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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

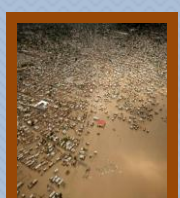
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FINAL REPORT

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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TABLE OF CONTENTS

1.0	INTRODUCTION	4
1.1.	Background	5
1.2.	Objectives of the Consultancy	6
1.3.	Purpose of the Final Report	7
2.0	SUMMARY OF CONSULTANT’S ACTIVITIES	9
2.1.	Terms of Reference	9
2.2.	Deliverables	12
2.3.	Client Input.....	13
3.0	METHODOLOGY	14
3.1	Approach	14
4.0	OUTCOMES/OUTPUTS.....	19
4.2	Formulation of a Strategic Action Plan (SAP).....	20
4.3	Development of Public Education and Outreach Strategy.....	21
4.4	Capacity Building for Assessing and Monitoring Land Degradation and Drought.....	22
	CONCLUSION	25

List of Tables

Table 1.	Summary of Activities and Outputs for Completion of UNCCD National Action Plan (NAP).....	19
Table 2.	Summary of Activities and Outputs for Formulation of Strategic Action Plan (SAP) Component.....	20
Table 3.	Summary of Activities and Outputs of Development of Public Education and Outreach Strategy Component	21
Table 4.	Summary of Activities and Outputs of Capacity Building Component	22
Table 5	Summary of Activities and Outputs related to project management component of consultancy	23

List of Appendices

Appendix 1.	Terms of Reference	27
Appendix 2.	Indicative List of Key Stakeholders.....	39
Appendix 3.	List of Documents Reviewed	41

CONSULTANCY TO DEVELOP NATIONAL ACTION PLAN AND STRATEGIC ACTION PLAN TO COMBAT LAND DEGRADATION AND DROUGHT in Saint Lucia

FINAL REPORT

1.0 INTRODUCTION

The Government of Saint Lucia (GOSL), through the Ministry of Agriculture, Lands, Forestry and Fisheries (MALFF) - Department of Forestry, with funding under the EU Special Framework of Assistance (SFA) 2003 programme, Economic and Agricultural Diversification and Poverty Reduction through Integrated Natural Resources Management, implemented the consultancy “Development of National Action Plan and the Strategic Action Plan (NAPSAP) for Saint Lucia”. The goal of the SFA 2003 programme, to improve the management of Saint Lucia’s natural resources by building capacity and developing consensus on a collective vision for the sufficient, sustainable and equitable use of the resources, is in line with the national priorities of the Government of Saint Lucia and in keeping with the obligations of the United Nations Convention to Combat Desertification/Land Degradation (UNCCD) and other multilateral environmental Agreements (MEAs).

In response to the Terms of Reference issued for the consulting assignment, a team of four (4) consultants, with the particular professional and technical expertise and experience for undertaking the assignment, under the aegis of AGRICO LTD., were selected through a competitive bidding process. The team **comprised Ms. Luvette Thomas-Louisy - Team Leader/Agronomist and Natural Resource Management Specialist, Mr. Herbert Regis – Meteorologist, Mr Embert Charles - Public/Environmental Education Specialist and Ms. Elizabeth Charles-Soomer, Geographic Information Systems (GIS) Specialist.**

The service contract for the consultancy was signed on March 18th, 2008 and the work programme of activities initiated with an inception meeting between the consultants and the Client’s representatives, on March 31st, 2008. As a result of the slight delay in start-up, the Client accepted as per the Inception Report an assignment commencement date of April 1st, and a completion date of December 31st, 2008, inclusive of time for feedback on reporting.

An Inception Report was submitted on April 15th, 2008. A combination of the first and second interim reports was submitted on July 16th, 2008, as per the accepted work plan in the Inception Report. The Inception Report gave cognizance to the opportunity for optimizing time and effort, particularly with respect to stakeholder participation during implementation and proposed as an alternative to monthly progress reports, an Interim Progress report at month 6, providing a status of activity undertaken by the consultants to date and a summary of preliminary findings and recommendations. This allowed for the efforts of the consultants during implementation to be more focused on the final deliverables as opposed to report

writing. Hence activities scheduled across all Phases of the assignment were undertaken concurrently, towards the development of the final deliverables.

This final report provides a summary of the consultants' activities, and outcomes of tasks, with the main report comprising the final adaptation of the UNCCD National Action Plan and the Strategic Action Plan (NAPSAP) for Saint Lucia as an annexed document.

1.1. Background

The United Nations Convention to Combat Desertification (UNCCD) has been elaborated and well articulated as an instrument for achieving sustainable development, with a focus on addressing land degradation issues. On July 2, 1997, Saint Lucia signed the Convention to Combat Desertification/Land Degradation, negotiated under the auspices of the United Nations (UNCCD)¹.

Since signing the United Nations Convention to Combat Desertification (UNCCD), Saint Lucia continues to be faced with challenges with regard to land degradation and drought-like conditions, particularly in watersheds with high agricultural activity. The island, however, is no different from other small island developing states (SIDS), faced with the dilemma of balancing economic development and environmental conservation with limited resources.

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. Most notable are the GEF-funded Integrated Watershed and Coastal Area Management (IWCAM), OECS/NOAA project, OPAAL project, Sustainable Land Management (SLM) initiatives, financed by the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF), with the latter two having provided funding for capacity building and mainstreaming sustainable land management in Saint Lucia.

Many of the initiatives 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 in Saint Lucia 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

¹ The UNCCD was established in the wake of the 1992 Earth Summit in Rio de Janeiro

development, including poverty reduction, food security, employment generation opportunities, environmental quality, social cohesion and overall quality of life.

Although there are a number of agencies that advise and to some extent regulate the use of the natural resources in the country, the legislative framework to address the main objectives of the UNCCD, namely “to combat desertification and mitigate the effects of drought”. Some key pieces of legislation still require activation with regulations to permit enforcement. These include legislation such as the Forest, Soil and Water Conservation Ordinance (Chap. 25 of 1946) and Land Conservation Improvement Act (1992). Mechanisms for enforcement also need to be established. There is also need for a strong public education and outreach programme to ensure that public and private interests and civil society are sensitized and support the need for sound land management and conservation. Harmonisation of policies to guide strategic actions and to address gaps in national and sector policies and plans to address issues of land degradation and drought in an integrated way is also needed. To support all this, information management and capacity building is required for a sustained effort at combating land degradation and mitigating the effects of drought for sustainable economic and social development in the country.

In this regard, the Ministry of Agriculture, Forestry and Fisheries (MAFF), through the Department of Forestry which acts as the national focal point (NFP) for the UNCCD, has 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 use of available 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 expectation of the Client was that the consultancy the assignment will facilitate the achievement of the following (i) mainstreaming SLM amongst the relevant agencies, primary and secondary stakeholders (ii) introduce a system of effective monitoring and evaluation to support the identification, classification and mapping of land degradation (iii) further understanding of the socio-economic impacts of land degradation and drought. On a broader scale, the impact of land degradation and drought on agro-ecosystems may also be facilitated and presented in a monetary form.

The consultancy would also seek to complement ongoing initiatives to address water supply challenges through implementation of effective land management approaches. These include, water sector reform initiatives embodied within the National Water Policy (approved in 2006) and the Water and Sewerage Act of 2005, an Agricultural Policy and Strategic Plan, and a Coastal Zone Management Policy, as well as derive synergies from initiatives such as the Development of Watershed Plans, Local Development Practice Area concept, the IWCAM project, and other Sustainable Land Management (SLM) initiatives that are ongoing in select watersheds.

1.2. Objectives of the Consultancy

The primary objective of the Consultancy, as defined by the Client, was to contribute to the development of an integrated framework for combating land degradation in Saint Lucia and for mitigating the physical, biological and socio-economic impacts of

land degradation and drought. This is in keeping with obligations of the Parties to the Convention: Parties are required to develop a National Action Programme (NAP) to address land degradation and mitigate the effects of drought. In the process of developing and implementing NAPs, Parties are encouraged to address the underlying biophysical and socio-economic causes of land degradation in a participatory, integrated and coordinated manner and promote the active participation of resource owners and land-users. National governments are urged to mobilize resources to support the implementation of NAPs and to have them mainstreamed into national sustainable development planning processes.

The purpose of the assignment was to:

- Complete the preparation of the National Action Plan (NAP) to address Land Degradation and Drought in St. Lucia;
- Develop a Ten (10) Year Strategic Action Plan (SAP) to support the implementation of the NAP;
- Enhance local capacity in Geographic Information Systems (GIS) and GPS application for sustainable land management; and
- Promote public awareness and sensitization on the issues of land degradation in Saint Lucia and on the importance of adapting sustainable land management (SLM) practices.

1.3. Purpose of the Final Report

The Final Report provides:

- (i) a summary of the consultants' activities towards achievement of the objectives; and
- (ii) the outcomes of tasks undertaken in this regard.

The report also includes as annexes:

- (i) Final revision of the UNCCD National Action Plan and the Strategic Action Plan (NAPSAP) for Saint Lucia
- (ii) Report on Capacity Building Training Exercise in Geographic Information Systems (GIS)
- (iii) Public Education and Outreach Strategy to promote public awareness and sensitization on the issues of land degradation and drought in Saint Lucia

Impacting Factors

The following issues were considered the major impinging factors on the consultancy:

- The slight adjustment to the timing of the consultancy, and the rescheduled start date from March 17th, 2008 to April 1st, 2008 and the implications for a potential protracted duration, given an activity schedule spanning nine (9) months, with the completion date of the consulting period falling during the end of year National Day/Christmas holiday celebrations.
- Acknowledgement of the time challenge in conjunction with the current limited resources (esp. human resource) of the DoF and need to establish appropriate mechanisms to draw on other available resources;

- Recognition of the earlier role played by the Adhoc Technical Working Group in conceptualizing the NAP and the need for reactivation of this mechanism to assist the DoF and the Consultants in reviewing the technical aspects of the study;
- Appreciation of the time based context for development of the Strategic Plan for UNCCD-NAP implementation, based on the approval by the Conference of Parties (COP) for results based oriented programming over a ten (10)-year period; recognition however, of the dynamic nature of the initiative, and tacit agreement for the proposed development of the SAP in five (5) year intervals, to enable periodic review, in particular towards the end of the five years, to permit opportunities for updating and harmonizing with the various existing and emerging policies and legal instruments;
- Ensuring that policy makers are adequately sensitized and capable of endorsing the process at the highest level to impact current and future policies that affect natural resource management and rural development;
- Need to capitalize on the potential for leveraging the clout of politicians to influence process at the constituency level, as district representatives, separate from their ministerial portfolios;
- Requirement for technical support of the MALFF Agricultural Information Unit and the Environmental Education Unit of the DoF in certain production aspects of the public awareness component of the assignment;
- Concerns were raised with respect the level of coverage, format, currency and the availability of data at varying scales of capture and the implications for use of Geographic Information Systems (GIS) applications and Geographic Position System (GPS) technology and the implications for the development of a land resource monitoring and evaluation system in accordance with international protocols and procedures for ensuring interoperability;
- Noted that the Consultant's input would be specific to the development of a system to support the identification, classification and mapping of land degradation;
- The need to ensure that the consultative process is well distributed spatially to generate input from stakeholders across the island, for buy-in and ownership of the national Action Plan, and to promote partnerships between public sector, development partners, the private sector, NGOs and community groups for more effective participation in and adoption of SLM.

With regard to the technical aspects of the assignment, the following factors were considered:

- Need for updating of the Situational Analysis with respect to a re-identification of key issues such as food security given the growing global food crisis, and identification of emerging issues and trends to be included in land management, e.g. fire management;
- Recognition of the important linkage between the National Land Policy (NLP) and the NAP/SAP, and the need to ensure that the latter serves as one of the strategic components for the immediate implementation of the NLP;
- Appreciation of the inextricable link between land and water management on the island and the need to create synergies with ongoing initiatives to address water supply challenges through implementation of effective land management approaches; in particular the Integrated Watershed & Coastal Area Management (IWCAM) initiative;
- Formulation of mechanisms for integrating sustainable land management (SLM) initiatives, particularly the United Nations Development Programme (UNDP) and the Global Environment Facility (GEF) have provided funding through a Medium Size Portfolio Project for the following: Capacity Building and Mainstreaming of Sustainable Land Management in Saint Lucia, into the NAP/SAP development process;

The above-mentioned issues highlighted at the inception meetings between the Consultants and the Client's representatives led to the further refinement of the major elements to be addressed by the consultancy as follows:

- The completion of the National Action Plan (NAP) to combat Land Degradation and Drought – UNCCD utilizing a process of national stakeholder analysis and consultation;
- Completion of a 10 year Strategic Action Plan (SA) for implementation of the NAP, elaborated through a process of national stakeholder analysis and consultation;
- The formalization of the NAP/SAP as the official strategic document for Sustainable Land Management (SLM) in St. Lucia;
- The provision of recommendations on the nature of modifications required to the Land Conservation Improvement Act (1992) to support successful implementation the NAP/SAP.
- Enhancement of local capacity of a range of a range of pertinent agencies including Forestry officers, Agriculture Extension officers, Social Transformation officers, Farmers, Community Based Organizations (CBOs) and Non-Governmental Organizations (NGOs), focused on the training of at least seventy (70) persons in the use of Geographic Information Systems (GIS) applications and Geographic Position System (GPS) for land resources assessment and management, including the monitoring and evaluation of SLM in Saint Lucia;
- The development of a criteria for identification, classifying and prioritizing land degradation sites in St. Lucia to facilitate preparation of project concepts at the local and national levels;
- The development of a public sensitisation campaign focusing on the elements of the NAP/SAP to create the means for effective action at all levels in sustainable land management involving five (5) regional workshops, with a total estimated participation of 200-250 persons across the country, to highlight the impacts of land degradation on the environment and socio-economic development of the country; to sensitize the farming, rural and local communities of the need to adapt sustainable land management to ensure land conservation and by extension the country's biodiversity;
- The development of a twenty (20) - thirty (30) minute video/DVD to be used by the consultant in association with the MALFF/DoF to undertake a public outreach campaign
- The development of a user friendly manual identifying SLM approaches and practices.

2.0 SUMMARY OF CONSULTANT'S ACTIVITIES

2.1. Terms of Reference

In the review of the Terms of Reference, issued by the office of the Banana Industry Trust (BIT) in Annex II of the tender dossier dated January, 2008, the Consultancy team recognized that the principal concern of the Client was the development of an integrated and harmonised framework for coordinating national activities geared to

meeting the country's commitments under the United Nation Convention Combat Desertification, for combating land degradation in St Lucia and for mitigating the physical, biological and socio-economic impacts of land degradation and drought.

The consultants' understanding was that the completion of the NAPSAP would formalize the process of SLM in St Lucia, through mainstreaming amongst the relevant agencies, primary and secondary stakeholders, a system of effective management, including the monitoring and evaluation of land resources. Moreover, in the pursuit of these objectives, the systems established will further facilitate the understanding of the socio-economic aspects of land degradation. In addition, the conduct of the exercise capacity building of key stakeholders will facilitate the increased use of GIS and GPS technologies to support the conduct of the various land assessments and implement a systematic monitoring and evaluation process.

In this regard, the team was expected to assist the Client in the implementation of four key project components:

- The finalization of a National Action Plan for Land Degradation and Drought in St. Lucia; and
- The development of a Ten (10) Year Strategic Action Plan to support the implementation of the National Action Plan (NAP) for Land Degradation and Drought.
- Capacity building of a range of pertinent agencies in the use of Geographic Information Systems (GIS) applications and Geographic Position System (GPS) for land resources assessment and management.
- Development of Public Sensitisation Campaign based on the elements of the NAP/SAP.

During the introductory meeting with the Client's representatives, the issue of resource limitations was acknowledged. It was agreed in this regard, that the scale and scope of the consultants input in the development of the Public Sensitisation Campaign would be limited to sensitization and awareness activities related to the outcomes of the consultancy. The MALFF Agricultural Information Unit, (AIU) would thus provide the requisite support with respect to accessing equipment and facilities for the production of the aforementioned video presentation. The Consultants would within the scope of works, endeavour to produce a 20-30 minute video, utilizing equipment, facilities and material including available footage from the MALFF, DoF, and other related agencies, and make recommendations for the promotion of the video within a national public outreach campaign. Responsibility for the promotion of awareness and sensitization would be that of the MALFF – DoF including the Environmental Education Unit, in conjunction with the Agricultural Information Unit.

Additionally, what could be realistically achieved in this consultancy - given the budgetary limitations and the EU procurement restrictions - with regards to the equipment procurement for GIS application and GPS technology is the development of Terms of Reference for procurement of the type of equipment and technology required for land resource assessments and management to support the implementation of the NAP/SAP. Further, the Client would need to ensure that the requisite equipment for training in the GPS applications and GIS technologies are made available for timely implementation of the training component of the assignment.

The fundamental roles of the various institutions, agencies, and community groups, in the land degradation, particularly with respect to the effective participation in the implementation of the NAP/SAP, was recognised as a pre-requisite for ensuring sustainability and the mainstreaming of the NAP/SAP activities into SLM programmes and projects. Hence, a fully participatory approach was adopted by the consultants utilising stakeholder involvement at all stages of the formulating the NAPSAP.

Implementation of the four project components was effected through the detailed tasks outlined in the refined Scope of Works for the consultancy agreed to at the consultancy initiation meeting with the Client's representatives, and presented in the Inception Report, based on identified impacting factors and comprised the following:

1. Conduct of stakeholder analysis to identify stakeholders of the land resource base and to define their roles and responsibilities in the implementation of the NAP/SAP;
2. Stakeholder consultations to promote a participatory approach and community involvement for ensuring mainstreaming into SLM the recommended actions in NAP/SAP;
3. Assembly and review documents and reports including, the major piece of land legislation, the Forest Ordinance and Land Conservation Act, the available base data, and information from stakeholder consultations, on factors influencing land degradation and drought, with a view to identifying gaps and further actions in the development of the NAP/SAP as the driver for SLM in St. Lucia;
4. Compilation and finalisation of National Action Plan (NAP) for Land Degradation and Drought in St. Lucia.
5. Preparation and finalisation of Strategic Action Plan (SAP) to support the implementation of the NAP
6. Formalisation of NAP/SAP as official strategic document for SLM in St. Lucia.
7. Development of Public Sensitisation Campaign Strategy focusing on the importance of the NAP and SAP for sustainable land management in St. Lucia
8. Production of a 20-30 minute video/DVD to be used in the public sensitization campaign;
9. Compilation of a user friendly manual identifying SLM approaches and practices;
10. Formulation of criteria for assessing and evaluating sites for land degradation, based on available data and information.

11. Development of local capacity through training delivery and preparation of tender dossier for procurement of appropriate equipment for increased use of GIS applications and GPS technology in sustainable land management;
12. Develop a framework based on the use of GIS/GPS tools for assessing and monitoring land degradation and drought for SLM;
13. Preparation of Terms of Reference to engage requisite services, works and supplies, including project profiles to implement recommended measures for degraded sites, for funding under EMF.

2.2. Deliverables

The final deliverables of the consultancy were:

- Inception Report;
- Mid-term Interim Report presenting a summary of the consultants' activities and outcomes of tasks undertaken to date;
- Draft and Final National Action Programme and Strategic Action Plan (NAPSAP);
- Public Education and Outreach Strategy and campaign to include public awareness and sensitization through national consultation process and delivery of training workshops, for promotion of SLM;
- A 20- 30 minute video/DVD production to be finalized with used in public awareness campaign;
- Recommendations for development of user-friendly manual identifying SLM approaches and practices incorporated into NAPSAP;
- Capacity building activities for forestry, extension and social transformation field staff, CBOs and NGOs representatives including training delivery to a cadre of 70 persons comprising a cross section of land resources managers in GIS applications and GPS technology; and Terms of Reference to engage requisite services, works and supplies for procurement of equipment to increase the use GIS applications and GPS technology.
- Draft and Final Report comprising a summary of the consultants' activities, and outcomes of tasks, including annexes comprising final revisions of (i) Draft Final National Action Programme and Strategic Action Plan (NAPSAP), (ii) Public Education and Outreach (PEO) Strategy and (iii) Report on GIS training;
- Recommendations incorporated in NAPSAP with respect to (i) a system for monitoring and evaluation of land degradation and drought using

GIS/GPS as assessment tools (ii) nature of modifications required to be made key legislation: Forest Ordinance and Land Conservation Act, and (iii) outline Project Profiles (including TORs to engage requisite services, works and supplies to implement NAP/SAP recommendations re degraded sites) for further funding (e.g. through EMF);

2.3. Client Input

The consultants acknowledge and are deeply grateful for the extensive input of the Client and Project Management Team for the provision of the following support:

- Assistance in the conduct of a stakeholder analysis to identify key stakeholders and their roles and responsibilities in SLM;
- Assistance in facilitating access to all relevant documentation;
- Re-activation of the Adhoc Technical Working Group (ATWG) to serve as a channel for institutional linkage, accessing relevant information, and reviewing recommendations for validity and practicality;
- Technical guidance as required on the specific data inputs and information outputs expected from the assessment and monitoring methodology for land degradation and drought;
- Assistance in the convening of national stakeholder consultations and other meetings with relevant agencies and important officials, whose information are critical to the consultancy;
- Coordination of responses and report reviews among stakeholders for providing feedback to the consultants;
- Liaison with other consulting teams under the SFA 2003 Project, where possible to ensure complementarity in addressing similar or related issues;
- Ensuring the timely disbursement of funds to facilitate smooth implementation of project tasks.

The high level of assistance provided by the Department of Forestry Project Management Team, and the dedicated assistant Ms Tracy Darcy is highly commended.

Further, the availability and willingness of most of the key stakeholders to participate in the consultation process and contribute to the various elements of the assignment mitigated most of the challenges encountered by the team.

However, notable setbacks which resulted in delays in completion of the deliverables were in respect of:

- difficulties in scheduling with staff of the MALFF Agricultural Information Unit for the provision of specific production equipment, support staff and archival material /footage for the finalisation of the video/DVD presentation;
- obtaining timely support of the Client to procure the equipment and facilities to undertake GIS training.

3.0 METHODOLOGY

3.1 Approach

In undertaking the assignment, the Team of Consultants adopted an integrated approach to allow for broad participation and involvement of all stakeholders and beneficiaries in the development of the National Action Programme and Strategic Action Plan (NAPSAP). For this purpose, the team conducted stakeholder analyses to identify key stakeholders and their roles in SLM. Key stakeholders and beneficiaries were consequently invited to participate in consultations, individual interviews and focus group discussions targeting various groups based on the roles identified. In addition, two national consultations, one in the north and the other in the south of the island were conducted for information validation and updating, towards the finalization of the NAP and elaboration of the SAP.

Another principal mode of engagement utilized by the team was the use of the Adhoc Technical Working Group (ATWG). The previously established Adhoc Technical Working Group (ATWG) for development of the NAP was re-activated by the DoF and comprising technical persons and knowledgeable persons within the four broad areas of the assignment, the ATWG was used to assist in:

- sourcing of data and information; reviewing technical content of consultancy outputs and convening of consultation meetings to ensure cohesion and full participation of all main stakeholders;
- identifying the challenges and potential for implementing the various components of the work and monitor and evaluate progress of the assignment, through the process of working group sessions.

Four training workshop sessions were undertaken in different locations around the island. These workshop sessions were also used as an avenue for sensitization and awareness of land degradation and drought issues.

The team worked closely with and under the supervision of the DoF of the Ministry of Agriculture, Lands, Fisheries and Forestry. The team also collaborated with the office of the Banana Industry Trust (BIT), as indicated in the Terms of Reference (TORs) with respect to the administration aspects of the assignment.

The participatory and consultative approach was also utilized as a public sensitization tool to support the various components of the work, with particular focus on the importance of the NAPSAP, as an important link in sustainable land management, and having a bearing on water resources management and environmental protection. The process engendered two-way knowledge transfer and sensitised the various entities and stakeholders, especially the policy makers, public and private sector agencies who are involved in the management and/or impacted by the management of land resources to recognize and assume their fundamental roles in sustainable land management through the implementation of the NAPSAP.

The team further utilized the outcomes and recommendations from this participatory process, to address key issues and trends in the development of

Box 1 Participatory and Consultative Approach

The participatory and consultative approach sought to integrate the input of a broad base of stakeholders to cover as many land management and water related issues. Promoting effective stakeholder involvement provided a method for identifying public concerns and values, developing consensus among affected parties, and producing efficient and effective solutions through an open, inclusive process.

Integrating stakeholder input, capacity development and institutional/organisational strengthening, public education and sensitization, and resource management strategies into a framework for harmonized management of land and water resources was thus facilitated for effective sustainable land management.

the NAPSAP, as well as to identify key public awareness needs and specific capacity building needs.

In order to minimise the effects of “consultation fatigue” on the stakeholders, the consulting team ensured that consultations were designed to be strategic and relevant to achieving the desired outputs. As much work and prior consultations had already been undertaken on the subject matter, the consultants sought to present a compilation of recommendations generated in previous related reports and documents for discussion with relevant stakeholders to identify their relevance and feasibility of incorporating into the plans. The consultants also endeavoured through the consultative process to identify those recommendations that could be readily implemented within the constraints of limited budget, ensuring that these outputs were results oriented and strategic in terms of impact.

3.2 Method

As indicated, the approach for undertaking the work, involved the activities being grouped into four components or major work packages. It must be noted that while the activities were packaged into four separate work breakdown structures, many of the activities were inter-related and were scheduled and implemented accordingly.

The four work packages were coordinated by the different experts on the Team so that the activities were implemented in a timely fashion and outputs delivered on a timely basis. The Team, however, worked closely to ensure the effective coordination, so that the outputs of relevant activities were able to feed into and were informed by each other.

Based on the refined scope of works the methods employed in undertaking the various components of the work were as follows:

Component I: Completion of the National Action Plan (NAP) for the UNCCD

The methods used for completion of the NAP included the updating of the situational analysis through a review of documents and consultations with major stakeholders. Gaps, limitations and priority issues to be addressed in the NAP were identified through this process. The stakeholders involved in the various exercises also recommended a number of strategic interventions and actions for addressing these issues.

Draft elements of the NAP, were validated and confirmed from the outcomes of the consultative process and formed the basis for development of the draft SAP in the next phase.

Component II: Formulation of a Strategic Action Plan (SAP)

The main methods employed for the development of the SAP, included desk review and a consultative process. The desk review involved the conduct of a gap analysis and capacity assessments for managing the impacts of land degradation and drought in Saint Lucia. The activities conducted under this phase were inextricably linked with the activities of Component I, hence the national stakeholder consultations, and wide

ranging discussions, including focus group discussions interviews/meetings undertaken as part of Component I were used to identify key issues and gaps to be addressed under the SAP

The draft SAP was developed taking into account the key priority areas identified from input from the key stakeholders during the consultative process, and issues emanating from the updated situational analysis and NAP, including the measures required for Saint Lucia to fulfill its obligations and the provisions under the UNCCD.

A first draft NAPSAP was presented at a working session to the ATWG for initial feedback. A revised draft incorporating the feedback from the ATWG was then presented to stakeholders at the two National Consultations to allow for further feedback and revision towards the preparation of a final draft for further submission to the Cabinet of Ministers for approval and adoption.

The consultations also served to begin the process of awareness and sensitization on land degradation and drought issues to key stakeholders.

Component III: Development of Public Education Campaign

Methods employed in the process of development of the Public Education and Outreach Strategy involved:

- (i) The conduct of an orientation Workshop for public/environmental education specialist staff of the MALFF in the relevant departments/units including Agricultural Communications Unit; Environmental Education Unit; Documentation Centre; Forestry Department, to develop outputs of the PA campaign in collaboration with and utilising technical support from the relevant technical units in the Ministry of Agriculture. The main purpose of the workshop was to put the tasks related to the assignment within the context of the existing and future work of the various units of the Ministry, with specific objectives as follows:
 - To present the main requirements and tasks of the assignment
 - To discuss and clarify the key issues for Public awareness
 - To assess the production capacity of the Units
 - To develop a plan for Production of the P.A outputs.
- (ii) Formulation of a draft PEO strategy, through the process of development of the SAP, was informed by the issues and actions emanating from both Components 1 and 2. The Draft PEO Strategy was presented to stakeholders at the two national consultations for input towards finalization of strategy and outlining specifics of awareness programmes.
- (iii) Production of outputs for the public education campaign included the production of the script for a 20-30 minutes Video/DVD presentation. However, due to problems associated with timely procurement of the critical support in terms of provision of production equipment and facilities, available archival material/footage, from the Client, in particular the Ministry of Agriculture's Communications Unit, where the capacity for this type of work resides, the video output still needs to be finalized utilising that support as soon as it is available.

As the assignment progressed the consulting team through discussions with the Client determined that the development of the user-friendly

manual identifying SLM approaches and practices, which involved inter alia, the documentation of best practice was too onerous a process to be completed within the consultancy timeframe and that the best approach was that the consultants provide a framework for the development of the manual with recommendations on mechanisms for elaboration over time.

- (iv) In the interest of time and for optimal use of available resources, the national consultations and GIS training workshops were used to progress the public awareness and sensitization activities under this component of the work as per the requirements of the assignment.

Component IV: Capacity Building for Assessing and Monitoring Land Degradation and Drought

The following methods and approach were utilized during this phase of the work:

- (i) Conduct of stakeholder analysis and review of existing systems and recommendations emanating from the participatory consultative process, to determine target groups and their specific training and other capacity needs, with particular focus on equipment needs.
- (ii) Development of training modules for training utilizing available systems and data; data and methodologies for data generation and management developed under the complementary EU sponsored SFA 2003 project, Riverbank Assessment was used as baseline. Guidelines and operational procedures were further adapted to fit the unique characteristics of the environment in which the GIS information systems is to be used taking into account, in particular, the capacities and skills of the stakeholders.
- (iii) Delivery of training and sensitization workshops to introduce the GIS applications and GPS technology for use as tools in the assessment and monitoring of land degradation and drought and to highlight the feasibility of the system to support sustainable livelihoods to potential users. To this end training was delivered to target groups ranging from resource users to decision makers including :
 - a. Community development officers
 - b. Agricultural officers
 - c. Forestry officers
 - d. Disaster committees
 - e. Town and village councils
 - f. Local development committees
 - g. Water catchment and environmental groups
 - h. Development Foundations and
 - i. Youth/students

The consultant through the consultative process identified appropriate equipment and software requirements to support future application of GIS and GPS in monitoring and assessment of land degradation and drought for SLM, to prepare a tender dossier for procurement of same.

While it was anticipated that the training in the application of GIS and GPS technology would have had strong technical support from the GIS section in the DoF, and the Ministry of Physical Development, where the requisite equipment and materials, as well as the national GIS, topographic and national cadastre reside, support in this regard was not available in a timely manner. The GIS expert within the

consulting team thus had to procure the requisite technical support services, in this regard, to ensure timely delivery of the training component.

The initial work programme anticipated that the Consultant would have been able to assist in the development of guidelines and criteria to be used for preliminary assessment and evaluation to determine sites demonstrating the ill effects of land degradation and drought. As the assignment evolved it was recognized that since these criteria needed to be chosen to fit the unique characteristics of the environment in which proposed projects are to be implemented, taking into account, in particular, the resources and capacities and skills of the stakeholders, the team was of the view that sites were better identified through the recommendations proposed under the NAPSAP, which would provide more in-depth field assessment for further development of projects for implementation of remedial measures.

Project Management

In order to ensure that the outputs were delivered in a timely basis, the work was coordinated by the different experts in the Team. The team however, worked closely together and in conjunction with the Team leader and the Client representatives in the conduct of the various tasks. The Team endeavoured to ensure that, where possible, consultations, meetings and discussions were held jointly; and the outputs of all activities were aligned with each another.

The draft outputs of each of the four components of the assignment were subject to a process of national consultations, the objective being to validate the findings of the work undertaken and to seek endorsement of the elements and recommendations. In this regard, two national consultations were held towards the latter part of the consulting assignment to present final drafts of the deliverables including, the National Action Programme and Strategy and Action Plan (NAPSAP), and the Public Education and Outreach Strategy. Feedback from the consultations was incorporated into the outputs which are submitted as final deliverables.

Draft and Final Report comprising a summary of the consultants' activities, and outcomes of tasks, including annexes comprising final revisions of (i) Draft Final National Action Programme and Strategic Action Plan (NAPSAP), (ii) Public Education and Outreach (PEO) Strategy and (iii) Report on GIS training, submitted in electronic copy in MS word and hard copy.

4.0 OUTCOMES/OUTPUTS

Summaries of activities and outputs for the four main components of the consultancy are outlined in the sections below.

4.1 Completion of the National Action Plan (NAP) for the UNCCD

Table 1. Summary of Activities and Outputs for Completion of UNCCD National Action Plan (NAP)

TASK/ACTIVITY	OUTCOMES	OUTPUTS
<ul style="list-style-type: none"> • Desk Review 	<ul style="list-style-type: none"> • Stakeholder analysis for identification of key institutions, organizations and individuals to be consulted completed • Bibliographic compilation and review of relevant documents • Compilation of a summary of issues 	<ul style="list-style-type: none"> • Stakeholder Analysis • List of institutions, organizations and individuals to be consulted • Bibliography • Summary matrix on issues to be further addressed and validated through consultative process
Stakeholder Consultations/ <ul style="list-style-type: none"> • Focus Group Meetings/Discussions • National Consultations 	<ul style="list-style-type: none"> • Process for public/stakeholder involvement, including specific methods for consultative process established • Stakeholder consultations – working sessions with ATWG, focus group discussions and 2 national consultations (in north and south of island) convened • Working templates and other relevant formats used to guide consultations 	<ul style="list-style-type: none"> • Established method for consultative process and consultation schedule • Feedback from consultations held including working sessions with ATWG, focus group discussions and national consultations, incorporated into deliverables
<ul style="list-style-type: none"> • Prepare Draft Updated NAP 	<ul style="list-style-type: none"> • Situational analysis updated and gaps and limitations of to be addressed in NAP identified • Analysis and interpretation completed • Revised and Updating of Draft NAP prepared and submitted to Client 	<ul style="list-style-type: none"> • Revised situational analysis • Summary matrix of gaps and limitations • Updated Draft NAP presented to stakeholders for validation and feedback
Preparation of Final Draft NAPSAP	<ul style="list-style-type: none"> • Stakeholders consulted on updated draft NAP • Consultation outcomes used to inform revisions of NAP • Final Draft of NAP prepared and submitted to Client 	<ul style="list-style-type: none"> • Stakeholders consulted through 2 National Consultations • Consultation outcomes included in final revision of NAP • Final Draft of NAP submitted to Client
Recommendations on (i) a system for monitoring and evaluation of land	<ul style="list-style-type: none"> • Recommendations incorporated in NAPSAP with respect to (i) a system for 	<ul style="list-style-type: none"> • Recommendations on mechanisms for mainstreaming incorporated

degradation and drought using GIS/GPS as assessment tools (ii) nature of modifications required to be made key legislation: Forest Ordinance and Land Conservation Act, etc.	monitoring and evaluation of land degradation and drought using GIS/GPS as assessment tools (ii) nature of modifications required to be made key legislation: Forest Ordinance and Land Conservation Act, and (iii) outline Project Profiles (including TORs to engage requisite services, works and supplies to implement NAPSAP recommendations re degraded sites) into actions incorporated into Final Draft NAPSAP	within NAPSAP
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4.2 Formulation of a Strategic Action Plan (SAP)

Table 2. Summary of Activities and Outputs for Formulation of Strategic Action Plan (SAP) Component

TASK/ACTIVITY	OUTCOMES	OUTPUTS
Desk Review Stakeholder Consultations	<ul style="list-style-type: none"> • Desk review conducted • Stakeholders consulted – <u>Use of consultative process for component 1</u> - for additional information gathering, re gaps and issues to be addressed in SAP • Outcomes of consultations used to inform drafting of SAP 	<ul style="list-style-type: none"> • Summary matrix on issues and gaps to be further addressed and validated through consultative process • Outcomes of consultations used to identify priority areas for SAP.
Drafting of SAP	<ul style="list-style-type: none"> • Priority areas identified in consultative process used to develop first draft of SAP • Draft SAP prepared and circulated to stakeholders 	<ul style="list-style-type: none"> • Draft SAP presented to stakeholders for validation and verification
Preparation of Final Draft NAPSAP National consultations	<ul style="list-style-type: none"> • Stakeholders consulted on draft NAPSAP through a process of national consultations • Outcomes of national consultations used to inform revisions of Draft NAPSAP • Final Draft NAPSAP prepared and submitted to Client 	<ul style="list-style-type: none"> • Stakeholders consulted through 2 National Consultations • Consultation outcomes included in final revision of NAPSAP • Final Draft NAPSAP submitted to Client

4.3 Development of Public Education and Outreach Strategy

Table 3. Summary of Activities and Outputs of Development of Public Education and Outreach Strategy Component

TASK/ACTIVITY	OUTCOMES	OUTPUTS
Develop Public Education and Outreach Strategy in conjunction with SAP	<ul style="list-style-type: none"> Assessment of the key issues for public awareness undertaken Stakeholders consulted for input into assessment using same processes for Component 1 and 2, as well as conduct of orientation workshop for public/ environmental education specialist staff of MALFF 	<ul style="list-style-type: none"> Draft PEO Strategy addressing key issues for public awareness identified through consultative process presented to stakeholders Stakeholders consulted through 2 National Consultations Consultation outcomes included in final revision of PEO Strategy Final Draft PEO Strategy submitted to Client
Production of Video/DVD to be used in public awareness campaign	<ul style="list-style-type: none"> Production of script for video/DVD presentation for use in public awareness campaign Collaboration with Client for provision of production equipment and facilities, available archival material/footage for final production of video/DVD presentation 	<ul style="list-style-type: none"> Script for video/DVD presentation Production of video/DVD awaiting input from Client with respect to special production equipment and archival footage for finalisation
Assist in conduct of public awareness sensitization: <ul style="list-style-type: none"> Consultations/workshops for sensitisation and awareness on NAPSAP and SLM 	<ul style="list-style-type: none"> National consultations and GIS training workshops used for sensitization and awareness 	<ul style="list-style-type: none"> Consultations for sensitisation and awareness of stakeholders on NAPSAP and SLM
Development of User-friendly SLM Manual	<ul style="list-style-type: none"> Approach for the production of user-friendly manual identifying SLM approaches and practices revisited by Client and consultants towards formulation of framework for documentation of best practice and recommendations re guidelines for further elaboration 	<ul style="list-style-type: none"> Proposed mechanisms for compilation and future elaboration of SLM manual provided within NAPSAP framework

4.4 Capacity Building for Assessing and Monitoring Land Degradation and Drought

Table 4. Summary of Activities and Outputs of Capacity Building Component

TASK/ACTIVITY	OUTCOMES	OUTPUTS
Conduct stakeholder capacity needs assessment for GIS and GPS application for SLM	<ul style="list-style-type: none"> • Technical assessment of capacities of key agencies undertaken based on pre-selected criteria² • Stakeholders consulted for input into assessment to determine status of data structures and software and quality and availability of data 	<ul style="list-style-type: none"> • Summary of capacity needs (training and technical requirements) of key agencies and specific capacity building recommendations for developing GIS capability for SLM presented to stakeholders • Outcomes used to develop training workshops and tender dossier
Conduct Training Workshops	<ul style="list-style-type: none"> • Training modules and training guidelines developed based on outcomes of capacity needs assessment • Training and sensitisation workshops executed • Procedures and guidelines for GIS and GPS applications in SLM prepared 	<ul style="list-style-type: none"> • Training delivery to cadre of 70 persons comprising a cross section of land resources managers and users in GIS and GPS technology to acquire knowledge and skills which can be applied in SLM • Procedures and guidelines for GIS and GPS applications in SLM
Preparation and development of tender dossier for equipment procurement for GIS and GPS application	<ul style="list-style-type: none"> • Stakeholders consulted to determine quality and data availability and articulate concept for application of GIS and GPS in SLM re systems to be employed and procedures for information exchange, etc. • Data structures and software identified • Tender dossier for equipment procurement developed 	<ul style="list-style-type: none"> • Tender Dossier for equipment procurement to support use of GIS and GPS applications in SLM
Development of guidelines and criteria to be used for preliminary assessment and evaluation to determine sites demonstrating the ill effects of land degradation and drought	<ul style="list-style-type: none"> • Approach for development of guidelines and criteria revisited by Client and consultants towards formulation of mechanisms for same; recommendations for site evaluation and 	<ul style="list-style-type: none"> • Mechanisms for site assessment and evaluation for effective decision making proposed within NAPSAP

² Involved the use of a GIS Baseline Form – Areas for Assessment of Agencies - included as Annex1 in the Report on GIS Training

TASK/ACTIVITY	OUTCOMES	OUTPUTS
	assessment provided within the NAPSAP recommendations, which are designed to facilitate more in-depth field assessment for further development of projects for implementation of remedial measures	

4.5 Project Management

Table 5 Summary of Activities and Outputs related to project management component of consultancy

TASK/ACTIVITY	OUTCOMES	OUTPUTS
Preparation and submission of Inception Report	<ul style="list-style-type: none"> • Consultancy initiation meeting with Client and consultants 	<ul style="list-style-type: none"> • Well initiated consultancy • Inception Report with revised Work Plan
Coordination - Stakeholder Consultations	<ul style="list-style-type: none"> • <u>Consultations including 2 National consultations (north and south of island)</u> convened_ for information gathering and validation of the various issues, gaps, etc. and for presentation of findings and recommendations to stakeholders 	<ul style="list-style-type: none"> • Outcomes of consultations incorporated into final deliverables
Assist in the conduct of public awareness building and sensitisation	<ul style="list-style-type: none"> • Client support provided in public awareness building and sensitization • Participated in media broadcasts 	<ul style="list-style-type: none"> • Public awareness building and sensitization outputs • Media broadcasts undertaken on project • Public awareness and sensitization undertaken through national consultations and training workshops
Preparation and submission of Quarterly Interim Reports	<ul style="list-style-type: none"> • Prepared and submitted a Mid-term Interim Report focused on preliminary findings and status of final deliverables, as agreed with the Client as an alternative to quarterly progress reports in order to optimize time and effort, particularly with respect to stakeholder participation during implementation 	<ul style="list-style-type: none"> • Mid-term Interim Report focused on preliminary findings and status of final deliverables - Report submitted to Client, providing draft final deliverables - NAP and SAP;
Preparation and submission of Final Report	<ul style="list-style-type: none"> • Findings and recommendations on various components of 	<ul style="list-style-type: none"> • Final Report comprising a summary of the consultants' activities, and

Final Report – Consultancy to Develop UNCCD NAPSAP for Saint Lucia

	<p>consultancy presented to stakeholders through national consultations</p> <ul style="list-style-type: none">• Prepared and submitted draft Final Report on completion of assignment• Report finalised based on feedback• Final Report with revisions submitted to Client	<p>outcomes of tasks, and the main report including Annexes comprising final revisions of (i) Draft Final National Action Programme and Strategic Action Plan (NAPSAP), (ii) Public Education and Outreach (PEO) Strategy and (iii) Report on GIS training;</p> <ul style="list-style-type: none">• Reports submitted in electronic copy in MS word and hard copy.
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For ease of reference each of the final deliverables, namely, (i) Draft Final National Action Programme and Strategic Action Plan (NAPSAP), (ii) Public Education and Outreach (PEO) Strategy and (iii) Report on GIS training, are presented as separate annexes to this final report.

CONCLUSION

The consultants have endeavoured to produce the type of outputs that are results oriented and strategic in terms of impact. It is their hope, therefore that the Client's expectations have been met and that the assignment has provided the necessary mechanisms and approaches to promote a coordinated and integrated approach to the management of the country's land resources through the implementation of the UNCCD National Action Programme and Strategic Action Plan (NAPSAP). Activities towards implementing the NAPSAP will focus on the establishment of a harmonised national policy and institutional framework supported by comprehensive legislation, for promoting sustainable land management.

The strategies and mechanisms proposed in the NAPSAP will strengthen collaboration among agencies and mainstreaming of sustainable land management in national development. The development of requisite capacity at all levels, systemic, institutional and individual will ensure that the various entities are capable of assuming their individual roles and responsibilities for continuing implementation and administering and monitoring of the NAPSAP.

The singular risk is that some of the outputs of this consultancy may be delayed in implementation and as a result lose validity. A major assumption of the consultancy was that implementation of proposed projects under the NAPSAP would be funded under the Environmental Management Fund (EMF). The risk in this regard is that EMF funding may no longer be available to support implementation of the outputs of this consultancy. The Government of Saint Lucia and the relevant agencies must therefore, be committed to and must be able to source the necessary funding for implementing the recommendations.

APPENDICES

Appendix 1. Terms of Reference

ANNEX II: TERMS OF REFERENCE

- 1. BACKGROUND INFORMATION**
 - 1.1. Beneficiary country**
 - 1.2. Contracting Authority**
 - 1.3. Relevant country background**
 - 1.4. Current state of affairs in the relevant sector**
 - 1.5. Related programmes and other donor activities:**

- 2. CONTRACT PURPOSE & EXPECTED RESULTS**
 - 2.1. Overall objective**
 - 2.2. Purpose**
 - 2.3. Results to be achieved by the Consultant**

- 3. ASSUMPTIONS & RISKS**
 - 3.1. Assumptions underlying the project intervention**
 - 3.2. Risks**

- 4. SCOPE OF THE WORK**
 - 4.1. General**
 - 4.2. Specific activities**
 - 4.3. Project management**

- 5. LOGISTICS AND TIMING**
 - 5.1. Location**
 - 5.2. Commencement date & Period of execution**

- 6. REQUIREMENTS**
 - 6.1. Personnel**
 - 6.2. Office accommodation**
 - 6.3. Facilities to be provided by the Consultant**
 - 6.4. Equipment**
 - 6.5. Incidental expenditure**
 - 6.6. Expenditure verification**

- 7. REPORTS**
 - 7.1. Reporting requirements**
 - 7.2. Submission & approval of progress reports**

- 8. MONITORING AND EVALUATION**
 - 8.1. Definition of indicators**
 - 8.2. Special requirements**

NATIONAL ACTION PLAN TO COMBAT DESERTIFICATION AND DROUGHT

1. BACKGROUND INFORMATION

1.1 Beneficiary country

Saint Lucia

1.2 Contracting Authority

National Authorizing Officer representing the Government of Saint Lucia

1.2.1 Grant Beneficiary

Banana Industry Trust

1.3 Relevant country background

Saint Lucia is located at 140 north latitude and 610 west longitude. It is situated just south of the mid-point of the Antillean Archipelago of the Eastern Caribbean. The island is approximately 32 km south of Martinique, and 40 km north of St. Vincent. Surface area is 616 km², with maximum length and width of 43 and 23 km respectively.

The "modified" tropical climate of Saint Lucia is highly affected by oceanic influences. It has a mean annual temperature of 21 to 27 °C which drops with increasing elevation and has little seasonal or diurnal variation. The highest point on the island (950 m ASL) is normally about 18 °C (Saint Lucia Environmental Profile, 1991). The rainfall pattern shows both topographic and seasonal variations. The highest average annual rainfall of approximately 4000 mm falls on the mountainous south-central part of the Island, and the lowest rainfall of about 1124 mm occur at the lower coastal regions, indicating its orographic origin. Mid-December to May is the period of lowest rainfall and June to December, rainfall is significantly higher

The primary use of land in Saint Lucia is agriculture, and it follows that the primary cause of land degradation is unsustainable agriculture. Recent studies done on desertification in Saint Lucia have reflected a growing concern over the relationship between sustainable land management and desertification. Two of the most recent initiatives of the Ministry of Agriculture Forestry and Fisheries (MAFF) to address desertification in Saint Lucia include a "Thematic Assessment of the implementation of the UNCCD in Saint Lucia" and a Medium Sized Project proposal aimed at enhancing sustainable land management in Saint Lucia through the implementation of a National Land Policy. This Social and economic impact study is the third. All of these efforts have been financed by the United Nation Development Programme (UNDP) under the Global Environment Facility (GEF), and the Government of Saint Lucia.

Agriculture has traditionally been the mainstay of the economy and is still the prime user of land and confirms that a large percentage of rural people in Saint Lucia have depended upon agriculture for their livelihood. The ability of the land to support agriculture has been impacted by various land use practices, settlement patterns and other factors that affect the integrity and yield of the land. It is estimated that soil loss is as much as 25 to 63 tons/ha/yr for some of the larger watershed and approximately 300,000 tons annually due to banana cultivation alone; for every ton of bananas produced, some 2 – 3 tons of soil is lost. Almost half of this erosion is due to cultivation on steep slopes.

In St. Lucia, there is mounting pressure on the natural environment particularly on the land resource base. The demand for lands for agricultural expansion, industrial development, housing, hotel development and, charcoal production and firewood has been driven by a constant increase in the country's population and migration trends. The effects of land degradation have been reflected in the apparent progressive dwindling, over the last decade, of the island's water resources generated from thirty-seven (37) major watershed areas. This has been largely attributed to the adverse effects of agriculture and industry, and human settlements manifested in the form of degrading lands in key watersheds. During the period 1977 to 1989 the area under forest had declined at a rate of 1.5% annually as lands were converted to agriculture due to a then expanding banana industry (Source: 10-Year Forest Management Plan, 1992 - 2002).

One hundred and fifty years of low technology agriculture - slash and burn, down slope tilling, absence of contouring and excessive land clearing – on a young volcanic island - has left indelible scars on the landscape, and has negatively influenced the lives of thousands of inhabitants. Efforts to reduce the negative impact, protect water sheds, rescue endangered biodiversity while supporting traditional livelihood patterns have been frustrated by a weak legislative system, lack of a national land policy and land zoning and planning, limited economic incentives, and a general lack of capacity at the institutional, systemic and individual level.

1.4 Current state of affairs in the relevant sector

Government's strategic priorities as stated in the performance plan.

The United Nations Convention to Combat Desertification and Drought (UNCCD), (referred to as Land Degradation in Small Island Developing States (SIDS) has set the platform for St. Lucia to develop a National Action Plan (NAP) to combat Land Degradation and Drought. This process started two years ago and is presently at the stage of a second draft NAP, which needs to be completed by December 2007 (the deadline set by the Secretariat of the Convention). However, to make the NAP a working document and adaptable to deal with the critical land problems and issues in country, there is also a need to develop a Strategic Action Plan (SAP) to support the implementation of NAP. The NAP/SAP will serve as one of the fundamental components of the National Land Policy which will promote the adoption of Sustainable Land Management (SLM) in St. Lucia.

Currently, there is no national or strategic action plan to guide the sustainable management of the land resource base in St Lucia. Apart from an out dated Forest Management Plan (1992 – 2002), and the Forest, Soil and Water conservation Ordinance focused specifically on the management of forest reserve lands and Crown Lands, there are no other documents outlining any principles of land management. However every year, hundreds of tons of soil are lost as a result of heavy downpours of rain. Although, the Land Conservation Improvement Act was approved in 1992, to-date it cannot be implemented because it lacks supportive regulations.

In the absence of a supportive legislative and regulatory framework, there is no systematic monitoring and evaluation of the land resource base; there is very little

data collection on soil loss and land degradation, and as such, baseline data and information required for decision making is lacking,. It is only after a major disaster, for example Tropical Storm Debbie (10th September 1994) will some informal estimation of soil loss, number landslides and impact of agricultural sector and other sectors is carried out.

Some of the specific challenges that arise out of the lack of an NAP and SAP, or other guideline to support land management and monitoring include:

Inability to estimate or predict soil loss if and when soil erosion and land slippage occurs;

Insufficient strategic land use planning within the Ministry of Agriculture, Forestry and Fisheries, and the Sustainable Development and Environment Unit; land resource planning is conducted mainly for short term purposes. land planning is too localized and fragmented leading to land use conflicts;

Insufficient funds available for coordinating and conducting capacity building activities and the purchase of important equipment and software packages. Such capacity building exercises are essential for developing the human resources needed to conduct the various land assessments and implement a systematic monitoring and evaluation process;

Lack of a public education and outreach strategy on land resource management hence the public is not sufficiently sensitized to the negative impacts to society as a whole.

The completion of the NAP and the SAP will formalize the process of SLM in St Lucia. Through mainstreaming amongst the relevant agencies, primary and secondary stakeholders, a system of effective monitoring and evaluation will be introduced, to support the identification, classification and mapping of land degradation; socio-economic impacts will be easily facilitated to further understand the impact on the agricultural sector and on individual farms and farming communities. On a broader scale, the impact of land degradation and drought on agro-ecosystems can also be facilitated and presented in a monetary form.

The Actions to be pursued within the NAP are consistent with GOSL Medium Term Economic Strategy, the National Environment Policy and National Environmental Strategy (NEPs and NEMs), the National Biodiversity Strategy and Action Plan (NBSAP) and the Policies and Strategic Plans of key stakeholder public sector agencies.

The island's most important natural resource is land. In recognition of this, the GOSL, through an inter-sectoral National Land Policy Committee (NLPC) has for the past five (5) years been working on the development of a National Land Policy. This Policy, which is nearing completion, provides the overall context for land development and management issues. The dynamic nature of such an initiative is well recognized and opportunities for updating and harmonizing the various policies and legal instruments exist.

The linkage between land and water management in St. Lucia cannot be overlooked, and as such, this proposal is linked to and complements ongoing initiatives to address water supply challenges through implementation of effective land management approaches. These include, water sector reform initiatives

embodied within the National Water Policy (approved in 2006) and the Water and Sewerage Act of 2005, an Agricultural Policy and Strategic Plan, and a Coastal Zone Management Policy.

1.5 Related programmes and other donor activities:

The United Nations Development Programme (UNDP) and the Global Environment Facility (GEF) have provided funding through a Medium Size Portfolio Project for the following: Capacity Building and Mainstreaming of Sustainable Land Management in Saint Lucia. This project which is a two and half year project will enhance the process of implementing the NAP/SAP, through strengthening capacity at the individual, institution and society level and providing for mainstreaming of SLM.

NAP/SAP will also compliment the Integrated Watershed & Coastal Area Management (IWCAM) initiative currently under way in Saint Lucia, which serves as one of the project's demonstration sites. It is one of the Caribbean Small Island Developing States Project, funded by United Nations Environment Programme.

2. OBJECTIVE, PURPOSE & EXPECTED RESULTS

2.1 Overall objective

To contribute to the development of an integrated framework for combating land degradation in St Lucia and for mitigating the physical, biological and socio-economic impacts of land degradation and drought.

2.2 Purpose

The purposes of this contract are as follows:

To complete and finalize the preparation of the National Action Plan for Land Degradation and Drought in St. Lucia; and

To develop a Ten (10) Year Strategic Action Plan (SAP) to support the implementation of the National Action Plan (NAP) for Land Degradation and Drought.

To enhance local capacity in Geographic Information Systems (GIS) and GPS application in a sustainable land management context.

To promote increase public awareness and sensitization to the issues of land degradation in Saint Lucia and the importance of adapting SLM practices.

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2.3 Results to be achieved by the Consultant

The key output (s) of this project shall include inter alia:

A National Action Plan (NAP) for land degradation and drought completed formalized and adopted by the Cabinet of Ministers as the official strategic document for SLM in St. Lucia;

A Ten (10) year Strategic Action Plan to support the implementation of the NAP completed;

Approximately 70 persons trained in GIS and GPS technology and the use and importance of the technologies/applications in classifying land degradation;

A plan established which classifies and maps priority land degradation sites and contains recommendations to guide the country towards SLM and by extension the value of land/soil which is fundamental and important to Saint Lucians.

A cadre of Seventy persons comprising Government technical staff, Non-Government Organization and Community Based Organization trained in basic GIS and GPS application in natural resources assessment and management;

A completed matrix showing all stakeholders involved in land resource management, indicating the role and responsibilities for both primary and secondary stakeholder, as it relates to SLM in St. Lucia;

A twenty - thirty minute Video/DVD presentation produced and used to promote awareness and sensitization among the general public and civil society;

A manual on SLM practices and approaches completed and available for dissemination;

The tender dossier to procure equipment acquiring a plotter and computer hardware and related GIS software for mapping;

A public outreach campaign to inform farming, rural and local communities on the issues of land degradation and SLM, and the need to conserve agro-biodiversity.

3. ASSUMPTIONS & RISKS

3.1 Assumptions underlying the project intervention

The main assumption is that project financing will be disbursed on time;

Cabinet approval and endorsement secured for the implementation of the NAP.

Willingness of stakeholders to participate in the participatory, planning and development process of both the NAP and SAP;

3.2 Risks

The above stated assumptions are not met.

4. SCOPE OF THE WORK

4.1 General

4.1.1 Project description

The NAP is designed to focus attention on sustainable land management (SLM) and provide a harmonized framework for coordination of national activities geared to meeting the country's commitments under pertinent international agreements, particularly the United Nation Convention Combat Desertification, United Nations Framework Convention on Climate Change, the Convention on Biological Diversity, the Millennium Development Goals, Agenda 21 and the Barbados Plan of Action for Small Developing States (1994).

In order to make the NAP a working document and adaptable to deal with the critical land problems and issues in country, a Strategic Action Plan (SAP) will be developed to support the implementation of NAP. The NAP/SAP will serve as one of the fundamental components of the National Land Policy which will promote the adoption of Sustainable Land Management (SLM) in St. Lucia.

Given that the National Land Policy (NLP) is merely policy, principles, guidelines but is still lacking a strategic plan, the NAP/SAP serves as one of the strategic components for the immediate implementation of NLP.

This strategic component (NAP/SAP) will enforce Sustainable Land Management (SLM) practices. This component is appropriate and relevant to the new NLP because it focuses on behavioural change in relation to the use of the land

resources, Capacity development and institutional/organisational strengthening is needed at all levels for the implementation of SLM, as an approach for the protection and management of land resources and risk reduction and early warning systems.

Building local capacity in Geographic Information Systems (GIS) and Geographic Positioning Systems (GPS) in the use and application in a sustainable land management is critical. In this case it is expected that a cadre of individuals, private and public, will be trained in the use and application of the above mentioned tools for assessing and monitoring land degradations.

The 'participatory process' or public support is considered in the NAP to be playing a fundamental role in addressing the problems of land degradation. Therefore, public education and advocacy will create the means for effective action at all levels in sustainable land management. Gender and issues related to eco-efficiency and the role of the private sector will be taken into consideration in the development of the education and advocacy component to facilitate more effective participation and adoption of sustainable land management.

4.1.2 Geographical Area to be covered

The project will be implemented island wide.

4.1.3 Target Groups

This project is critical and of national significance and will be implemented island wide due to the need for broad stakeholder participation to cover as many land management and water related issues. As such, in general it should target Key sectors & stakeholders involved including:

Forestry Sector

Water agency and companies (including WASCO)

Wildlife

Agriculture

Farming Communities

Private tour owners/sites

CBOs

NGOs

Sustainable Development/Environment Agency

Social Transformation Agency

Fisheries sector

Youth in agriculture

Rastafari organization

CARDI

CEHI

Sir Arthur Lewis Community College

Banana Companies

Water-catchment groups.

Major Activities

Phase One; This involves the completion of the NAP through the hiring of a consultant or consulting firm, The consultant will be responsible for completing and the finalizing the NAP document (to include the acceptance by Cabinet of Ministers)

Phase Two: development of a Strategic Action Plan to support the implementation of the NAP. The works to be conducted under this phase are inextricably linked to the NAP completion process the same consulting firm will be retained for this second phase. The broad outline of activities to be undertaken shall include;

(i). A Public Outreach Campaign; five regional workshops are to be held, estimated participation of 200 – 250 persons;

(ii). Two national consultations convened - anticipated participation approximately 130 persons;

(iii) Meeting with the Private Sector (opportunity to sensitize the PS on/of investment opportunities for them as it relates to the management of the land resource base under UNCCD);

(iv) Wide ranging discussions academic professionals; banana companies and farmers; Permanent Secretaries and Heads Departments of select ministries, Ministers of Government;

(v) Presentation of a First Draft of the Strategic Action Plan; Document to be reviewed by Review Committee.

(v) Second Draft presented, this is submitted to the Permanent Secretary and Minister in the Ministry responsible for UNCCD implementation for review and presentation to the Cabinet of Ministers.

(vi) Return by Cabinet with comments and editorial points.

(vii) This phase also includes capacity building activities for forestry, extension and social transformation field staff, along with selected CBOs and NGOs representatives.

(viii) Classification of land degraded sites and selection of sites for full size project development.

The specific activities to be undertaken shall include:

The finalization and the preparation of a National Action Plan for Land Degradation and Drought in St. Lucia; and

The development of a Ten (10) Year Strategic Action Plan to support the implementation of the National Action Plan (NAP) for Land Degradation and Drought.

The formalization of the NAP as the official strategic document for Sustainable Land Management (SLM) in St. Lucia;

The development and implementation of a public sensitization campaign focusing on the importance of the NAP and the Strategic Action Plan for Sustainable Land Management in St. Lucia;

The development of a user friendly manual identifying SLM approaches and practices;

The development of a criteria for classifying and prioritizing land degradation sites in St. Lucia;

The identification of project areas/sites and project concepts both at the local and national levels;

A stakeholder analysis to identify stakeholders of the land resource base, and to define the roles and responsibilities of these stakeholders in the implementation of the NAP and the 10 Year Strategic Action Plan;

The review of the Land Conservation Improvement Act (1992) to enable the development of regulations to support the act; this act and regulations are very important, as a matter of fact, this is one of the supporting mechanisms for the successful implementation the Strategy Plan.

The development of a twenty (20) to thirty (30) minute video/DVD which will be used to undertake an aggressive public awareness campaign throughout the country, to highlight the impacts of land degradation on the environment and socio-economic development of the country; to sensitize the farming, rural and local communities of the need to adapt sustainable land management to ensure land conservation and by extension the country's biodiversity;

The training of at least seventy (70) persons from a range of pertinent agencies including Forestry officers, Agriculture Extension officers, Social Transformation officers, Farmers, Community Based Organizations (CBOs) and Non-Governmental Organizations (NGOs) in the use of Geographic Information Systems (GIS) applications and Geographic Position System (GPS) for land and forest resources assessment and management.

Project management

4.3.1 Responsible body

The programme will be under the overall responsibility of the Office of the National Authorizing Officer (NAO) in the Ministry of Economic Affairs, Economic Planning and National Development and the Grant beneficiary.

4.3.2 Management structure

The consultancy services contract shall be between the Consultant and the Contracting Authority on behalf of the Forestry Department [the Client].

The Consultant shall work under and report to the Client concerning all aspects of the professional services to be rendered..

Changes in the TOR may be made only according to needs and be subject to mutual written agreement among the Client, the Consultant and the NAO.

The Client will provide the Consultant with information in its possession concerning the NAP/SAP/GIS including past reports, data and existing monitoring systems. The Client commits to cooperate with the Consultant and facilitate him/her in the completion of this assignment to the greatest extent possible.

The Client shall provide the Consultant with suitable office accommodation, complete with telephone with access to an international line and internet access. The Client will also make fax and photocopying facilities available to the Consultant. The Consultant will provide his/her own computing and printing requirements.

5. LOGISTICS AND TIMING

5.1 Location

The office will be based in Castries Saint Lucia. The team will be required to operate throughout the country.

Final Report – Consultancy to Develop UNCCD NAPSAP for Saint Lucia

5.2 Commencement date & Period of execution

The intended commencement date is 14 January 2008 and the period of execution of the contract will be nine (9) months from this date. Further additional services under this contract are not anticipated.

Deliverables	Jan 2008	Feb	Mar	April	May	June	July	Aug	Sep
Completion of the National Action Plan (NAP) to Combat Land Degradation and Drought – UNCCD									
Completion of National Action Plan for land degradation and drought									
Completion of the Ten (10) Strategic Plan	###								
Public Outreach Campaign; five regional workshops are to be held, with an estimated participation of 200 – 250 persons	###	###							
Reviewing the Land Conservation Improvement Act of 1992 and the development of regulations to support the implementation the act.	###								
Two national consultations anticipating the participation of approximately 130 persons		###	###						
Approximately 60 persons trained in GIS and GPS technology				###					
Development of a land degradation classification for St. Lucia and mapping of some of the land degradation sites				###	###				
Increase awareness of the value of GIS and GPS, and enhanced capacity and increased use of GIS and GPS					###	###			
Complete matrix of all stakeholders involved in land resource management					###				

Final Report – Consultancy to Develop UNCCD NAPSAP for Saint Lucia

Meeting with Private Sector (opportunity to sensitize the PS on/of investment opportunities for them as it relates to the management of the land resource base under UNCCD)					###				
Meetings with academia professionals; meeting with banana companies and farmers; meeting with PS/ and Heads Departments of select ministries; Meeting with Ministers of Government					###	###			
Presentation of First Draft of Strategic Action Plan; Document to be reviewed by Review Committee.						###			
Second Draft presented, this is submitted to the Private sector and Minister with the Ministry responsible for UNCCD implementation for review							###		
Capacity building activities for forestry, extension and social transformation field staff, CBOs and NGOs representatives							###		
Strategic plan to guide the country towards SLM								###	

6. Requirements

6.1 Personnel

A multi-disciplinary team of consultants is required to undertake the assignment including a Project Leader, who should be a Natural Resource Policy Specialist. The Project leader shall have the responsibility for organizing the conduct of the work, designing and implementing the NAP/SAP/GIS, and coordinating the outputs of the various experts and ensuring that the deliverables and implementation plan is integrated, holistic, and feasible.

Key Experts

The range of specialist to be employed in conducting the NAP/SAP/GIS project shall include:

Agronomist with experience with land management or Natural Resource Specialist

Public or Environmental Education Specialist

GIS Specialist

Meteorologist

1. Agronomist or Natural Resource Specialist

The Agronomist or Natural Resource Specialist should possess at least, a Masters Degree in Agronomy or Natural Resource Management or in a related field and should have at least 5 years experience in agronomy or natural resource management and knowledge in land management.

2. Public or Environmental Education Specialist

Diploma or equivalent experience in, Mass Communications, Marketing or Advertising.

General professional experience

The Consultant must possess skills and experience in the following areas:

Excellent project planning and project management skills

Excellent oral and written communication skills

Fluent in spoken and written English

Fluent in spoken Creole

At least five (5) years experience in marketing, broadcasting, video production or production processes

At least five (5) years experience in the preparation of written and audio public awareness material

GIS Specialist

The GIS Specialist shall the minimum qualification of possess at least:

A degree in GIS;

at least 5 years professional experience in the field of GIS.

Meteorologist

The Meteorologist should possess at least, a Masters Degree in field of Meteorology or at least ten years experience in that field of study. He or she

should be able to develop models for running various simulations, to analyze data and study trends, resulting in the development of Early Warning Systems for predicting Drought over a twenty year period.

Other experts

CVs for experts other than the key experts are not examined prior to the signature of the contract. They should not have been included in tenders.

The Consultant shall select and hire other experts as required satisfactorily carry out the assignment.

Support staff & backstopping

Backstopping costs are considered to be included in the fee rates.

6.2 ACCOMMODATION, TRANSPORTATION AND SUPPORT FACILITIES

Accommodation, transportation and any other support facilities required for the execution of the project are the responsibility of the Consultant. The cost thereof must be included in fees and expenses for rendering the agreed services.

6.3 Facilities to be provided by the Consultant

To be defined within the proposal submission

6.4 Equipment

No equipment is to be purchased on behalf of the Contracting Authority / beneficiary country as part of this service contract or transferred to the Contracting Authority / beneficiary country at the end of this contract. Any equipment related to this contract which is to be acquired by the beneficiary country must be purchased by means of a separate supply tender procedure.

6.5 Incidental expenditure

Fees for incidental expenditure will have to be subsumed into the consultant's contract fee.

6.6 Expenditure Verification

Not applicable

7. REPORTS

7.1 Reporting requirements

Please refer to Article 26 of the General Conditions. Interim reports must be prepared every six (6) months during the period of execution of the contract. They must be provided along with the corresponding invoice, the financial report and an expenditure verification report defined in Article 28 of the General Conditions. There must be a final report, a final invoice and the financial report accompanied by an expenditure verification report at the end of the period of execution. The draft final report must be submitted at least one month before the end of the period of execution of the contract. Note that these interim and final reports are additional to any required in Section 4.2 of these Terms of Reference.

Each report shall consist of a narrative section and a financial section. The financial section must contain details of the time inputs of the experts, of the incidental expenditure and of the provision for expenditure verification.

Consultancy reports shall be submitted to the Ministry of Agriculture, Forestry Dept, NAO, BIT and the EC Delegation in Barbados. At least 6 copies: 3 to the MAFF; 1 to the NAO, 1 to the BIT and 1 to the EU Delegation of the European Commission in Barbados.

One week following the start of the Consultancy the consultant shall present an Inception report for discussions with relevant stakeholders.

A draft interim report shall be presented at the end of this first phase which will be finalized by the consultant 3 weeks thereafter, following review and comments by key stake holders.

The final interim report shall comprise a brief summary of the Consultant's activities and the main report.

Following the second phase the consultant will present an overall final report, which will include his/her assessment of the progress made by project staff in adopting the M&E system.

7.2 Submission & approval of progress reports

Six copies of the progress reports referred to above must be submitted to the Project Manager identified in the contract. The progress reports must be written in English. The Project Manager is responsible for approving the progress reports.

8. MONITORING AND EVALUATION

8.1 Definition of indicators

Indicators on effective project implementation shall include the achievement of the following:

- timely submission of reports,
- conformity of report
- skills transfer
- utility of reports

8.2 Special requirements

None

Appendix 2. Indicative List of Key Stakeholders

TYPE	STAKEHOLDER
Public Sector	Ministry of Agriculture, Lands, Forestry and Fisheries*
	Ministry of Economic Affairs – SDES, CZMU, National Development
	Ministry with responsibility for Physical Development, Housing, Urban Renewal and Local Government – Physical Development; Crown Lands Dept; Housing Department;
	Ministry of Communications and Works – Meteorological Office
	Ministry of Health – Public Health Department
	Attorney General and Ministry of Justice – Attorney General’s Chambers;
	Ministry of Home Affairs - Royal Saint Lucia Police Force; Saint Lucia Fire Service
	Ministry of Trade, Industry, Commerce and Consumer Affairs
	Ministry of Tourism and Civil Aviation
	Ministry of Education and Culture
	Ministry of Finance
	Ministry of Social Transformation
Statutory Bodies	Banana Industry Trust (BIT)
	Water and Sewerage Corporation
	Solid Waste Management Authority
	Saint Lucia National Trust
	St. Lucia Bureau of Standards (SLBS)
	Saint Lucia Air and Sea Ports Authority (SLASPA)
National Housing Corporation	
Private Sector/NGOs	Farmers Organisation- Fairtrade, TQFC, SLBC
	Fishers Organisation
	Saint Lucia Chamber of Commerce, Industry and Agriculture
	Representatives of Industrial Enterprises – Quarrying
	Saint Lucia Hotel and Tourism Association (SLHTA)
	Representative Banking/Financial institutions
	Land Developers, Builders and Contractors
	Bottled Water Companies
	Private Forest Land Owners
National Organisations	National Emergency Management Organization (NEMO)
	Poverty Reduction Fund (PRF)
	Basic Needs Trust Funds (BNTF)
	National Development Corporation
	National Conservation Authority (NCA)
	BERU /Banana Production Management Unit (BPMU)
	Folk Research Centre
National Research and Development Foundation (NRDF)	
Community Organisations	Community Based Organisations (CBOs)
	Watershed/Water Catchment and Environmental Groups
	SMMA/SRDF
	Development Foundations
	Local Area Development Committees
	Town and Village Councils
Disaster Management Committees	
Regional and	Organisation of Eastern Caribbean States (OECS)

Final Report – Consultancy to Develop UNCCD NAPSAP for Saint Lucia

International Organisations	
	Caribbean Environmental Health Institute (CEHI)
	Caribbean Natural Resources Institute (CANARI)
	Caribbean Conservation Association (CCA)
	Caribbean Agricultural Research and Development Institute (CARDI)
	Inter-American Institute for Cooperation on Agriculture (IICA)
	Windward Islands Banana Development and Exporting Company (WIBDECO)
	World Wildlife Fund
	United Nations Development Project (UNDP)
	United Nations Environmental Fund – Global Environmental Fund (UNEP-GEF)
Other	Other Resource Users – Charcoal Producers,

*- Departments of Forestry, Agriculture/Extension, Engineering, Agricultural Information Unit, Fisheries, IWCAM, Biodiversity Unit, Corporate Planning and Statistics

Note: Stakeholders who were consulted within the project time frame are highlighted in red

Appendix 3. List of Documents Reviewed

Chase, V.A., et al. 2008. Development of Watershed Management Plans for Selected Watersheds in St. Lucia. Ministry of Economic Planning, Economic Affairs, Investment and National Development. EU SFA 2003, consultancy output.

Cox, C.A. 1997. *Watershed master planning for St. Lucia using geographic information systems*. MSc Thesis, McGill University, Montreal.

Cox, C.A. 1999. *Watershed land capability classification and crop suitability modeling using geographic information systems*. Proceedings of the Caribbean Food Crop Society 35th Annual Meeting, St. Lucia.

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Government of St Lucia - *European Community Country Strategy Paper and National Indicative Programme for the period 2001 – 2007*.

Government of St. Lucia, 2002-2006. *First, Second and Third National Reports for UNCCD*.

Government of St. Lucia, 2004-2006 UNCCD: Country Report On National Action Programme, Saint Lucia

Government of St. Lucia, 2006. *A thematic assessment of the implementation of the United Nations Convention to Combat Desertification/ Land degradation (UNCCD) in Saint Lucia*, AGRICO LTD.,

Government of Saint Lucia. 2006. *A National Water Policy for Saint Lucia*. Water Resources Management Unit, Ministry of Agriculture, Forestry and Fisheries, Castries. 42 pp.

Government of Saint Lucia. 2001. *Saint Lucia's Initial National Communication on Climate Change*. Ministry of Planning, Development, Environment and Housing, Castries, Saint Lucia. 104 pp.

Government of Saint Lucia. 2000. *National Biodiversity Strategy and Action Plan of Saint Lucia*. Ministry of Agriculture, Forestry and Fisheries. Castries, Saint Lucia. 68 pp.

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Government of Saint Lucia. 1997. *Post Debbie Rehabilitation: Forest and Environmental Component, Final Report*. Forest and Lands Department, Ministry of Agriculture, Forestry and Fisheries.

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Isaac, C. and C.P.A. Bourque (2001) 'Ecological Life Zones of St. Lucia' in *Global Ecology and Biogeography* 10: 549-566.

Mc Donald et al, 1990. *Landscape Function Analysis Manual, Commonwealth Scientific and Industrial Research Organisation (CSIRO) Sustainable Ecosystems*.

Norville, P.O. 1990. *The design and evaluation of soil conservation systems for St. Lucia*. MSc Thesis, McGill University, Montreal.

Polius, J. et al. 2007. *Assessing and Mapping Land Degradation: Case of the Southern Region of Saint Lucia*.

Polius, J. 1989. *A treatment-oriented land capability classification for Glavier-Bousquet d'Or, Mabouya Valley*. Technical paper, Caribbean Agricultural Research and Development Institute/Government of St. Lucia.

Lloyd B. and T. Thorpe. 1997. *Catchment surveillance methodology in project entitled "The Development & Integration of Biotic and Chemical Monitoring with Land-Use Assessment for Tropical River Resource Management", River Surveillance in the Caribbean*. University of Surrey in collaboration with CEHI, ODA.

Stark J., Lajoie P., Green A. J. (1966): *Soil and land-use surveys. No. 20, St. Lucia*. University of the West Indies, Trinidad.

Migeot J., Hadwen P. (1986): *Saint Lucia Water Resources: Preliminary Assessment*. Vols. 1& 2. Ministry of Agriculture, Castries, St. Lucia.

United Nations Convention to Combat Desertification Secretariat. 1995. *United Nations Convention to Combat Desertification; In those countries experiencing serious drought and/or desertification particularly in Africa*. Text and Annexes.

United Nations Convention to Combat Desertification Secretariat. 1995. *Down to Earth; A simplified guide to the Convention to Combat Desertification, why it is necessary and what is important and different about it*.

United Nations Development Programme, Global Environmental Fund. 2006. *The GEF Response and the LDC/SIDS Portfolio Initiative*.

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