Biodiversity Enabling Project

Ministry of Agriculture, Forestry and Fisheries (St. Lucia)

PROCEDURES MANUAL: for the conduct of research on biodiversity in Saint Lucia (Draft#2 –Post Stakeholder Consultation of June 2009)

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1.0 BACKGROUND

The ratification of the Convention on Biodiversity in 1993 established a focus for the assessment and monitoring of biodiversity. The need to establish effective data collecting and surveying for an increased knowledge base of the status of biodiversity was seen as a fundamental function of the Convention, particularly in the light of the accelerated loss of biodiversity and the apparent human induced changes in environmental conditions.

Assessment of biodiversity essentially means the identifying, inventorying, quantifying and surveying of the components of biodiversity at different levels of organisation such as genetic, individuals/species, populations, habitats and communities, and ecosystems and landscapes. Monitoring is the collection of data over time and space. Monitoring the components of biodiversity in respect of conditions will provide indication of change and the impact of change on the whole environment.

At present, the assessment and monitoring of biodiversity in Saint Lucia has not been an officially coordinated programme, but has evolved from practices and routines that form part of the operations of the Ministry of Agriculture, Forestry and Fisheries, with each sector having its own priorities, practices and administrative structures within which data collection is carried out. As such, this document aims to provide a guide that would ultimately lead to the adoption of a more comprehensive and coordinated approach to research and monitoring of biodiversity, increasing the efficiency, effectiveness and quality of management.

1.1 Objectives

While this document focuses on the needs and opportunities for biodiversity research and monitoring in Saint Lucia, it makes recommendations for the development of an overall protocol for science and technology research in the country.

The management issues addressed by such a protocol should not be static, and should therefore be reviewed periodically, preferably every two years. Further, a mechanism based on partnership and collaborative management, should be established to enable the on-going identification and evaluation of new concerns as they emerge, supporting the process of adaptive management. This would facilitate a coordinated approach to overall research and monitoring in Saint Lucia.

The overall objectives of the protocol include the following:

- to guide the involvement of students and researchers in research activities within the Saint Lucia
- to enhance the availability and use of information and knowledge relevant to management and planning authorities
- to ensure that information on the biodiversity of Saint Lucia is documented and effectively disseminated
- to adequately address the research needs of the country (in sync with priority areas of research)
- to ensure that adequate benefit sharing arrangements result from use of research information

1.2 Definitions

An understanding of the place of research and monitoring is fundamental to the framework:

Assessment: often used to mean a one-off detailed survey of biodiversity.

Biodiversity: The variety of life on earth. Most often articulated in terms of the abundance and variety of species and habitats.

Evaluation: method of prioritization that recognizes that different components of biodiversity have different values within a given context.

Inventory: quantitative assessment of particular species;

Mitigation: Activity carried out to negate or compensate for the forecasted impacts of a development.

Monitoring is an essential component of research. Monitoring is an intermittent (regular or irregular) series of observations in time, carried out to show the extent of compliance with a formulated standard or degree of deviation from an expected norm. In other words, monitoring refers to surveys aimed at detecting and explaining changes in abundance of species or features or to assess effects of conservation action. Monitoring indicators of effectiveness of management can answer questions about management policy and strategy. Research and monitoring activities must contribute to management objectives.

Ramsar site: A wetlands area of international importance designated by signatories to the 1971 'Convention on Wetlands of International Importance especially as Waterfowl Habitat' (Ramsar Convention).

*Research i*s the process by which questions are answered using the scientific method, applied to both natural and social issues. They may be fundamental questions that have no apparent or immediate application to management objectives, or they may be applied questions about the effectiveness of, or requirements for, particular management interventions. The essential characteristic of research is that it tests hypotheses in such a way that they can be rejected, revised and improved.

Sustainability: Maintaining the environments natural qualities and characteristics and its capacity to fulfill its full range of functions, including the maintenance of biodiversity.

1.3 Objectives of research and monitoring

The role of research and monitoring activities should be to:

- facilitate the conservation of biodiversity through an understanding of its functioning
- enhance the equitable economic, social and cultural benefits generated from the sustainable use of biodiversity both at the local and national levels
- generate new knowledge (in all disciplines, but particularly in the field of biodiversity management)
- guide management and planning decisions
- inform and educate stakeholders
- assess effectiveness of management
- generate new knowledge (in all disciplines, but particularly in the field of natural resource management).

2.0 PRIORITY AREAS OF FOCUS FOR RESEARCH

2.1 Agricultural Biodiversity

Target Area (Goal)	**Priority Research Area (Objective)**	Activity
Encourage the development of indicators of agricultural biodiversity and ecosystem status indicators, of spatial characteristics applicable to the national level		▪ To develop baselines on soil biota and relationship with land use, and biological basis of soil maintenance. ▪ To conduct baseline studies and establish benchmarks on invertebrate and bird species that are threatened by agriculture ▪ To establish benchmarks for the replacement of landraces with imported ones
Improve knowledge of and methods for the assessment of the status and trends of Agricultural biological diversity.		▪ To identify and assess the status of pollinators, and what they pollinate and establish threats and quantify economic contribution to the agricultural sector. ▪ To investigate status of animal (vertebrates and invertebrates) and plant species (angiosperms) not utilised in mainstream agricultural production from major taxonomic groups (including invertebrates and non-flowering plants) that may use or provide services for, the agro-ecosystem. ▪ To identify beneficial symbiotic relationships and associations in the development of organic or semi-organic farming systems. ▪ To identify and describe habitats and micro-habitats associated with particular agro-ecosystems or crop production systems. ▪ To establish biological linkages in agro-ecosystems (wild species use of agro-ecosystems or habitat change and loss of wild species). ▪ To assess technology transfer or crop production changes on biodiversity

Target Area (Goal)	**Priority Research Area (Objective)**	Activity
Improve level of scientific understanding of agricultural biodiversity (ecosystems components, structures, functions, and processes) and predictive capability.	Improve understanding of the processes influencing Agricultural BD at the species level.	▪ Linkages with Universities and postgraduate studies to develop case studies that can be used by postgraduates for thesis work. ▪ To assess and inventory the number of vertebrate species using habitat on agricultural land by species. ▪ To conduct a comparative case study to establish the difference in species diversity and abundance of arthropods and earthworms in organically and conventionally cultivated arable land
Develop infrastructure for data and information management.	Encourage and improve data management, accessibility, capacity-building and technology transfer.	▪ Integrate data management functionality of relevant departments, existing institutes and agencies to develop synergies and make better use of limited science and technology resources. ▪ To collate, centralize and digitize the vast amount of knowledge concerning the farming systems and farming environment of St Lucia. A great deal of this knowledge is personal knowledge, particularly within the Extension Services of MAFF and is the product of experience within the field, with knowledge of individual components and observations of events gathered over time. ▪ To collate, centralize and digitize all research from all agencies and institutions (governmental and non-governmental) as well as private parties that have been or are involved with inventorying, describing or cataloguing agricultural (and horticultural) biodiversity in St Lucia. ▪ To integrate the data development, collection, and processing systems between the different working cultures and sector objectives to allow centralized ICT processing.

Target Area (Goal)	**Priority Research Area (Objective)**	Activity
Ensure that the diversity and potential of forest genetic resources are maintained.	Assess current genetic diversity and its distribution and importance.	▪ To assess the percentage of indigenous crops that have been replaced ▪ To conduct molecular analysis using genetic markers on the parentage of crops/coefficient of kinship ▪ To evaluate the rate of change from dominance of non-domesticated species to domesticated species using land use changes ▪ To assess erosion/loss of genetic diversity patrimony
Prevent further losses of Agricultural BD	Mitigate the impacts of climate change. Develop understanding of the impacts of desertification on ABD. Develop cost-effective systems for assessing the impact of management on ABD.	▪ Develop knowledge on the possible impacts of climate change on ABD and develop response strategies and action plans. ▪ Research into vulnerability and adaptability of production systems. ▪ Develop indicators for valuation of ABD in relation with the goods and services they deliver.
Develop and implement appropriate control measures for mitigating impacts of IAS such as their: Eradication Containment Control	Research the dynamics of invasive species in Agricultural ecosystems.	Develop and support the implementation of control measures, including regular monitoring, mechanical control, chemical control, biological control and habitat management Investigate appropriate ways of involving traditional knowledge for detecting, defining impacts and control of IAS.
Ensure that ABD is not threatened by the introduction of GMOs.	Develop and enforce effective regulations for controlling the development and introduction of GMOs, in accordance with the Cartagena Protocol of the CBD.	To develop local capacity To identify and evaluate degree of local exposure to the emerging issue of the genetically modified technology

Target Area (Goal)	**Priority Research Area (Objective)**	Activity
Parties and Governments to fully recognize the whole range of economic values of ABD goods and services, including their non-marketable and marketed values		▪ To conduct surveys of markets and farms on species diversity used for food. ▪ To quantify the change in area of agricultural land use(conversion to or from agriculture) ▪ To conduct surveys of imports and use of agriculturally linked commodities such as pesticides and fertilisers which provide indication of changes in use, or the extent of the agricultural practice that may be occurring within the farming system. ▪ To identify and quantify local varieties of crops, particularly tree crops and traditionally utilized plants.
Training, institutional improvements and capacity building	Ensure that practitioners have adequate capacity for the implementation. To develop the capacity to classify organisms beyond morphological features, including microscopic examination and dissection of internal organs, The establishment of a laboratory capable of supporting molecular biology work in St Lucia, at present.	▪ Training of para-taxonomists or field work technicians. ▪ Train suitable persons such as biology teachers, members of farming organisations and environmental community groups in collection and survey practices and general classification procedures. ▪ Development of linkages with school research School based assessments for CXC in science demand investigative work. Monitoring surveys of insects within specified areas or the surveying of particular plant species for identification of pollinators is work that can be supported and developed within schools. ▪ Development of accreditable Agricultural/Biodiversity courses in conjunction with Sir Arthur Lewis Community College that may be accessed by external as well as local students. ▪ Links with universities and colleges could be established for summer field-work programmes.

Target Area (Goal)	Priority Research Area (Objective)	Activity
Technology Transfer	Identify and support the implementation of mechanisms for sustainable resourcing.	• To undertake case studies and experience-sharing carried out with effective involvement of local communities. • To institute capacity-building and institutional-strengthening policies, programmes and projects developed and in execution.

2.2 Forest Biodiversity

Target Area (Goal)	Priority Research Area (Objective)	Activity
Develop general classification of forest resources at various scales in order to improve the assessment of the status and trends of FBD.	Review, adapt and develop global and regional forest biodiversity databases and develop spatially explicit datasets (or maps) of forest biodiversity on a variety of scales.	Increase frequency of forest resource inventory (FRI) to a minimum of every 5 years. Stimulate country to initiate regular forest inventories.
Improve understanding of forest biodiversity (ecosystems components, structures, functions, and processes) and predictive capability.	Improve understanding of the processes influencing biodiversity and ecosystem function at the forest ecosystem level.	Selection and testing of indicators (structure, process, keystones, and umbrella species) on coarse and fine scales. Identify and understand the critical thresholds of forest change at which point FBD is permanently affected, including landscape diversity. Develop, strengthen, exchange and implement restoration ecology techniques. Plan and conduct adaptive management experiments in major forest types.

Target Area (Goal)	**Priority Research Area (Objective)**	Activity
	Improve understanding of the processes influencing FBD at the species level.	Taxonomy focused in areas with high species richness or rareness. Understand processes in areas with high species richness. Autecology of rare taxa. Fundamental relationship between biodiversity (species) and ecosystem productivity, functions/processes. Conduct important species population viability analysis (PVA for selected tree species of high socio-economic value).
Develop infrastructure for data and information management.	Encourage and improve capacity-building and technology transfer.	Implement and improve infrastructure (hardware, software, GIS and remote-sensing capabilities) and accessibility to information. Human resource development (staff training, workshop and seminars, technical exchange and training visits, development of training tools and resources).
Develop infrastructure for data and information management.	Develop and integrate primary databases for forest ecosystems and associated biodiversity, together with associated goods and services.	Integrate relevant departments, cooperation of existing institutes and agencies.
Technology Transfer	Review status of access and benefit sharing	To develop indicators of access and benefit-sharing To utilize official development assistance provided in support of the Convention To develop and apply indicators of technology transfer

2.3 Coastal and Marine Biodiversity

2.3.1 Coastal ecosystems

Target area	Priority research areas
Assessment and monitoring of ecosystems	To accurately determine the extent of the various coastal ecosystems using remote sensing and GIS. To develop inventories of biodiversity existing within the various coastal ecosystems. To establish benchmarks using traditional and historical information. To conduct comprehensive assessments of the status of coastal ecosystems. To understand the processes occurring within various coastal ecosystems and their role in biodiversity. To determine current trends in ecosystem status, catering to the prediction of future trends and facilitating effective management decision-making.
Assessment and monitoring of exploited species, and key, vulnerable, threatened and introduced species	To conduct comprehensive assessments of the status of exploited species, and key, vulnerable and threatened species. To understand the impact, if any, of introduced species on native biodiversity. To determine current patterns and trends within various stocks, catering to the prediction of future trends and facilitating effective management decision-making.
Assessment and monitoring of coastal processes	To understand the role of coastal processes and how they impact on aspects such as beach dynamics, recruitment patterns of species with pelagic stages in their life cycles, coral reef structure, mangrove and seagrass productivity and upwelling events.
Assessment and monitoring of socio-economic factors	To identify socio-economic indicators relating to the health of coastal ecosystems. To identify socio-economic indicators relating to the status of exploited species, and key, vulnerable, threatened and introduced species.
Data management	To facilitate national capacity building for biodiversity data management and exchange.

2.3.2 Offshore systems

Target area	Priority research areas
Assessment	To determine the extent of offshore ecosystems, such as offshore

and monitoring of ecosystems	banks, within Saint Lucia's EEZ, using remote sensing and GIS. To develop an inventory of biodiversity existing within these systems. To establish benchmarks using traditional and historical information. To understand the processes occurring in offshore waters and their role in biodiversity. To understand current trends and predict future trends for effective management decision-making.
Assessment and monitoring of exploited species, and key, vulnerable and threatened species	To collaborate with relevant agencies (national and regional) to facilitate comprehensive assessments of shared stocks as these relate to exploited species, and key, vulnerable and threatened species. To collaborate with relevant agencies to determine current patterns and trends within various shared stocks, catering to the prediction of future trends and facilitating effective management decision-making at the national and regional levels.
Assessment and monitoring of socio-economic factors	To collaborate with relevant agencies (national and regional) in identifying socio-economic indicators that would relate to the status of shared stocks.
Data management	To facilitate national capacity building for biodiversity data management and exchange in support of the management of shared stocks.

2.4 Freshwater Biodiversity

Target Area (Goal)	SPECIFIC ACTIVITIES
Promoting Integrated Water Resources Management	• To develop an overall strategy for the sustainable use of water resources. • To formulate research and development programs (water quality/quantity monitoring, forecasting technology. • To realign national standards and guidelines in the context of national legislation and commitment to relevant international conventions, treaties, accords etc.
Improving the water resources information base	• To monitor water quality and quantity. • To evaluate the total economic value of the resources and aquatic ecosystems or watersheds. • To estimate water availability, use and loss (forecasting included). • To sustain assessments of climate and hydrological data. • To develop comprehensive Decision Support Systems

	(DSS) based on reliable information & technology to support data exchange representing either impacts on water resources or use and availability of water resources.
Promoting water and ecosystem conservation	• To allocate and acquire where necessary areas for the conservation and protection of water supplies. • To restore &/rehabilitate critical watersheds. • To develop and comply where existing with watershed management plans. • To undertake economic valuation of strategic or unique natural ecosystems. • To design conservation programmes to reflect the needs and involvement of the local communities that depend on them. • To develop water abstraction limits to satisfy ecosystem requirements.
Integrate Development with Ecosystem Conservation	• To establish institutional mechanisms to ensure adequate data collection and monitoring systems to inform decision-making. • To promote sustained community participation in the management of water resources.
Integrate relevant departments, cooperation of existing institutes and agencies.	• To utilize international funding mechanisms, private sector, international development agencies, and national agencies to integrate departments.

3.0 GUIDELINES AND APPROVAL PROCESS FOR THE CONDUCT OF RESEARCH IN ST. LUCIA

Requirements

The following are requirements for conducting research in Saint Lucia:

- The researcher(s) must comply with local and international law, including the Fisheries Act, CITES, the International Trade in Wild Fauna and Flora Act, the Intellectual Property Act and the Immigration Act, the Biodiversity Act when enacted, Convention on Biological Biodiversity, Basel Convention on the control of Transboundary Movements of Hazardous Wastes, Convention for the Protection and Development of the Marine Environment of the Wider Caribbean 1983, Protocol Concerning Specially Protected Areas and Wildlife to the Convention for the Protection and Development of the Marine Wildlife of the Wider Caribbean Region 1990.

- The researcher must apply (see Annex1 for application form) to the Minister with responsibility for the area of research being proposed. The application should comprise, the completed form, a cover letter requesting permission to conduct research, and a copy of the detailed research proposal.

- The form and proposal will be reviewed by a team consisting of relevant agencies and experts in the area of research and any concerns arising must be addressed by the researcher. Issues to be addressed on the application form should include the following:

1. Name of Research Institution / Name of Research Partners /Local Partners

a) Please provide names and contact details
b) Please provide details and a copy of any relevant approvals from the applicant's research institute. Eg. Ethics committee approval etc.

2. Nature of the Research Proposal

a) Briefly outline the objectives of the research
b) Is the research proposal undertaken in cooperation with a local agency? If so, who? (Please attach a letter of support)
c) Attach a map showing detailed locations (including co-ordinates) of study area and/or sample sites for the proposed research.
d) Project timeline. Should provide a matrix of tasks and approximate date to commence and conclude research.
e) Is there any product or service to be developed from the research? If so, please give an indication.

3. Project Methodology
Include a detailed outline of the project methodology including:
a) A list of dates and times when access is required for fieldwork.
b) Indicate the number and types of vehicles, plant and equipment to be used.
c) Is any follow up work expected? If so, when? (approximate dates)

4. Funding and Support For the Project
a) How is the project to be funded? Include a list of all organizations and individuals that are funding the project, or providing non-financial support for the project, and the nature of that contribution. Give the name of the contact person in each organization.
b) Are there any conditions attached to the project funding agreements which purport to assign intellectual property or other ownership of material/ research outcomes? If so, what?
c) Should include letter of support from educational institution or relevant agency
d) Detail on prior informed consent question should be included in this section

5. Benefits To St. Lucia
a) If the Government of St. Lucia is not a partner in, or beneficiary of, the research, how will the people and government of St. Lucia be compensated for the use of their land, waters, knowledge and/or services?
b) What are the opportunities for local persons to participate in the research program as informants, workers, guides.
c) Indicate how you will involve related local government agencies in the research. Detail mechanisms for capacity building of technical personnel.
d) What about prior informed consent of communities where the research is being done? What about benefit sharing issues from the research? What about capacity building from the research?

6. Personnel
a) Include a list of the names and positions of all people requiring access to the study area.
b) Include the approximate dates when each of these people requires access.

7. Publication
a) A report of the project, together with any other reports or results arising from the project, whether published or unpublished, will be required by the MAFF. The MAFF generally expects researchers to agree to provide a free copy of any report, thesis, article or book etc. to the NLC library. An agency in MALFF or any local agency or person that was assisting in the

project should be included as authors of the publication. A copy of the results of the research should also be presented to the relevant department.
b) To whom will the results be available if not published? (MALFF reserves the right to include any document produced on biodiversity in its document database on its biodiversity website)
c) Advise if it is proposed to make the results of the research available, in a manner readily understandable fashion, to the layperson
d) There should be a presentation of the results orally and written before the end of the project cycle to relevant stakeholders.

8. Intellectual Property

a) Will the project seek to utilize local indigenous knowledge? If so, what arrangements have been made to protect indigenous intellectual property?
b) Ownership of indigenous intellectual property, including techniques used and developed, should be vested in the local communities.
c) Does the research intend to utilize plants or wildlife, or their genetic materials? If so, what benefit sharing arrangements, between the researchers and traditional owners, are proposed for their use?

9. Proposals for Minimizing Environmental Impact

a) Outline the extent to which the research proposal may affect the physical environment within the research area.
b) How are these effects, if any, to be ameliorated?
c) Does the project involve the use of firearms, or poisons? If so how?
Please note that vehicle wash down prior to entry is required and when travelling from weed-infested areas to non-infested areas or from GM areas to non GM ones or pest infested areas to non-pest infested ones.

10. References

a) All literary (published and non-published) and verbal material used in producing the results of the research should be cited in the published document.

- Once the review is completed, and the proposal has been revised accordingly, the researcher may be granted permission (in writing) by the relevant Minister or his designated officer/authority with responsibility for the area of research being proposed (or his assignee), to conduct the research.

- Before commencing research activities, the researcher must enter into a written agreement with the Government of Saint Lucia. This contract may contain general conditions governing research activities. However, specific conditions relating to the proposed research should be attached before the contract is signed by all Parties.

- If the research proposal does not receive favourable consideration, the applicant should receive a response (in writing), informing them that the proposal was not approved.

- The researcher should submit, upon completion of the research activity, or at regular intervals in the case of on-going research, a brief report on research activities carried out and any preliminary findings.

- Upon completion of the research, the research must submit to the relevant authority, copies of all reports and publications produced. This should include any future publications arising from the results of the research.

- Approval of research requests may take up to 6 weeks (30 days) to obtain. Therefore, please submit all necessary documentation in a timely manner.

- For additional information, please visit the biodiversity website at www.slubiodiv.org or call the biodiversity office at 758-468-4122/27, e-mail : biodivproject@slubiodiv.org or fax at 758-4532035

ANNEX 1: RESEARCH/SURVEY APPLICATION FORM

Section I. The purpose of this document is to ask questions of, researchers and their teams who wish to enter and remain on the island of St. Lucia or within the (EEZ) Exclusive Economic Zone, to conduct biodiversity related research or surveys. Please answer the questions in detail and provide information as outlined below.

Date _____
(Anticipated start and dates of the project)

Name _____

Full Mailing Address _____

_____

Telephone _____ Fax Number _____
(Office) (Mobile) (Home)

Email Address _____

Reason for permission request (please check applicable response):

Research Project □ Thesis □ Consulting Project □

Dissertation □ Other □ _____

Section II. Name of Research Institution / Name of Research Partners /Local Partners
a) Please provide names and contact details
b) Please provide details and a copy of any relevant approvals from the applicant's research institute. Eg. ethics committee approval etc
b) Is the research proposal undertaken in cooperation with a local agency? If so, attach letter of support)

Name of Research Institution _____

Contant Person _____

Address _____

_____

Telephone _____ Fax Number _____
(Office) (Mobile)

Email Address _____ Website _____

Name of Local Partner(s) _____

Address _____

Telephone _____ Email _____
(Office) (Mobile) (Fax)

Section III. Nature of the Research Proposal
a) Briefly outline the objectives of the research (attach research proposal)
c) Attach a map showing detailed locations (co-ordinates preferred) of study area and/or sample sites for the proposed research.

Objectives _____

_____

_____

_____

Study Area _____
(location of site/sites)

Coordinates _____

(INSERT MAP HERE)

Section IV. Project Methodology and technical feasibility
Include a detailed outline of the project methodology including:
a) A list of dates and times when access is required for fieldwork.
b) Indicate the number and types of vehicles, plant and equipment to be used.
c) Is any follow up work expected? If so, when? (approximate dates)

Proposed Methodology _____

_____

_____

_____

_____

Number of times access to the site is required for fieldwork _____

Proposed Dates _____

Means of Tansportation _____

Type of Vehicle _____

Plant/Equipment to be used _____

Is follow up work expected? Yes No Dates _____

Section V. Economic and financial feasibility-Research Funding
a) How is the project to be funded? Include a list of all organizations and individuals that are funding the project, or providing non-financial support for the project, and the nature of that contribution.
b) Are there any conditions attached to the project funding agreements which purport to assign intellectual property or other ownership of material/ research outcomes? If so, what?

How will the Research be Funded _____

_____

List all organisations/individuals providing financial and non-financial support and detail nature of contribution

Financial Contributors	*Nature of Contribution*	*Conditions*

Non-Financial Contributors	*Nature of Contribution*	*Conditions*

Detail IP Conditions if any _____

_____

Section VI. Benefits To St. Lucia/National priority or urgency
a) If the Government of St. Lucia is not a partners in, or beneficiary of, the research, how will the people and government of St. Lucia compensated for the use of their land, waters, knowledge and/or services?
b) Will there be opportunities for local persons to participate in the research program?
c) Indicate how you will involve related local government agencies in the research, should they wish to participate

Benefits to St. Lucia/National Priority _____

_____

_____

_____

Will there be opportunities for local persons to participate in research? Yes No

In what capacity *(please check applicable response):*

Informants □ Co-researchers □ Technicians □
Guides □ Taxi/Drivers □ Support services □
Laborers □ Water Taxi □ Translator services □
Search/capture of specimen □ Other □ _____
(Please explain)

Ways local government agencies can be involved _____

_____

Section VII. Personnel
a) Include a list of the names and positions of all people requiring access to the study area.
b) Include the approximate dates when each of these people requires access.

Number of persons requiring access to the study site for fieldwork _____
(Please fill in table below)

Name	*Position*	*Activities*	*Date*

Section VIII. Publication
a) A report of the project, together with any other reports or results arising from the project, whether published or unpublished, will be required by the MAFF. The MAFF generally expects researchers agree to provide a free copy of any report, thesis, article or book etc.
b) To whom will the results be available if not published?
c) Advise if it is proposed to make the results of the research available, in a manner readily understandable fashion, to the layperson

What is the output of this research ***(please check applicable response):***

Book □ Thesis □ Consultant's Report □

Poster □ Article □ Dissertation □

Other □ _____

(Please explain)

Section IX. Intellectual Property
a) Will the project seek to utilize local indigenous knowledge? If so, what arrangements have been made to protect indigenous intellectual property?
b) Where will ownership of indigenous intellectual property, including techniques used and developed, be vested?
c) Does the research intend to utilize plants or wildlife, or their genetic materials? If so, what benefit sharing arrangements, between the researchers and traditional owners, are proposed for their use?

Will the research utilize local indigenous knowledge? Yes No

What arrangements will protect local indigenous knowledge _____

_____

_____

Where will ownership of indigenous intellectual property, including techniques used and developed, be vested? _____

_____

_____

Will the research utilize local plants or wildlife or their genetic material? Yes No

What benefit sharing arrangement between researchers and traditional owners are proposed? _____

_____

_____

Section X. Proposals For Minimizing Environmental Impact
a) Outline the extent to which the research proposal may affect the physical environment within the research area.
b) How are these effects, if any, to be ameliorated?
c) Does the project involve the use of firearms, or poisons? If so how?
Please note that vehicle wash down prior to entry is required and when travelling from weed-infested areas to non-infested areas.

Indicate the ecosystems which are found in the vicinity of the project and their present conditions
(Please fill in table below)

Ecosystems	*ECOSYSTEM CONDITION*		
	Pristine	*Moderate Human Influence*	*Severe Human Influence*
Aquatic			
Terrestrial			
Wetland			
Coastal			
Maine			

Outline the extent to which this research project may affect the physical environment.
(Please fill in table below)

Environmental Component	***Beneficial***			***Insignificant***	***Adverse***			***Unknown***
	major	***moderate***	***minor***		***major***	***moderate***	***minor***	
Air Quality								
Noise and Vibration								
Streamflow & Drainage								
Water Quality								
Slope Stability & Erosion								
Rare& Endangered Species								
Protected Areas								
Pests and Disease Vectors								
Conflict with other users								
Public safety								
Issues of access								
Use of poison								
Capture of species								
IAS								
Hazardous material/waste								
Ramsar Site								

Outline strategies to be employed to minimize identified impacts from research activities

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Environmental Component	*Action to be taken to minimize impacts*
Air Quality	
Noise and Vibration	
Streamflow & Drainage	
Water Quality	
Slope Stability & Erosion	
Rare& Endangered Species	
Protected Areas	
Pests and Disease Vectors	
Conflict with other users	
Public safety	
Issues of access	
Use of poison	
Catch of species	
IAS	
Hazardous material/waste	
Ramsar site	

ANNEX 2:DRAFT AGREEMENT for the use and supply of biological material/genetic resources from the Biodiversity Unit, Ministry of Agriculture, Lands, Forestry and Fisheries, GOSL, St. Lucia

Upon receipt of this Agreement, **signed by Recipient below**, and because Recipient has agreed to comply with the terms and conditions set forth in this Agreement, **The GOSL** will supply to Recipient such of the Biological Material† requested by Recipient as is, in **The GOSL**'s sole judgment, reasonable and appropriate. Such Biological Material as is supplied to Recipient will be accompanied by a copy of this Agreement, on the reverse of which the Biological Material being supplied (the "Material") will be itemized.

The GOSL intends to honor the letter and spirit of the Convention on Biological Diversity in the use of its collections. Accordingly, the supply of any and all Biological Material by **The GOSL** to Recipient, including any Material to be supplied under this Agreement, will be subject to the following conditions:

1. Subject to Clauses 2 and 4 below, Recipient may use the Material and any progeny or Derivatives♦ thereof (such as modified or unmodified extracts) for non-commercial purposes only.

2. Recipient will provide the government and people of St. Lucia through **The GOSL** with a fair and equitable share of any benefits obtained by Recipient arising out of any utilization by Recipient of the Material or its progeny or Derivatives, including benefits such as research results and copies of publications. In addition, Recipient shall acknowledge **The GOSL** and, where determinable, the Country of Origin, in all research publications resulting from the use of the Material.

3. Under this Agreement, Recipient may not commercialize* the Material or any progeny or Derivatives thereof.

4. If at any point in the future Recipient wishes to commercialize the Material or its progeny or Derivatives, Recipient must first obtain the written permission of **The GOSL**. Any commercialization to which **The GOSL** agrees will be subject to a separate agreement between Recipient and **The GOSL** consistent with The draft biodiversity act which states that benefits be shared fairly and equitably with the Country of Origin‡ of the Material.

5. Recipient may not transfer the Material or any progeny or Derivatives thereof to any party other than Recipient or **The GOSL** without the prior informed consent in writing of **The GOSL**, and then only under a legally binding written agreement containing terms no less restrictive than those contained in this Agreement unless otherwise agreed in writing by **The GOSL**.

6. **The GOSL** makes no representation or warranty of any kind, either express or implied, (1) as to the identity, safety, merchantability or fitness for any particular purpose of the Material or its progeny or Derivatives or (2) that the Material provided to Recipient under this Agreement is or will remain free from any further obligation to obtain prior informed consent from, to share benefits with or to comply with restrictions on use imposed by the country of origin of the Material or any other country or regional economic integration organization. Recipient will indemnify **The GOSL** from any and all liability arising out of the Material or its progeny or Derivatives and their use.

7. This Agreement is governed by and shall be construed in accordance with St. Lucian law.

† *Biological material* includes, but is not limited to, plants, plant parts or propagation material (such as seeds, cuttings, roots, bulbs, corms or leaves), fungi or other fungal material, and any other material of plant, animal, fungal, microbial or other origin and the genetic resources contained therein; *Genetic resources* mean any material of plant, animal, fungal, microbial or other origin containing functional units of heredity of actual or potential value. This definition of genetic resources is adapted from the definitions of genetic materials and genetic resources set forth in Article 2 of the Convention on Biological Diversity.

* *Commercialization* means the use or exploitation of genetic resources, their progeny or Derivatives, with the object of, or resulting in, financial gain, and includes but is not limited to the following activities: sale, applying for, obtaining or transferring intellectual property rights or other tangible or intangible rights by sale or license or in any other manner, commencement of product development, conducting market research, and seeking premarket approval;

‡ *Country of origin* of genetic resources means the country which possesses those genetic resources in *in situ* conditions;

♦ *Derivatives* include, but are not limited to, modified or unmodified extracts and any compounds or chemical structures based on or derived from genetic resources and their progeny, including analogues;

DECLARATION

I understand that any Material supplied to me by The GOSL pursuant to this Agreement will be subject to, and I agree to comply with, the conditions above.

Name: *[name of individual]* _____

Title: *[title of individual]* _____

Date: _____/_____/_____

Address of Recipient: _____

_____

_____

_____

SIGNED BY: _____

for and on behalf of *[recipient institution]*

_____

SIGNED BY: _____

for and on behalf of **The GOSL**