

9. PROJECTS [1\$US=2.6882 Eastern Caribbean (EC) Dollars]

Project 1: Policy, institutional and legislative review

Rationale: As demonstrated by the studies and consultations carried out as part of the process of formulation of the NBSAP, there is need for a comprehensive policy framework to guide biodiversity conservation and management, there are critical gaps and overlaps in institutional arrangements, and the legal framework is inadequate to achieve the objectives of the strategy and action plan.

Objectives: The objectives of this project are to:

- provide an adequate and effective policy framework;
- identify the most appropriate institutional arrangements for effective biodiversity conservation and management;
- identify the legal requirements for effective policy implementation, including the harmonisation of laws, the preparation of new laws and regulations, and the refinement of enforcement mechanisms;
- enhance the capacity of relevant institutions to implement policy and to manage the use of biological resources effectively.

Activities: The main steps to be followed in this project are as follows

- review of the National Environmental Action Plan (NEAP) and its recommendations, particularly as it relates to the establishment of the National Environmental Commission (NEC);
- study of the policy implications of the National Biodiversity Strategy and Action Plan;
- identification of policy issues requiring consideration or clarification;
- participatory formulation of specific policies when needed (including a policy on wildlife, for which a need has already been clearly identified);
- review of current institutional arrangements and formulation of recommendations, including the preparation of capacity-development plans for key organisations;
- study of the desirability and feasibility of establishing an institution or mechanism specifically dedicated to financing biodiversity programmes;

- review of current legal instruments, identification of gaps and overlaps, and formulation of recommendations;
- review of international conventions, their relevance to national needs, and the desirability of modifying St. Lucia's participation in these international instruments;
- determination of the feasibility and desirability of establishing a special court to deal with environmental offenses;
- consultation with land owners and other stakeholders, and identification of the most appropriate instruments to ensure the conservation of the biological diversity on private lands;
- development of new laws and regulations when needed (notably for the management of wild plants and animals).

Total estimated costs: EC\$ 85,000/US\$ 31,620.

Implementation and institutional arrangements. This project should be implemented under the auspices of the Ministry of Agriculture, Forestry and Fisheries and the Department of Environment of the Ministry of Planning, Development, Environment and Housing (or its successor in title and authority for environmental matters), by a broad-based committee established specifically for this purpose.

Project 2: Identification and selection of methods, tools, baseline variables, indicators and parameters needed for effective monitoring

Rationale: There is need for serious and effective monitoring of the status of biological diversity and the trends affecting its components, as this information is indispensable for management. Monitoring activities are typically based on carefully designed and selected instruments which provide the necessary information in the most effective and efficient manner. Considering this strategy and action plan's emphasis on participation, it is also essential to select parameters and indicators which can easily be understood and applied by non-scientists, and to devise mechanisms and activities which would document and use popular environmental knowledge.

Objectives: The objectives of this project are to:

- develop a national research focal point for biodiversity resource investigation;
- establish research protocols for investigations and the dissemination of information;
- implement mechanisms for the facilitation of coordination and collaboration between agencies concerned with biodiversity research.

Activities: The main components of this project are as follows:

- conduct a comprehensive review of research needs and compile current and proposed research initiatives in biodiversity investigations. This includes the identification of deficiencies and strengths within agencies, and the definition of areas of overlap between agencies concerned with data collection;
- identify research priorities and opportunities, with particular attention to the need to understand current and future threats to biological diversity, their root causes, and the measures required to manage them;
- draft a national policy on biological diversity research along with the development of research protocols, standards and mechanisms for dissemination of information;
- establish a national focal point for the coordination and streamlining of research initiatives between concerned agencies. This focal point will have strong institutional linkage with the Sir Arthur Lewis Community College and the University of the West Indies.

Total estimated costs: EC\$ 900,000/US\$ 334,797.

Implementation and institutional arrangements: This project will be a joint effort between facets of all local agencies concerned with research and will be spearheaded by the Ministry of Agriculture, Forestry and Fisheries and the Department of Environment of the Ministry of Planning, Development, Environment and Housing (or its successor in title and authority for environmental matters), working in collaboration with all other ministries and agencies concerned with scientific research and monitoring in relevant disciplines. The project will be phased over 4 years from initial assessments to development of research policy to establishment of the national research focal point.

Project 3: Comprehensive inventory of terrestrial biological resources

Rationale: There is a pressing need to compile data on local floral and faunal diversity and terrestrial ecosystems, with a view to assessing their status and identifying existing and potential threats to their survival. Little work has been carried out in this area and hence ecological relationships between species and the impacts of human interactions are poorly understood. Such a project will yield important baseline data upon which to develop effective management strategies, taking into account social and developmental issues and concerns.

Objectives: The objectives of this project are to:

- provide baseline data on the status of floral and faunal biodiversity on St. Lucia for monitoring and management;

- identify species and habitats that are currently endangered and develop management strategies to ensure population viability and habitat maintenance;
- expand the knowledge base on the uses and potential economic/social uses of local flora in their application in areas such as medicine, craft, soil and water conservation;
- increase public awareness on the need to conserve populations and habitats.

Activities: The main components of this project are as follows:

- identification of and consultation with relevant agencies and groups concerned with this data to assist in development of terms of reference for the project;
- development of the methodology for assessment of forest biodiversity; spatial characterization of vegetation types (aerial mapping) and on-ground survey assessment;
- setting criteria and standards, and identification of technologies for data capture;
- training of technicians and resource persons attached to the project;
- aerial mapping of all natural ecosystems on St. Lucia; subsequent conversion to digital (GIS) format for storage and analysis;
- ground survey for detailed assessment of ecological parameters;
- compilation of the active and latent social/economic importance of forest resources (medicinal, artisanal, etc.);
- processing and treatments of data and development of database on biological resources;
- dissemination of research results.

Total estimated costs: EC\$ 1.5 million/US\$ 557,994.

Implementation and institutional arrangements. This is a long-term initiative which will require a phased approach. It should be coordinated by the Department of Forestry, who should assume responsibility for the preparation of the project documents.

Project 4: Inventory of marine and coastal biodiversity

Rationale: In general, studies relating to biodiversity within coastal and marine areas focus on the wider Caribbean region rather than on specific islands. Hence, there is little, if any, information on the existence of indigenous, rare and endangered species in the coastal and marine areas of St. Lucia. In order to effectively protect and manage such biodiversity, there is first a need to conduct an inventory of biological resources in areas of potential interest. This inventory would provide baseline data essential to the monitoring and management of coastal and marine resources.

Objectives: The objectives of this project are to:

- provide a status report on all biological resources within the areas of focus;
- establish baselines required for effective monitoring and management of biological resources.

Activities: This project will be implemented as follows:

- acquisition of appropriate research team;
- identification of the extent of the study area;
- design and implementation of project;
- establishment of data base;
- production of document on findings;
- dissemination of research results.

Total estimated costs: EC\$ 850,000/US\$ 316,197

Implementation and institutional arrangements: This project will be coordinated by the Department of Fisheries.

Project 5: Assessment of the stocks of the Queen Conch, *Strombus gigas*

Rationale: The Queen Conch, *Strombus gigas*, locally known as lambi, is an important commercial species. Fish landing data and surveys conducted by the Department of Fisheries indicate that population density is declining and that the population may become threatened if a suitable management strategy is not implemented in the very near future. It is thus necessary that the current status of the conch population, as well as the fluctuations over time, be determined island wide.

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Objectives: The objectives of this project are to:

- determine the major conch habitats and population densities around the island;
- determine current and past fishing efforts;
- establish an effective management system.

Activities: The main activities to be implemented in this project are as follows:

- conduct, over an initial period of three years, quarterly underwater surveys of conch habitats, with emphasis on conch population locations and densities, impact of fishing effort, and environmental threats;
- conduct consultations with fishers and other stakeholders to review existing management arrangements and define new strategies.

Total estimated costs: EC\$ 50,000 per year/US\$ 18,600 per year.

Implementation and institutional arrangements: This project will be implemented by the Department of Fisheries in collaboration with fishing communities. In the formulation of new management arrangements, the option of establishing formal co-management agreements will be considered.

Project 6: Assessment and management of wetlands

Rationale: Wetlands, including mangroves and other formations, are severely under threat from a variety of impacts, including changes in drainage patterns, land reclamation, waste disposal, coastal erosion and wood harvesting. There is need to conserve the remaining samples of these habitats, and this can only be achieved if there is a strong rationale for that conservation.

Objectives: The objectives of this project are to:

- assess the current status of wetlands in St. Lucia;
- identify the sources of impact and the issues requiring management;
- provide the basis for the development of conservation and management plans and arrangements for all remaining wetlands in St. Lucia;
- develop the economic and social argument to support policy decisions related to the future of wetlands.

Activities: The main steps to be followed in this project are as follows:

- surveying and mapping of all wetlands;
- field surveys to assess status, identify stakeholders and management issues, and collect data on bio-physical conditions, uses and impacts;
- participatory planning processes to define management plans and establish new management arrangements;
- monitoring of the implementation of the mangrove management plans, and of the status of wetlands over time.

Total estimated costs: EC\$ 80,000/US\$ 29,760.

Implementation and institutional arrangements: This project will be implemented jointly by the Ministry of Agriculture, Forestry and Fisheries through its Departments of Fisheries and Forestry, working in collaboration with the St. Lucia National Trust, the Ministry of Communications, Works, Transport and Public Utilities, and the Ministry of Community Development, Culture, Local Development and Co-operatives. Communities living near wetlands and making use of these resources will also be involved.

Project 7: Assessment of freshwater biological resources

Rationale: Little is known about freshwater biological resources in St. Lucia, and freshwater ecosystems are possibly the most threatened on the island at this time. The real impacts of these factors (pollution, collapse or alteration of river banks, mining for sand and stones, sedimentation) are not properly documented and assessed, largely because of the absence of baseline data. There is a legitimate fear that biodiversity loss may only be realised when population numbers have fallen below those levels at which recovery remains possible.

Objectives: The objectives of this project are to:

- identify freshwater biological resources;
- establish a baseline of data (species distribution, migratory patterns, population densities, breeding patterns);
- establish management systems whenever required.

Activities: This project will involve:

- species collection and identification;
- mapping of habitats;
- field surveys to identify impacts and their sources;
- consultation with stakeholders;
- formulation of management plans and programmes.

Total estimated costs: EC\$ 80,000/US\$ 29,760 per year over three years.

Implementation and institutional arrangements: This project will be implemented by the Department of the Environment of the Ministry of Planning, Development, Environment and Housing (or its successor in title and authority for environmental matters) in collaboration with the Departments of Fisheries and Forestry.

Project 8: Inventory of biological resources of importance to agriculture

Rationale: St. Lucia is rich in plant and animal genetic resources, many of which can be exploited for social and economic benefits. The island also has genetic resources that are in danger of being lost due to misuse. The conservation and sustainable use of these resources cannot be planned and organised in the absence of appropriate information. An inventory of plant genetic resources would enable the country to know the resources that are threatened and those that offer potential for economic uses. The island also has other flora and fauna that are of significance to various economic sectors, notably agriculture and health. These include arthropods and micro-organisms, many of which cause or transmit diseases. It is therefore essential that people be aware of the species present on the island.

Objectives: The objectives of this project are to:

- develop management systems for selected species of flora and fauna;
- provide the information base required for the design and implementation of conservation and sustainable use programmes;
- establish the baselines needed for monitoring.

Activities: The main steps to be followed in this project are as follows:

- identification of specific targets (ornamental species, medicinal plants, root and tuber crops, herbs and spices, arthropods, and other beneficial and disease-causing organisms);
- Design of data base system and research protocols;
- establishment of gene banks for evaluation of germplasm;
- establishment of *in vitro* gene banks and *in situ* sites for conservation of germplasm;
- collection and management of information;
- development of a plant and animal genetic resources management system

Total estimated costs: EC\$ 1.4 million/US\$ 520,795.

Implementation and institutional arrangements: This project will be coordinated by the Department of Agriculture, in collaboration with relevant regional and international agencies.

Project 9: Study and determination of the carrying capacity of critical areas used for tourism and recreation

Rationale: The environments used for land-based eco-tourism and recreation activities vary from the use of forest and hiking trails to visits to waterfalls. These activities create a variety of environmental and user management challenges. One such challenge is that of determining the carrying capacity of critical areas used for eco-tourism and recreation activities, in order to prevent or minimise environmental impacts. Given the growing need for diversification of the St. Lucian economy, the existing trend of upgrading and developing new sites for eco-tourism and recreation will surely be maintained in the short and medium terms. To ensure that the environmental quality of sites and attractions is maintained and that their use is sustainable over the long term, three basic and related components of carrying capacity must be considered. These are: (1) management objectives, (2) visitor attitude and demand, and (3) impact of visitation and other uses on resources.

Objectives: The objectives of this project are to:

- determine management objectives for specific eco-tourism/recreation sites;
- determine the appropriate level of use for specific eco-tourism/recreation sites;
- develop and apply the appropriate tools to determine visitor attitudes towards the product presented;

- develop and apply the appropriate methodology and tools to determine physical environmental gradation;
- conserve the natural environment, while allowing for visitor participation;
- generate revenue (optimize revenue).

Activities: The main steps to be followed in this project are as follows:

- identification of natural and cultural assets of each site, including flora and fauna as well as physical features that constitute its tourism and recreation potential;
- determination of the operational procedures and the interpretation skills required for the type of product provided;
- setting of standards and values for persons involved in the management of such sites;
- conduct of visitor surveys on a half yearly basis and provision of a monitoring system, including the conduct of surveys to determine the impact of trail management practices;
- development of appropriate communication methods and programmes;
- review of management profiles, and assessment of management practices and inventories (methods);
- conduct of inventories of trails and other facilities;
- determination of user fees system adapted to the specific site.

Estimated costs: This will be dependent on the number of sites covered.

Implementation and institutional arrangements: This project will be co-ordinated by the Department of Forestry, working in close collaboration with the Ministry of Tourism, the St. Lucia National Trust and the relevant NGOs and CBOs.

Project 10: Design of standards and guidelines of behaviour in nature tourism sites and attractions

Rationale: Human behaviour is the primary source of negative impacts on tourism sites and attractions in sensitive habitats. There is need to provide simple yet effective guidelines in order to guide behaviour and thus maintain a positive relationship between tourism and biodiversity.

Objectives: The objectives of this project are to:

- conserve biodiversity in nature tourism sites and attractions;
- maintain the quality of tourism sites and attractions, and enhance visitor experience.

Activities: The activities to be undertaken under this project include:

- monitoring of behaviour and impacts in selected representative sites and attractions;
- identification and promotion of alternative behaviour when desired;
- training of managers of sites and attractions;
- development of brochures and other information materials.

Costs: To be estimated.

Implementation and institutional arrangements: This project will be implemented by the Ministry of Tourism in conjunction with relevant community groups, tour suppliers and destination management companies.

Project 11: Review of the national plan for a System of Protected Areas

Rationale: The national plan for a System of Protected Areas, which was developed in 1992, constitutes the most comprehensive planning instrument available in St. Lucia in the field of biodiversity conservation and management. It meets one of the main requirements of the CBD, and has served as an informal guide to many planning and natural resource management agencies and initiatives over the past few years. It can form the basis for the implementation of a significant portion of the NBSAP.

Objectives: The objectives of this project are to:

- revise the national plan for a System of Protected Areas to ensure that it meets current needs and takes advantages of all available resources and opportunities;
- strengthen linkages between the System of Protected Areas and socio-economic development issues and objectives;
- seek formal endorsement of the plan by the Government of St. Lucia;
- identify the elements needed for the full and effective implementation of the plan.

Activities: The main steps to be followed in this project are as follows:

- participatory review of the plan, identification of changes and adaptations needed, and submission of the conclusions of the review to the Cabinet of Ministers;
- identification of training, organisational development, funding and technical requirements for the implementation of the plan, and of specific measures needed to meet these requirements.

Total estimated costs: EC\$ 75,000/US\$ 27,900.

Implementation and institutional arrangements: This project will be implemented by the Ministry of Agriculture, Forestry and Fisheries, the Department of the Environment of the Ministry of Planning, Development, Environment and Housing (or its successor in title and authority for environmental matters) and the St. Lucia National Trust.

Project 12. The economics of biodiversity loss and conservation

Rationale: While it is acknowledged that non-measurable values provide an important rationale for biodiversity conservation, it remains useful to determine the quantitative values of that diversity. Such information can be critical in the design and implementation of advocacy and management programmes. It can also assist in guiding the identification of policy instruments, by determining and quantifying the economic causes of problems, as well as the measures that can assist in achieving conservation and management objectives.

Objectives: The objectives of this project are to:

- improve the effectiveness of biodiversity conservation and management programmes, through the use of appropriate economic instruments;
- assist in conflict management and conflict resolution, by providing data to assess the interests and needs of various parties.

Activities: The main steps to be followed in this project are as follows:

- study of the economic causes of biodiversity loss, with particular attention to: perverse incentives; insecure property rights; growth in demands for resources; inequitable access to resources and distribution of results;
- quantification of the value of the various components of biodiversity;

- identification and assessment of the economic instruments available to assist with biodiversity conservation, including incentives (user fees, taxes, permits, subsidies, compensation, liability and credit), controls (quotas as well as spatial and temporal limits to entry, use and access) and financing mechanisms (revenue generation, user fees, loans and debt-for-nature swaps);
- dissemination of results and application of fiscal and financial instruments identified during this study.

Total estimated costs: EC\$ 85,000/US\$ 31,620.

Implementation and institutional arrangements: This project will be implemented by the Ministry of Agriculture, Forestry and Fisheries and the Department of the Environment of the Ministry of Planning, Development, Environment and Housing (or its successor in title and authority for environmental matters), working in close collaboration with other relevant organizations..

Project 13: Training

Rationale: In order to implement the NBSAP and to meet the broader challenges of natural resource management and conservation in St. Lucia, there is need for a concerted effort to build, acquire and enhance the necessary skills among a range of organisations. When skills are needed but not available on-island, there may also be need to acquire them.

Objectives: The objectives of this project are to:

- strengthen the capacity of organisations to participate in the management and conservation of biological diversity;
- reduce the dependency of St. Lucian organisations on external expertise to conduct biodiversity-related work.

Activities: Domains and fields in which training will be given priority include the following:

- herbarium management;
- taxonomy;
- ecosystem management and restoration;
- research and monitoring techniques.

The project will involve the formulation of a detailed training strategy and the identification of implementation mechanisms.

Total estimated costs: EC\$ 45,000/US\$ 16,740 for the formulation of the training strategy; other costs to be determined on the basis of the contents of the strategy and specific needs identified.

Implementation and institutional arrangements: This project will be implemented jointly by the Ministry of Agriculture, Forestry and Fisheries, the Department of the Environment of the Ministry of Planning, Development, Environment and Housing (or its successor in title and authority for environmental matters) and the Ministry of Education, Human Resource Development, Youth and Sports.

Project 14: Establishment of management programmes for the protection of the endemic and rare species of birds

Rationale: There are a few threatened bird species in St. Lucia that require immediate and active intervention to ensure their survival. A major hindrance however is the fact that not enough is known about these species to make effective management recommendations. This situation is particularly difficult for species whose range occurs outside protected areas (forest reserves). The species to be studied include the White-breasted Thrasher (*Ramphocinclus brachyurus*), Rufous Nightjar (*Caprimulgus rufus*), St. Lucia Oriole (*Icterus laudabilis*), House Wren (*Troglodytes aedon*) and the St. Lucia Blackfinch (*Melanospiza richardsoni*).

Objectives: The objectives of the project are to:

- define and protect the habitats of these species;
- increase public sensitization on the status and need to conserve these species;
- enhance the contribution of endemic and rare bird species to St. Lucia's eco-tourism product and experience.

Activities: The main components to be carried out in this project are as follows:

- mapping of habitats and determination of land ownership and land tenure issues within rare bird habitats;
- consultations with relevant stakeholders;
- training of project personnel in applied wildlife research techniques, data acquisition and analysis;
- population censuses and monitoring;
- research on reproductive biology and habitat ecology;

- participatory formulation of management plans and interventions that include establishment of management areas, public education and monitoring and linking conservation to potential eco-tourism investment;
- establishment of Nature Reserves as appropriate.

Total estimated costs: EC\$ 850,000/US\$ 316,197.

Implementation and institutional arrangements: This project will be implemented by the Department of Forestry, working in close collaboration with local communities. The institutional arrangements for the management of the reserves will be determined as a result of the participatory planning process mentioned above.

Project 15: Establishment of a turtle monitoring programme

Rationale: For several years, there has been a moratorium on the harvesting of marine turtles in St. Lucia. In order to provide the basis for the formulation of future management programmes, there is need to continually monitor and evaluate marine sea turtle stocks. However, given the demands of fishers and some members of the general public for an open/close season, there is an urgent need to determine the status of the turtle population.

Objectives: The objectives of the project are to:

- Assess the status of the marine turtle resources in St. Lucia and provide the information required for management;
- develop a management strategy for marine turtles.

Activities: The project will:

- assess population densities and the impacts of various human activities, including fishing, tourism, human settlements and agriculture;
- conduct a genetic analysis of turtle resources;
- identify and describe major nesting beaches on St. Lucia;
- identify the migratory patterns of the various species found in St. Lucia, using DNA markers;
- identify existing threats to the nesting of turtles;

- conduct a survey of communities that have traditionally harvested turtles and determine the socio-economic impact of various management regimes on these communities;
- conduct frequency surveys of nesting on major nesting beaches;
- determine peak nesting periods;
- conduct underwater surveys to determine feeding grounds, migratory patterns and fishing threats.

Total estimated costs: EC\$ 150,000/US\$ 55,799.

Implementation and institutional arrangements: This project will be implemented by the Department of Fisheries in collaboration with community groups.

Project 16: Establishment of a photographic and videographic data base on biodiversity

Rationale: Photography and videography are indispensable tools for monitoring and management. They also serve education and public awareness activities, providing the materials to illustrate and communicate information about biological diversity. The collection and management of photographic and videographic data require special facilities and skills which can best be provided if they are assembled in one location. In the absence of such skills and facilities, biodiversity-related programmes are less effective, and the quality of their outputs suffers.

Objectives: The objectives of this project are to:

- establish a photographic and videographic data base on biological diversity in St. Lucia;
- provide materials in support of monitoring programmes;
- provide materials in support of educational and promotional activities.

Activities: This project will be implemented in phases, as follows:

- identification of an agency to serve as coordinating and implementing body;
- establishment of facilities for storage, filing and retrieval, and training of staff as required;
- compilation of materials available from participating agencies;

- development of procedures and protocols for use and publication of materials by third parties;
- design and implementation of a project to develop a photographic documentation of all rivers, wetlands, forest types and marine ecosystems in St. Lucia

Costs: To be estimated.

Implementation and institutional arrangements: This project will be coordinated by the Ministry of Agriculture, Forestry and Fisheries and the Department of Environment of the Ministry of Planning, Development, Environment and Housing (or its successor in title and authority for environmental matters), working in close collaboration with other relevant organizations.

Project 17: Education, public awareness and participation

Rationale: The objectives of the National Biodiversity Strategy and Action Plan cannot be achieved in the absence of a full level of awareness among all members of the public. In addition, all citizens need to be equipped with the knowledge and skills that will allow them to contribute to the conservation and management of the country's biodiversity. Formal and informal means of education and communication must therefore be used.

Objectives: The objectives of this project are to:

- sensitise the general public, including visitors to the island, on the importance of biodiversity;
- generate appropriate behaviour;
- create support for biodiversity conservation and management programmes;
- encourage active community participation in biodiversity conservation and management;
- increase the effectiveness of biodiversity conservation and management programmes, as a result of a greater involvement of the public;
- stimulate community participation in biodiversity conservation and management.

Activities: The main steps to be followed in this project are as follows:

- conduct of advertising campaigns and media programmes;

- formulate an action plan and strategy in collaboration with the Ministry of Education for the development, production and dissemination of educational materials;
- training of teachers in the use of these materials;
- strengthening of community groups involved or interested in biodiversity conservation and sustainable use;
- establishment of a small grants fund to support community-based activities in biodiversity conservation;
- provision of information to community organisations to enhance their capacity to participate in biodiversity conservation programmes;
- facilitation of networking among community groups through regular meetings, newsletters and joint activities;
- facilitation of local planning processes to formulate local-level responses to issues affecting biodiversity, and to design projects and actions aimed at conservation and sustainable use.

Total estimated costs: EC\$ 200,000/US\$ 74,399.

Implementation and institutional arrangements: This project will be implemented jointly by the Ministry of Agriculture, Forestry and Fisheries, the St. Lucia National Trust, the Department of Environment of the Ministry of Planning, Development, Environment and Housing (or its successor in title and authority for environmental matters) and other relevant agencies.

Project 18: Upgrading of national herbarium, and creation of sub-collections

Rationale: The National Herbarium of St. Lucia is administered by the Department of Forestry. It presently has a collection at least 1,300 species of native flora species which are stored in four metal filing cabinets in an air conditioned room. The herbarium also has a medium sized deep freezer which is used for storage of field collected flora samples. There is no separation between the floor area where the filing cabinets are located, the freezer and the working and drying area. Presently, the herbarium is managed by a forest officer who has no formal training in herbarium management, but has learnt through experience. This same officer acts as curator, technician and collector, and therefore is the custodian of the collection. There is no other significant plant collection on the island, neither does St. Lucia have its own published flora. The main reference work are regional studies which are incomplete and somewhat outdated, especially as some of the botanical names used are no longer valid. The National Herbarium will become an invaluable source of information on St. Lucia's indigenous flora to a wide range of user groups from schools to research institutions.

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Objectives: The objectives of this project are to :

- catalogue and establish a database for specimens compiled in the national herbarium;
- establish a management structure for the national herbarium;
- add new flora specimens to the present collection, also, to include non-vascular plants;
- improve on the existing physical conditions in the herbarium;
- establish a protocol for the operational functioning of the herbarium;
- develop a tool for monitoring and updating the status of all flora species in the different life zones;
- develop the staffing required for the full time management of the herbarium;
- dissemination of all relevant information to research institutes and the general public.

Activities: The main steps to be followed in this project are as follows:

- conduct an inventory and sample all natural vegetation types in all recognized life zones of the island;
- collection of three samples of each species of St. Lucia's flora;
- partitioning of the herbarium to include the following - filing room, storage room, drying room and laboratory room;
- purchasing of all necessary equipment, tools, materials and literature required for smooth operation of the national herbarium;
- procurement of the services of a plant taxonomist to spearhead the collection and cataloguing process, and identification of the various flora species (taxon of the species);
- collaboration with the Sir Arthur Lewis Community College and the University of the West Indies, St. Augustine Campus, for setting up a center to house the second and third sub-collections;
- training persons in the following fields - general botany, economic botany, ecology, ethnobotany, field methodology and herbarium management techniques;

Total estimated costs: EC\$ 850,000/US\$ 316,197.

Implementation and institutional arrangements: This project will be co-ordinated by the Department of Forestry in close collaboration with the relevant NGOs, the Sir Arthur Lewis Community College and the University of the West Indies, St. Augustine Campus.

Project 19: Development of artificial habitats for coastal and marine resources

Rationale: There is need to replace lost habitats and thus prevent or halt the loss (by death, migration, and loss of fecundity) of certain threatened and important marine species such as lobsters, reef fish, conch, sea urchin and coastal pelagics.

Objectives: The objectives of this project are to:

identify critical marine areas and ecosystems under threat;

- research, identify and establish environmentally suitable artificial habitats which will improve and if necessary replace threatened or lost habitats.

Activities: This project will involve the following activities:

- conduct of relevant surveys in coastal and offshore areas to determine habitats under threat of destruction;
- establishment of samples of artificial habitats (e.g. lobster house and artificial reefs) to determine their impact on biodiversity conservation;
- conduct of relevant public education and awareness programmes, especially among fishing communities;
- formulation of a comprehensive programme for the development of artificial habitats.

Total estimated costs: EC\$ 150,000/US\$ 55,799.

Implementation and institutional arrangements: This project will be implemented by the Department of Fisheries.

Project 20: Evaluation of the medicinal and culinary properties of herbs

Rationale: A number of herbs have traditionally been used for medicinal and aromatic purposes. There are other species which are not currently used in the country, but which are known to other societies for their medicinal and culinary uses. There would be much to gain from a systematic investigation of the current and potential uses of these herbs.

Objectives: The objectives of this project are to:

- foster greater awareness of the uses of local herbs;
- promote small-scale business activities based on the sustainable use of these resources;
- contribute to agricultural diversification.

Activities: The main steps to be followed in this project are as follows:

- surveys of current knowledge about uses of herbs in the country;
- collection of information from other countries;
- preparation of a technical package to guide processing and commercial uses;
- dissemination of information to farmers and processors;
- provision of technical assistance for processing and producing.

Total estimated costs: EC\$ 76,000/US\$ 28,272.

Implementation and institutional arrangements: This project will be implemented by the Department of Forestry, in collaboration with the St. Lucia National Trust and other relevant organisations.

Project 21: Promotion of organic farming

Rationale: The use of organic methods has a positive impact on biodiversity, as it reduces the negative impacts associated with the use of agro-chemicals, and encourages the use of more local species and varieties, thus increasing the chance of contributing to the conservation and dissemination of cultivars. Produce from organic farms are known to be better for human health. Organic farming offers the additional benefit of using organic waste in the production system.

These methods are relatively well known, but there are a number of obstacles to their acceptance by a larger number of farmers, including the lack of awareness of the benefits of organic farming, the absence of a strong demand from the consumer, and the weakness of marketing arrangements.

Objectives: The objectives of this project are to:

- support the growth of organic farming;
- reduce the negative impacts of agricultural production on biodiversity.

Activities: The main activities to be implemented in this project are as follows:

- public awareness campaign on the value and benefits of organic farming, and on the qualities of organic produce;
- sensitisation of the farming community, and extension of organic farming methods to interested farmers;
- provision of funding and technical assistance to pilot projects;
- liaison with public and private sector interests to improve marketing arrangements;
- conduct of a study to establish the feasibility of a programme of certification of organic farmers and produce.

Costs: To be estimated.

Implementation and institutional arrangements: This project will be implemented under the auspices of the Department of Agriculture, acting in collaboration with the Ministries of Education and Commerce and with relevant community organisations, notably the National Council for the Advancement of Rastafari.

Project 22: Increasing and managing plant diversity for sustainable rural livelihoods

Rationale: There are a number of plant species which provide useful goods and services to people, as well as the basis for sustainable uses that can bring benefits to people while maintaining diversity. The propagation of these species can bring the additional benefits of enhancing the use of marginal lands, assisting in the beautification of public areas and landscapes, and improving soil conservation.

Objectives: The objectives of this project are to:

- conserve important species and cultivars;
- sustain the production of goods which contribute to local production and subsistence systems;

- generate revenue and employment for small-scale producers;
- enhance St. Lucia's tourism product by improving the quality and diversity of craft and art work offered to visitors.

Activities: The main steps to be followed in this project are as follows:

- identification of the plant species that are the best candidates for a propagation programme (Latanier, *Cocothrynax barbadensis*, used in the making of brooms; spices; cashew trees; indigenous timber species; etc.);
- identification of potential partners at the community level;
- establishment of community-based nurseries, and propagation of plants in established government nurseries;
- provision of training and technical assistance to community groups.

Costs: To be estimated.

Implementation and institutional arrangements: This project will be co-ordinated by the Department of Forestry, working in close collaboration with the Department of Agriculture and with relevant NGOs and community groups.