sensitization and awareness building to the development of more formal mechanisms for cooperation and collaboration among the various stakeholders.

## **7.2 Financing the NAPSAP**

The success of the NAPSP is highly dependent on the allocation of resources for executing the various actions. Funding for most of the activities will be derived from two main sources, local revenue (government, private sector, NGO) and external sources (grant funds).

## **Local Revenue (government, private sector, NGO)**

The country to complete its obligations to the Convention will seek to co-finance the activities to be undertaken to ensure that the NAPSAP is part of a “living” and dynamic process that feeds into a broader investment plan, which has as its ultimate aim the achievement of the desired outcomes of sustainable land management and poverty alleviation for both national and global benefits.

The GOSL will provide partial funding for the implementation of the NAPSAP, mainly through programme budgets through the mainstreaming of NAPSAP activities into the annual plans and budgets of agencies currently implementing programmes that impact on the management of natural resources. The establishment of a coordinating mechanism is expected to result in more efficient use of the country’s already scarce resources of, as the roles and responsibilities of each agency would be clearly defined thereby avoiding duplication and overlaps in the implementation of activities. However, it is surmised that at least more than fifty percent of the activities outlined in the NAPSAP are or could be funded by recurrent expenditure. The additional funding will be derived either through capital initiatives and projects from development partners, donor agencies and the local private sector.

A financial and economic analysis will be undertaken as one of the precedent activities within the framework of the NAPSAP implementation, in order to estimate the cost of implementing the NAPSAP, develop a financing plan and mechanisms for revenue generation, taking into account the overarching environmental management programme and related Environmental Trust Fund.

One of the main mechanisms for revenue generation will be through the cost recovery mechanisms which will be explored through the implementation of the recommendations of the consultancy for development of a framework for Compensation for Environmental Services (CES/PES) to develop market based approaches to watershed management.

## **External Sources**

The GEF has become a financial mechanism of the UNCCD, and land degradation is a new Focal Area of the GEF. Country Parties can now access GEF resources through the Operational Programme 15 for Sustainable Land Management (SLM) as a means to maintaining and improving ecosystem integrity in the context of sustainable development.

Funding for some key activities to facilitate more direct implementation of the Convention obligations is still required. International funding will thus be sought

from the UNCCD's Global Mechanism (GM), as well as the GEF, for the direct costs associated implementation of the NAPSAP.

Other funding support will be derived through the various EU – SFA and other donor programmes.

### **7.3 Benchmarks and Indicators for Monitoring and Evaluation**

In order that problems be addressed after being identified, it is important that benchmarks and indicators be set to monitor progress. Benchmarking needs to be integrated within organization management processes and procedures. It must be noted that land degradation is of a complex nature and the physical, social, economic, political and environmental processes requires all involved to successfully combat this problem.

#### **Benchmarks and Indicators for Land Degradation**

The second sub-regional workshop on the development of benchmarks and indicators in Latin America and the Caribbean was held in Saint Lucia in February 2003. At that workshop, the parties, including the 17 countries of the Caribbean sub-region, recognized the development of benchmarks and indicators for land degradation as an integral project of the Regional Action Programme for the implementation of the UNCCD in Latin America and the Caribbean. The development of benchmarks and indicators specific to the sub-region was the approach of choice, given the peculiarities in problems and conditions, both bio-physical and socio-economic, among countries of the sub-region. Consequently, the NAPSAP will seek to support development of benchmarks and indicators that can be applied at the national, regional and sub-regional levels.

The development of benchmarks and indicators for land degradation is recognized as an ongoing process; hence, a regional working group was created in February 2003 to begin and sustain the process. The development of benchmarks and indicators for assessing status and measuring progress at the national level will consider the benchmarks and indicators already in use by the various agencies/institutions for monitoring environment and climate variability. This process is continuing through the ATWG. As such, one of the activities being proposed as part of the NAPSAP is to continue working with the established working group and review and revise all the relevant information on benchmarks and indicators as these pertain to land degradation and drought accordingly.

The systems to be adopted for monitoring and assessment will also, as far as possible, take advantage of new and up-to-date technology that is compatible with local requirements and conditions. For example, the choice of equipment

being procured under the project proposed to address for early warning systems for drought, which is being funded by the World Bank, is underpinned by technological advancements in the field.

For effectiveness, benchmarks and indicators are not to be too data intensive. For example, surface water availability index could be used as a performance indicator and the biophysical indicators could be plant yellowing, animal migration and emergence of plant pathogens. Traditional knowledge could also be used such as correlations between moon changes and rainfall, and animal behaviour.

Based on the various outputs of the ATWG, the following have been suggested as benchmarks to be considered in monitoring and evaluation: -

- Soil particle size, pH and nutrient level
- Volumes and type of fertilizers used
- Land yields – volume and size
- Percentage vegetation cover – total biomass
- Number of plant and animal species in area
- Season distribution of rainfall
- Loss of topsoil or sediment during rainstorms
- Include a benchmark for soil pollution/ re volumes of herbicides and insecticides, other pesticides

### **Benchmarks and Indicators for Participatory Approach**

The participatory approach plays a fundamental role in addressing the problems caused by land degradation. This means that there is a need for effective action at all levels which shows the need for popular participation. For this to take place the legal and institutional frameworks need to be in place. This brings up the issue of that need for examination of the broader issues where local government is concerned so that the desired results can be achieved. The following are suggested qualitative and quantitative indicators for monitoring the participatory approach: -

Qualitative Indicators:

- Government policy established to institutionalize the participatory approach
- Legislation developed and enforced to support policy
- Institutional mechanism to formalize the participatory approach
- Investment in public education by the State
- Feedback mechanisms which ensure the continued incorporation of the views of stakeholders
- Direct involvement of NGO and CBO communities
- Empowerment of communities through training and other capacity building measures
- Ease of access of information
- Private sector involvement in the implementation process

- Clear definition of roles and responsibilities of all stakeholders

Quantitative Indicators:

- Percentage of stakeholders informed as a direct result of government actions
- Percentage of the population actively involved at all levels in the implementation of the Convention due to conscious action of the government
- Timely access of user-friendly information by all stakeholders
- Number of national and local activities initiated by government
- Number of activities initiated by non-state actors
- Level of involvement of women and youth

Further review and finalisation of these indicators will be conducted under the NAPSAP.

## 8 SUMMARY PROGRAMME

The following table summarises the programme for achieving the targets articulated in the NAPSAP within the specific timeframes over a 10 year period. The activities under the five result areas have been categorized as short, medium or long term actions depending on the commencement date for each activity. Five (5) project profiles have also been developed to initiate the implementation of the NAPSAP (Section 9).

**Table 6: Summary of the Results-based Programme for Implementing the UNCCD National Action Plan and Strategic Action Plan (NAPSAP)**

<b>VISION</b>			
Systematic and sustainable management and conservation of the land resources of Saint Lucia as a valuable natural resource and economic asset to meet current and future social and economic development, cultural and ecological needs, through measures that ensure the long term productivity of land and integrity of the water resources for the benefit of all its citizens.			
<b>Goal for 2008-2018:</b>			
The creation of a holistic and cohesive framework for integrating the sustainable use and management of the country's land resources into national development, ensuring that both the intrinsic/natural and man-made factors (root causes) contributing to land degradation and drought are effectively addressed, through a fully participatory approach.			
<b>Outcome 1</b>	<b>Outcome 2</b>	<b>Outcome 3</b>	<b>Outcome 4</b>
An enlightened society, capable of responsible action for and active participation and involvement at the national, sector and community level in sustainable land management	Functional framework and formal mechanisms for institutional collaboration, supported by appropriate authority including policy and legislation, and resources, to promote good stewardship and effective land management.	Sustainable and equitable use of the country's natural resources, in particular land and water to satisfy current and future socio-economic, cultural and ecological needs.	Effective monitoring and assessment mechanisms implemented for sustainable land management
<b>Result Areas</b>			
<b>A. Framework for Behavioural Change Established</b>	<b>B. Enhanced Capacity and Institutional Strengthening</b>	<b>C. Sustainable Land Management Approach Adopted</b>	<b>D. Systems for Disaster Risk Management Established</b>
➤ <i>Enhanced awareness of all publics (communities, schools, judiciary, politicians,</i>	➤ <i>Sustainable land management approach integrated in to key</i>	➤ <i>Integrated Development Plans produced from national to local area level, incorporating an</i>	➤ <i>Methodologies for assessment of land degradation and drought monitoring established</i>

<p>businesses, land developers, etc.) on land degradation and drought issues to improve the practice of making wise choices with respect to land use and management</p> <ul style="list-style-type: none"> <li>➤ Mechanisms for documentation and provision of access facilitated, to increase use of traditional knowledge and practices to promote sustainable land management and mitigate effects of drought</li> <li>➤ Sustainable livelihoods approach utilised in promotion strategy for increased community participation and involvement to engender a positive socio-cultural relationship between the people and the land</li> <li>➤ Establishment of Land Resource Information System (LRIS) facilitated and utilised to develop comprehensive database on land degradation and drought parameters to set baseline and system for ongoing monitoring and assessment of implementation of NAPSAP to achieve effective management of land resources</li> <li>➤ Opportunities for piggy backing on Biodiversity Clearing House Mechanism (CHM) and Information Management System utilised for creating effective information and communication systems</li> </ul>	<p>sector and agency policies, programmes and plans through strengthened linkages facilitated State Leadership initiative for Integrated Development Process (IDP) for a harmonised policy framework for effective land management for mitigating land degradation and drought effects</p> <ul style="list-style-type: none"> <li>➤ Good governance promoted through use of appropriate tools (e.g. land use/zoning plan) and instruments (economic and financial) supported by financial facility coordinated with proposed Environmental Trust Fund, to facilitate efficient functioning of land markets for more effective land use and management and mitigating land degradation and drought effects</li> <li>➤ Establishment of functional Inter-agency Mechanism (I-AM) with relevant authority and mandate to coordinate and oversee implementation of activities under the NAPSAP</li> <li>➤ Relevant environmental and</li> </ul>	<p>integrated watershed management approach</p> <ul style="list-style-type: none"> <li>➤ Framework for sustainable forest resources management enhanced to arrest land degradation and mitigate drought within a sustainable land management approach adopted</li> <li>➤ Sustainable patterns of land use and management that protect and enhance the productivity of agricultural lands implemented</li> <li>➤ Nexus between poverty and land degradation addressed through creation of increased opportunities for sustainable livelihoods and income generation</li> <li>➤ Physical measures instituted for rehabilitation and restoration of degraded lands utilising community-based methods</li> <li>➤ Impediments including those related to land ownership removed to promote increased investment in SLM</li> </ul>	<p>utilising Riverbank Assessment methodologies as a base</p> <ul style="list-style-type: none"> <li>➤ Disaster risks and hazards assessed and relevant Disaster Management Plans revised/ produced (land degradation, drought, flood, fire – wildfires, etc.)</li> <li>➤ Procedures for assessment of developments on land use and management incorporated into Environmental Impact Assessments (EIAs)</li> <li>➤ Increased resilience of soil to natural phenomena and man-made disasters through implementation of appropriate risk reduction and mitigation measures</li> <li>➤ Appropriate systems and predictive models developed for early warning at community level</li> </ul>
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<p><i>aimed at achieving effective management of land resources developed</i></p>	<p><i>land related legislation, regulations and other legal measures, revised, enacted and enforced to support a harmonised and integrated and improved legislative framework for land management</i></p> <ul style="list-style-type: none"> <li>➤ <i>Mechanisms established to strengthen and improve institutional (agency/ organisations and communities) systems, processes, procedures and technical capacities to effectively execute their mandate as it relates to land use and management</i></li> <li>➤ <i>Procedures and guidelines for economic valuation of land resources established to support informed decision making related to land</i></li> <li>➤ <i>Capacity developed at <u>Individual Level</u> through a long term national coordinated training and skills upgrading programme and improved tools and methods to support sustainable land management</i></li> </ul>		
<b>Result Areas</b>			

<p><b>E. Effective Monitoring and Evaluation of UNCCD National Action Programme and Strategic Action Plan (NAPSAP)</b></p>			
<ul style="list-style-type: none"> <li>➤ <i>Monitoring, evaluation and systems for reporting on progress of NAPSAP and implementation of UNCCD established and designed with adequate flexibility to respond/adapt to changing environment</i></li> <li>➤ <i>Systems and standardized processes and procedures for monitoring, evaluation put in place</i></li> <li>➤ <i>Adequate human and financial resources made available for implementation of NAPSAP</i></li> <li>➤ <i>Education and awareness programme further elaborated and implemented</i></li> </ul>			

## 9 PROPOSED PROJECTS

The proposed projects under the NAPSAP are outlines under the relevant programme areas so that the connection between projects and programme areas is clear.

<b>PROJECT PROFILE</b>	
<b>Programme:</b> Capacity Development and Institutional/ Organisational Strengthening	<b>Project Number:</b> 1
<b>Result Area:</b> Enhance the policy, legislative and institutional framework	
<b>Project Title:</b> Institutionalising SLM	
<b>Justification:</b> Economic growth and sustainable development issues continue to be discussed in isolation of the land degradation and drought problems. However, several policies, strategies and other statements in various sectors, relevant to the regulation of the management and use of lands, or that address some aspect of land degradation, <i>albeit</i> to varying degrees, have or are being developed and or implemented. However, the lack of a coordinated policy framework to facilitate mainstreaming of land degradation and drought issues into environmental and other policy areas can lead to policy decisions across and even within sectors that can potentially exacerbate land degradation and drought.	
<b>Project Objectives:</b> To facilitate mainstreaming of sustainable land management (SLM) into sectoral policies, plans, regulations and procedures	
<b>Project Duration:</b> 6 years	<b>Estimated Cost:</b>
<b>Activities and Tasks:</b> Activities should include, <i>inter alia</i> : <ul style="list-style-type: none"> <li>▪ Investigate the adequacy of national policy, legal and institutional frameworks to foster SLM in the various sectors.</li> <li>▪ Provide recommendations regarding appropriate adjustments/changes to current policy, legislative and institutional arrangements to SLM. Recommendations should be made within the framework of the overarching environmental management policy and include proposed institutional arrangements for SLM.</li> <li>▪ Present findings to relevant decision makers and other stakeholders at appropriate forum with a view to refining and implementing recommendations.</li> </ul>	
<b>Implementing Agency:</b> Ministry of Agriculture, Lands, Forestry and Fisheries	

<b>PROJECT PROFILE</b>	
<b>Programme:</b> Capacity Development and Institutional/ Organisational Strengthening	<b>Project Number:</b> 2
<b>Result Area:</b> Build human resource capacity for sustainable land management	
<b>Project Title:</b> Capacity Building for SLM	
<p><b>Justification:</b> There is a need to ensure sustainable management of the land resources of Saint Lucia in order to enhance ecosystem health, integrity, stability, functions and services. Although the concept of land management has been promoted for some time, this has been done primarily at the sector level, with very few attempts to reconcile often conflicting needs and interests of different sectors and stakeholders, thus leading to more conflicts and pressure on land and its natural resources. Most land use planning exercises have tended to be top-down, driven largely by pressures for economic growth and are not supported by institutional reform and decentralization required to allow effective development, implementation and enforcement of the existing systems. Capacity limitations also preclude integration of environmental and participatory considerations into land management.</p> <p>Given that limited capacity is a major constraining factor to development in general in Saint Lucia, like most developing small island States, systematic capacity building for mainstreaming of SLM principles is essential. The systematic development and enhancement of human resources would enhance institutional mechanisms for implementation of SLM.</p>	
<b>Project Objectives:</b> To strengthen institutional capacity and create an enabling environment for SLM	
<b>Project Duration:</b> 8 years	<b>Estimated Cost:</b>
<p><b>Activities and Tasks:</b> Activities should include, <i>inter alia</i>:</p> <ul style="list-style-type: none"> <li>▪ Conduct an assessment of capacity needs for effective SLM. This needs assessment should examine capacity issues within both the public and private sectors.</li> <li>▪ Design a capacity building programme based on the needs assessment. The programme must cater to the needs of various groups and provide innovative ways of building capacity given the varied target audiences.</li> <li>▪ Implement the capacity building programme.</li> <li>▪ Develop and implement appropriate mechanisms to facilitate a coordinated approach to SLM. These mechanisms must give consideration to other existing or planned coordinating mechanisms, especially as these relate to overall environmental management. Mechanisms must also take into account changes over time as capacity improves.</li> </ul>	
<b>Implementing Agency:</b> Ministry of Agriculture, Lands, Forestry and Fisheries	

<b>PROJECT PROFILE</b>	
<b>Programme:</b> Establishment of Framework for Behavioural Change	<b>Project Number:</b> 3
<b>Result Area:</b> Promote behavioural change	
<b>Project Title:</b> Changing behaviour through awareness	
<p><b>Justification:</b> Land degradation is largely the result of poor practices due to limited knowledge or poor attitudes towards the management and utilisation of land resources. As such, sustainable land management calls for public and private sector organisations, Government, communities, corporate citizens and individuals, to take actions to manage land resources sustainably and correct negative impacts that may have been brought about by their actions.</p> <p>While it is important to target the wide range of societal groups, there is a need to focus on groups that can have the largest impact. For example, a key target group should be the youth, where it is still possible to engender attitudinal changes that promote sustainable management and wise use of land resources or correct negative impacts of land degradation and drought.</p> <p>In addition, underlying causes of land degradation are also related to the poor knowledge, attitudes and practices of farmers and land owners/users. Over the years, there has been a progressive decline in the use of more sustainable traditional practices in farming. Therefore, apart from youth, outreach programmes should also specifically target farmers and land owners/users.</p>	
<b>Project Objectives:</b> To promote behavioural change through awareness and access to information	
<b>Project Duration:</b> 5 years	<b>Estimated Cost:</b>
<p><b>Activities and Tasks:</b> Activities should include, <i>inter alia</i>:</p> <ul style="list-style-type: none"> <li>▪ Develop relevant policies to facilitate information sharing and access to relevant information by all.</li> <li>▪ Develop and implement a public awareness and education programme that focuses on SLM. This programme must endeavour to inform on impacts, root causes and best practices, and target the wide range of stakeholders impacting SLM. The programme must also give consideration to issues raised in the NAPSAP and specific actions recommended.</li> <li>▪ Develop and implement mechanisms for improving participatory management by empowering communities to define the extent of land degradation and to respond appropriately.</li> </ul>	
<b>Implementing Agency:</b> Ministry of Agriculture, Lands, Forestry and Fisheries	

<b>PROJECT PROFILE</b>	
<b>Programme:</b> Sustainable Land Management	<b>Project Number:</b> 4
<b>Result Area:</b> Adopt and promote sustainable land use practices	
<b>Project Title:</b> Promoting SLM through incentives and recognition	
<p><b>Justification:</b> There are a great many possibilities for the public participation in SLM. However, generally, the response of the public to participate in such activities is low. To entice the public to participate in meaningful activities and to promote stewardship towards SLM issues, a number of incentives can be employed.</p> <p>Awards and State recognition of the efforts of communities, businesses, school, etc. can act as an incentive to stakeholders to participate in SLM and adopt appropriate SLM practices. The impacts of such schemes are enhanced by ongoing public awareness, effective policies and regulations, and active monitoring and enforcement.</p>	
<b>Project Objectives:</b> To promote SLM through competition and recognition	
<b>Project Duration:</b> 2 years	<b>Estimated Cost:</b>
<p><b>Activities and Tasks:</b> Develop and implement a national award system to promote SLM practices. This should entail, among others, the following:</p> <ul style="list-style-type: none"> <li>▪ Identify various classes of awards.</li> <li>▪ Develop an award icon for each award class (e.g. industry, government, small businesses, tourism related businesses, agriculture related businesses, schools, among others) – this should be done by way of a competition opened to the public.</li> <li>▪ Develop and implement a promotion campaign for these awards and invite schools, businesses, etc. to apply. Application should include presentation of a SLM plan for the school, business, etc.</li> <li>▪ Define criteria for evaluation and selection of awardees. This criteria should be based on, <i>inter alia</i>, degree of implementation and success of SLM plan.</li> </ul>	
<b>Implementing Agency:</b> Ministry of Agriculture, Lands, Forestry and Fisheries	

<b>PROJECT PROFILE</b>	
<b>Programme:</b> Establishment of Framework for Behavioural Change	<b>Project Number:</b> 5
<b>Result Area:</b> Promote behavioural change	
<b>Project Title:</b> Community Action	
<b>Justification:</b> While rules and regulations are essential to encourage SLM practices, it is well recognized that involving key stakeholders in management efforts fosters a sense of ownership and encourages compliance. Stakeholder participation can also serve to empower communities and other such groups to take action in support of SLM.	
<b>Project Objectives:</b> To stimulate and mobilise communities into taking action to promote and practice SLM.	
<b>Project Duration:</b> 2 years	<b>Estimated Cost:</b>
<b>Activities and Tasks:</b> Develop and implement a community SLM project competition. This should entail, among others, the following: <ul style="list-style-type: none"> <li>▪ Develop project concepts in collaboration with interested communities. A minimum of 8 communities should be targeted. Project concepts could include best farming practise, river stabilisation, reforestation, and soil stabilisation, among others.</li> <li>▪ Provide technical assistance to communities to develop projects based on their respective concepts. Consideration should be given to creating an adopt-a-community programme to facilitate this. A community may be adopted by an agency (public or private) to give support in developing the project. However, the project must be developed in such a manner as to allow implementation by the community.</li> <li>▪ Identify various prizes to be won. Consideration should be given to seeking sponsorship from private and public sectors. Projects should be judged based on pre-selected criteria, including level of project implementation and success.</li> <li>▪ Develop and implement a promotion campaign for to highlight the project's purpose, application process and other procedures, as well as end results.</li> </ul>	
<b>Implementing Agency:</b> Ministry of Agriculture, Lands, Forestry and Fisheries	

<b>PROJECT PROFILE</b>	
<b>Programme:</b> Disaster Risk Reduction and Early Warning Systems	<b>Project Number:</b> 6
<b>Result Area:</b> Establish Systems for Disaster Risk Reduction	
<b>Project Title:</b> Information and Communications Management (ICM) for Disaster Risk Reduction	
<p><b>Justification:</b> As the population of countries expand, the need to rationalise the use of land becomes increasingly important – this is especially true for small island States such as Saint Lucia, where land use is limited not only by size, but also by the island’s rugged terrain.</p> <p>The need for an efficient land management system is thus critical to ensure maximum benefits are derived from this scarce commodity - land; and this must be supported by comprehensive land information system. However, the costs for the required support equipment and skilled staff are high and can limit the development of such systems in small developing States where there is a paucity of resources.</p> <p>Several initiatives for information management with respect to land resources such as the Riverbank Assessment Database in the Department of Forestry and the National GIS, are entrained. However, more specific interventions will be required to address the peculiarities of an ICM with respect to disaster reduction risk reduction as it relates to land degradation and the impacts of drought.</p>	
<b>Project Objectives:</b> To develop the use of land information systems to determine land quality with a view to recommending appropriate land management practices	
<b>Project Duration:</b> 2 years	<b>Estimated Cost:</b>
<p><b>Activities and Tasks:</b> Activities should include, <i>inter alia</i>:</p> <ul style="list-style-type: none"> <li>▪ Conduct an assessment of the needs of Saint Lucia as it relates to land management and information systems.</li> <li>▪ Conduct an assessment of the current capacity of agencies with responsibility for maintaining such systems.</li> <li>▪ Based on the assessment of needs and capacities, and within context of existing Riverbank Assessment database and National GIS make recommendations to improve current land management and information systems. Given financial constraints, recommendations must give consideration to progressive land management and information systems that will enable expansion as equipment, technology and capacity improve.</li> </ul>	
<b>Implementing Agency:</b> Ministry of Agriculture, Lands, Forestry and Fisheries	

<b>PROJECT PROFILE</b>	
<b>Programme:</b> Disaster Risk Reduction and Early Warning Systems	<b>Project Number:</b> 7
<b>Result Area:</b> Disaster Risk Reduction	
<b>Project Title:</b> Inventory of Degraded and Vulnerable Lands	
<p><b>Justification:</b> Inappropriate land use and management, and the resultant land degradation ultimately increase the island's vulnerability to disasters, especially to the impacts of flooding and landslides. There is also growing concern about the vulnerability to the non-traditional threats of hazards arising from human activities and habitation patterns, including climate change and sea level rise, and biodiversity loss. Reduction in the land's vulnerability weakens the natural resilience, with both physical and socio-economic consequences. Disaster risk reduction and mitigation is thus critical for protecting health and safety, both in terms of human life and the country's natural resources.</p> <p>The island's natural resource base is crucial to the future of the country's economy and must be considered in any national hazard mitigation program or plan. Development pressures and neglect have substantially damaged many important elements of the natural environment, and will continue to facilitate destruction in the future, if left unchecked.</p> <p>While the main objective of the National Emergency Management Organisation is to eliminate or reduce the human loss and suffering resulting from natural disasters, their disaster planning functions do not necessarily consider mitigation of desertification/land degradation and drought impacts.</p>	
<b>Project Objectives:</b> To conduct vulnerability assessments and inventories, and map areas that are prone to land degradation and drought (including flooding).	
<b>Project Duration:</b> 4 years	<b>Estimated Cost:</b>
<p><b>Activities and Tasks:</b> Activities should include, <i>inter alia</i>:</p> <ul style="list-style-type: none"> <li>▪ Conduct baseline studies to establish benchmarks and indicators as these pertain to root causes of land degradation and factors that cause drought.</li> <li>▪ Conduct stocktaking to determine locations and extent of vulnerable to land degradation, drought and flooding, based on existing information (reports, vulnerability assessments, etc.).</li> <li>▪ Classify and map lands vulnerable to land degradation and drought impacts.</li> <li>▪ Feed information generated from assessments and mapping exercise into land management and information systems for the purposes of disaster risk reduction through the development of early warning and forecasting systems.</li> </ul>	
<b>Implementing Agency:</b> Ministry of Agriculture, Lands, Forestry and Fisheries	

<b>PROJECT PROFILE</b>	
<b>Programme:</b> Sustainable Land Management	<b>Project Number:</b> 8
<b>Result Area:</b> Implement interventions for amelioration of poor land productivity	
<b>Project Title:</b> Agricultural Land Bank	
<p><b>Justification:</b> Agriculture has traditionally been the mainstay of the island's economy. The poor management of land in the context of agriculture continues to be a key contributor to environmental and land degradation in Saint Lucia, largely as a consequence of the deforestation and associated unsustainable agricultural practices.</p> <p>The potential loss of soil productivity is a threat to the sustainability of agriculture and food production, as agriculture and food production is particularly dependent on the upper horizons of the soil, which are most vulnerable to erosion by water and wind. Reduced agricultural and food production in conjunction with associated global risks of increased food prices and rising fuel costs, are direct threats to national food security.</p> <p>Further, with the pressure of a growing population, it would seem prudent to protect the area under agriculture, if not bring more area under cultivation. However, the reverse is being witnessed as Saint Lucia is faced with competing demands for land from the non-agriculture sector and prime agriculture land is being diverted for non-agricultural purposes. This has serious implications for food security.</p> <p>Consequently, the issue of establishing a land bank has become a high priority to support agricultural diversification and food security within a sustainable land management framework.</p>	
<b>Project Objectives:</b> To address the need to maintain productive, arable land, both Government and private lands, which still provide yields in accordance with natural potential, as well as obtain optimal use from currently under-utilized lands	
<b>Project Duration:</b> 7 years	<b>Estimated Cost:</b>
<p><b>Activities and Tasks:</b> Activities should include, <i>inter alia</i>:</p> <ul style="list-style-type: none"> <li>▪ Conduct an assessment of the current and future needs for agricultural lands.</li> <li>▪ Identify and map current agricultural lands and potential agricultural lands to meet future needs</li> <li>▪ Develop and implement rehabilitation programmes for degraded lands to support the development of an agricultural land bank.</li> <li>▪ Incorporate current and potential agricultural lands into a national land use plan, which should be based on an overall national development vision and plan for Saint Lucia.</li> <li>▪ Develop appropriate institutional arrangements, including policies to facilitate the formation of the proposed land bank to serve current and future agricultural needs.</li> </ul>	
<b>Implementing Agency:</b> Ministry of Agriculture, Lands, Forestry and Fisheries	

<b>PROJECT PROFILE</b>	
<b>Programme:</b> Establishment of Framework for Behavioural Change	<b>Project Number:</b> 9
<b>Result Area:</b> Provide incentives to promote private and community partnerships	
<b>Project Title:</b> Incentive Scheme for SLM	
<p><b>Justification:</b> Often farmers and other land users are seen as the main persons responsible for land conservation. However, in reality, the responsibility for maintaining productive lands and ecosystem functioning to enable food security and access to clean water rests with the State, as well as society at large, since effects of poor land use and management impacts the entire population.</p> <p>Incentives can form an effective mechanism for fostering SLM practices. Incentives can work in support of other efforts such and public awareness initiatives and regulations. However, it should be noted that any incentive scheme must have a clear purpose, which must be directly related to desired outcomes.</p>	
<b>Project Objectives:</b> To design an incentive scheme that promotes SLM	
<b>Project Duration:</b> 8 years	<b>Estimated Cost:</b>
<p><b>Activities and Tasks:</b> Activities should include, <i>inter alia</i>:</p> <ul style="list-style-type: none"> <li>▪ Determine aspects of SLM to be targeted for address using incentives.</li> <li>▪ Identify financial and other incentive mechanisms, tools and programmes and investigate the applicability of these to the Saint Lucian environment.</li> <li>▪ Assess the financial implications and funding opportunities for the various incentive options.</li> <li>▪ Based on investigations, design an appropriate incentive scheme and establish a framework for its implementation.</li> <li>▪ Promote and market the scheme to the appropriate audiences.</li> <li>▪ Implement scheme.</li> <li>▪ Prepare and implement a monitoring and evaluation plan to measure the success of the incentive scheme.</li> </ul>	
<b>Implementing Agency:</b> Ministry of Agriculture, Lands, Forestry and Fisheries	

<b>PROJECT PROFILE</b>	
<b>Programme:</b> Monitoring and Evaluation	<b>Project Number:</b> 10
<b>Result Area:</b> Establish monitoring and evaluation system	
<b>Project Title:</b> Data and Information Needs	
<p><b>Justification:</b> While there is little detailed data on the economic losses resulting from land degradation and drought, there is no doubt of the huge drain on the country's economic resources as evidenced by the oftentimes colossal losses resulting from human injury, loss of lives and destroyed infrastructure, crops and livestock, and household, and commercial and industrial assets.</p> <p>As such, it is imperative that information on land degradation be improved. This could be done through consolidation of available information, assessment of impacts, identification of root causes and vulnerability mapping. Further, information exchange and monitoring systems also need to be improved as this will enable stakeholders to define the extent of land degradation and respond appropriately.</p>	
<b>Project Objectives:</b> To create a comprehensive database on the land degradation and drought including information on impacts, root causes, vulnerability of lands and related spatial data to facilitate ongoing monitoring for improving land use and management.	
<b>Project Duration:</b> 3 years	<b>Estimated Cost:</b>
<p><b>Activities and Tasks:</b> Activities should include, <i>inter alia</i>:</p> <ul style="list-style-type: none"> <li>▪ Conduct a situational analysis and data needs assessment as it relates to sustainable land management in Saint Lucia.</li> <li>▪ Develop priority areas for research and monitoring.</li> <li>▪ Design and implement a monitoring programme to facilitate sustainable land management, including establishing benchmarks, and identifying appropriate methodologies and indicators.</li> <li>▪ Develop protocols for data collection, management and information sharing.</li> <li>▪ Design and institute appropriate mechanisms for: <ul style="list-style-type: none"> <li>○ Data Entry and Compilation,</li> <li>○ Data transformation and spatial representation to facilitate spatial analysis, and</li> <li>○ Data analysis and interpretation and dissemination to facilitate informed decision making.</li> </ul> </li> </ul>	
<b>Implementing Agency:</b> Ministry of Agriculture, Lands, Forestry and Fisheries	

**Appendix 1 Possible Impacts of Land Degradation on Small Island States such as Saint Lucia**

Primary Effect	Impact	Implications
Soil Erosion (water and wind) Riverbank erosion Soil fertility loss Degradation of soil structure	Soil Degradation  Deterioration of the physical, chemical and biological or economic properties of soil; Slowness of recovery from a disturbance	Lowering of the current and/or future capacity of the soil to support human life – wrt food production  Consequent negative impact on economic growth and human development
Deforestation - disappearance of forest cover	Long-term loss of natural vegetation bearing down on both surface and groundwater resources  More rapid evapo-transpiration in plants.	Reduced agricultural production if sufficient water not available. Reduced food production  Reduced water supply and attendant livelihood, sanitation and health issues  Negative impact on environment
Aridity or dryness (dry land conditions) which is the lack of available moisture in average climatic conditions  More intense extreme drought events	Negative balance between moisture inputs (annual precipitation levels) and moisture losses (evapo-transpiration)  Changes in water storage (rivers, groundwater, lakes and soil moisture)  Changes in resource uses (food production, cash crops, range farming, trees and woodlands)	Disruption of habitat, and source of livelihoods  Economic losses – threat to economic well being of people  Threat to integrity, stability functions and services of ecological systems in the long run .
Conversion of forests, mangrove swamps, grasslands and riverine ecosystems to unsustainable productive uses  Sediment choking of rivers and waterways  Sediment depositions on productive land	Loss of carbon pools and sinks  Land loss  Loss of ecosystems functions and services  Saltwater intrusion on coastal farmland resulting in reduced agricultural output.  Increased coastal erosion and property/infrastructure damage	Negative implications for other global environmental concerns such as climate change and biological diversity loss  Loss of biodiversity and key/unique ecosystems  Increased disaster risk, e.g. landslides  Increased pollution of

<b>Primary Effect</b>	<b>Impact</b>	<b>Implications</b>
Water logging Soil salinisation Increased pollution of nearshore coastal waters	(including tourism plant) during storms. Increased damage to crops, biodiversity, etc. Reduced productivity or death of reefs in turn impacting on fisheries production. Increased risk to human life.	international waters

**Source: UNCCD Thematic Assessment, 2006**