



NATIONAL INVASIVE SPECIES STRATEGY

NATIONAL CONSULTATIONS

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Carried out under the project
***Mitigating the Threats of Invasive Alien Species in the
Insular Caribbean***

Project No. GFL / 2328 – 2713-4A86, GF-1030-09-03

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INVASIVE ALIEN SPECIES (IAS)

*... are species whose introduction
and/or spread outside their natural past
or present distribution
threatens biological diversity ...*



STOP THE SPREAD

of invasive alien species



Giant African Snail



Alien Iguanas



Pink Hibiscus Mealybug



Lionfish

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ACRONYMS

CEPA	Communications, Education and Public Awareness
DWCT	Durrell Wildlife Conservation Trust
IAS	Invasive Alien Species
MEAs	Multilateral Environmental Agreements
NGO	Non-governmental organisation
NISS	National Invasive Species Strategy
PPT	Power Point
SLASPA	Saint Lucia Air and Sea Ports Authority
SLNT	Saint Lucia National Trust
SLSWMA	Saint Lucia Solid Waste Management Authority

SUMMARY OF CONCLUSION AND RECOMMENDATIONS FROM NATIONAL CONSULTATIONS

1.0 INTRODUCTION

In June 2010, the Government of Saint Lucia embarked on the preparation of a National Invasive Species Strategy (NISS). The aims of this Strategy are to (i) minimize the harmful effects of invasive species on the environment, economy and society through coordination of efforts at all levels of Saint Lucian society; and (ii) facilitate cooperation within the Caribbean region to prevent the movement of invasive species. The NISS will also inform coherent policies, legislation, regulation and management of invasive species in Saint Lucia. Additionally, it will provide a communications strategy that will help raise public awareness so that all sectors of Saint Lucian society actively support efforts to minimise the risk and impact of invasives on Saint Lucia.

A series of background papers have been prepared to inform the NISS. Two of the papers review the status of aquatic and terrestrial IAS. Yet another report reviews the different IAS Pathways in Saint Lucia. The compendium also includes a Communications, Education, Public Awareness Strategy and Actions and a Critical Situation Analysis of (IAS Status and Management). The Report on Policy Gaps and Needs Analysis reviews the aforementioned reports and sets out to review the extent to which IAS prevention; eradication and control are fully incorporated in national legislation and in biodiversity and other relevant policies, strategies and action plans, consistent with international law.

Pursuant to the preparation of these Reports, the NISS Team held broad-based national consultations in Castries, Vieux Fort and Soufriere from the 5th to the 7th of January 2011. The purpose of these consultations was to solicit information and guidance for the formulation of the NISS. The consultations also sought to identify/confirm:

- ❖ The Challenges and Constraints to Invasive Species Management;
- ❖ Strategic responses to address the challenges and constraints to the problem of invasive species in Saint Lucia; and
- ❖ Roles and responsibilities of each of the agencies which are presently involved in or potentially can impact on or be impacted by Invasive Species.

The consultations were facilitated by two of the consultants and assisted by the Project Director and Project Coordinator.

The agenda is annexed as attachment 1 while the Participants List is annexed as attachment 2.

2. Consultations

Consultations were held in Castries, Vieux Fort and Soufriere. Although a total of 50 participants had confirmed their participation before the end of 2010, participation, especially at the Castries Consultation was very poor. Only 5 out of the 20 persons who had accepted the invitation were present. The agencies/sectors represented included Customs; DWCT (an International Conservation NGO); SLASPA; fishermen; farmers; and SLSWMA.

The low rate of participation was attributed to the time of year (two days after the first day at work) and to a lack of appreciation of the subject matter of invasive species. Nevertheless, the discussions were rich and provided the NISS Team with considerable information.

The consultations were designed to be very interactive with only one introductory PowerPoint presentation. This was followed by a series of working group sessions and presentations in plenary. Participants identified strategic interventions for the pre-identified management options: Prevention; Early detection and Eradication; Control and Mitigation; and Restoration. They also identified specific actions for each of the strategic management interventions and the agencies that should be responsible for such interventions.

The first group session was to respond to a series of questions:

- ❖ What do you know about IAS?
- ❖ How do they arrive in a country?
- ❖ Must they always be introduced by man?
- ❖ Are they only animals?
- ❖ Who/which agency is ultimately responsible for managing IAS in Saint Lucia?
- ❖ Is there a role for the public here?
- ❖ Are there any gaps and weaknesses in their management?
- ❖ What is the cause?
- ❖ Is eradication always necessary?

Each group was then requested to pick about 20 cards and to place the cards under each of the headings for strategic management, i.e. PREVENTION, EARLY DETECTION AND ERADICATION, CONTROL AND MITIGATION, and RESTORATION. Participants were also given empty cards to write interventions that were not provided for in the cards. Participants then re-organised the cards according to a number of cross cutting themes which spanned all the strategic management interventions.

2.1 Castries – January 5 2011

Subsequent to the PPT presentation on IAS, participants identified some of the IAS management challenges that they are familiar with:

- ❖ Martiniquan fishermen bring ashore, on Saint Lucia, fish wrapped in banana leaves. It is felt that these leaves may be infected with invasive micro-organisms.
- ❖ It is alleged that the African snail was brought in as a culinary speciality for French persons residing in Saint Lucia.
- ❖ The non-organic waste from cruise ships is not handled appropriately. The handlers of such wastes are often predisposed to allowing persons to scavenge such waste.
- ❖ Waste from yachts is not handled separately; it is thrown into the communal bins located in the marinas and is treated as ordinary household waste. Sometimes the waste from the yachts is found around the bins. Such waste is normally scavenged by stray animals in the marina.
- ❖ Some yachts bring wildlife and from time to time these animals escape from the yachts. It is alleged that the monkey(s) in Monchy had had originated from a yacht.
- ❖ Quarantine procedures are in place for animals arriving on board a yacht. Information is also provided by Customs Officials. Unfortunately, a number of the yachtees ignore these procedures and bring their animal on shore illegally. Some of them even leave behind their animals. Many yachtees also sail into the marina after the Customs officials have gone home and there is no record of whether they follow the follow Customs procedures.

The series of questions to ascertain the extent to which the participants were actually familiar with IAS issues are summarised in Table 1 below.

Table 1: Participants' Responses to Questions on IAS in Saint Lucia

Questions asked	Responses
How many of you have heard about IAS?	Only two out of five persons responded
Will IAS impact on the economy?	<ul style="list-style-type: none"> ❖ IAS are a major threat to biodiversity in Saint Lucia ❖ IAS could be managed to become an economic benefit – e.g. serving African Snails to French Tourists, or using the Lionfish, when it arrives in Saint Lucia, as fish protein ❖ Some species were brought in for agricultural and aquaculture purposes without first conducting the necessary risk assessments
What do you know about IAS?	<ul style="list-style-type: none"> ❖ They are non-native ❖ IAS can be plants, animals, micro-organisms ❖ They can be brought in through the pet trade; by foreign fishermen; food; and maritime waste. ❖ An example of food exports being a pathway of IAS is the case

Questions asked

Responses

Who should be responsible for IAS management in Saint Lucia?

of the import of Dominican grapefruit into Montserrat. The fruit were covered with fungus which was detrimental to the mountain frog population in Montserrat.

Is the nation informed and/or motivated to manage IAS?

- ❖ The Ministry of Agriculture. Persons from the Plant Quarantine office and the Vet Services should be permanently located in all ports of entry.
- ❖ Customs officials work closely with officers from the Ministry of Agriculture. The new Customs recruits are, however, not sufficiently knowledgeable of quarantine requirements. Many also feel that quarantine issues are beyond their terms of reference.
- ❖ SLASPA knows that it has an important role to play. There is however some uncertainty of this role because a number of agencies have conflicting mandates for the management of IAS.
- ❖ It may be useful for the establishment of a single agency with the necessary legal mandate to be exclusively responsible for the management of IAS in Saint Lucia.
- ❖ At the present time the focus is on managing the existing species of IAS through quarantine and phytosanitary measures. What is the mandate for new species that will not be covered under the quarantine and phytosanitary regulations?
- ❖ There is some confusion of the management of a species once it has entered into Saint Lucia. Should the agencies managing the control of the invasives also be responsible for managing early detection and eradication?
- ❖ The public needs to be notified of an impending threat of an IAS. Information on the IAS should be provided pictorially and through the use of billboards placed at strategic locations.
- ❖ There should be an incentive regime to encourage the public to report sightings of IAS.
- ❖ The public should be provided with all necessary information on where and how to report sightings. An IAS Hotline would be a good avenue.
- ❖ All agencies involved in the management of IAS must be coordinated and share common information platforms.

After these discussions, the participants were each asked to place cards under each of the headings for strategic management. The responses from the participants are presented in Table 2 below. Participants were also asked to identify those actions that are presently being implemented. These are marked with a red cross in Table 2. After the Table was populated, participants identified a number of cross-cutting issues and actions that fall under these cross-cutting issues for each of the strategic management interventions. Table 3 summarises the participants' identification of cross cutting themes for strategic management interventions.

Table 2: Identification of Specific Activities for each of the Strategic Management Responses: CASTRIES

PREVENTION	EARLY DETECTION AND RAPID RESPONSE	ERADICATION/CONTAINMENT	MITIGATION OF IMPACTS
Regulation of imports of native and non native plants and animals X	Incentives to encourage public involvement in reporting new species	Establish eradication protocols	Rehabilitation plans X
Screening of passengers X	Well publicised and easy to follow protocols for reporting	Well equipped laboratories	Clearly defined roles and responsibilities
Information boards at ports *	Single Agency for reporting sightings	Resources for implementation of programmes	Resources for implementation of programmes X
Quarantine and other screening/control facilities at ports	Hotline for reporting sightings	Sector Specific monitoring plans	Monitor impact of actions and adjust as necessary X
Control of waste management at ports	Water quality monitoring X	Public awareness and education X	Site specific public awareness
Public awareness and education	Sector specific rapid response mechanism and strategy	Improved lab. Facilities with sufficient staffing	Public awareness and education
Training of border control officers in existing and potential IAS	Inform public on pending IAS threats	Build capacity	Improved lab. Facilities with sufficient staffing
Raising awareness of IAS for border control officers	Improved lab. Facilities with sufficient staffing	Mobilise community responses/activities	Build capacity
Laws requiring cleaning of fish tackle and other equipment	Regional information exchange system	Sector specific Legal instruments for the control and management of IAS	Population management of threatened species (i.e over and above IAS control and mitigation) X
Management of the import of exotic species for the pet trade X	Sector specific Legal instruments for the control and management of IAS	Monitor impacts of control measures and adjust as necessary	Sector specific Legal instruments for the control and management of IAS
High fines for illegal introduction Of species	Training of port officers X	Build awareness of decision makers X	Build capacity
Control of the introduction of new species for aquaculture and agriculture purposes	Regional information exchange system	Incorporation of IAS into national plans and programmes for environmental conventions	ID sensitive areas X
Regional information exchange system	Monitor impacts of rapid responses	Broadly available list of potential IAS	Incorporation of IAS into sectoral plans
Incorporation of IAS into national plans and programmes for MEAS	Build Capacity	Modality for inter-agency coordination and collaboration	
Incorporation of IAS into sectoral plans	Contingency plans for IAS and known	Population management of threatened species X	

Risk analysis required for import of all non native species
 INCREASE BORDER SURVEILLANCE AND introduce high penalties for smuggling illegal plants and diseases
 Licensing and permit requirements s for animals and plants **X**
 Training of port officers
 Vigilance
 Build capacity within agencies to identify risks of exotic species – beyond native species and those on the CITIES list
 Harmonised regional actions for IAS prevention, control and eradication
 Maintain and disseminate records of pet imports
 Collect and disseminate information from port of entry
 Broadly circulated list of potential IAS
 Control of transboundary wastes

threatened species

Legend

Information boards should give general information on what passengers can and cannot bring; what are the hazards of bringing exotic species; the legislative regulations.

X Actions that re presently being undertaken

Table 3: CROSS CUTTING THEMES FOR STRATEGIC MANAGEMENT INTERVENTIONS: CASTRIES

CROSS CUTTING THEMES	PREVENTION	EARLY DETECTION AND RAPID RESPONSE	ERADICATION/ CONTAINMENT	MITIGATION OF IMPACTS
Public Awareness Campaigns	<ul style="list-style-type: none"> ❖ Information Boards at the Ports ❖ Information tools targeting local and foreign travellers ❖ Raising awareness of IAS for border control officers 			
Education and Sensitisation	<ul style="list-style-type: none"> ❖ Broadly circulated list of IAS 	<ul style="list-style-type: none"> ❖ Inform public on pending IAS threats 		
Research and Monitoring	<ul style="list-style-type: none"> ❖ Stricter research and regulations for introduction of exotic species for biological control ❖ Regional information exchange system ❖ Collect and disseminate information from port of entry 			
Training and Capacity Building	<ul style="list-style-type: none"> ❖ Training of port officers ❖ Training of border control officers in existing and potential IAS 			
Legal Instruments	<ul style="list-style-type: none"> ❖ Build capacity within agencies to identify risks of exotic species – beyond native species and those on the CITIES list ❖ Licensing and Permits for importing animals and plants ❖ Laws requiring cleaning of fish tackle and other equipment ❖ High fines for illegal introduction Of species ❖ Licensing and permit requirements s for animals and plants 			
International and regional collaboration	<ul style="list-style-type: none"> ❖ Harmonised regional actions for IAS prevention, control and eradication 			
Risk assessment	<ul style="list-style-type: none"> ❖ Risk analysis required for import of all non native species 			

CROSS CUTTING THEMES

PREVENTION

EARLY DETECTION AND RAPID RESPONSE

ERADICATION/CONTAINMENT

MITIGATION OF IMPACTS

Improve border control and containment measures

- ❖ Screening of passengers
- ❖ Quarantine and other screening/control facilities at ports
- ❖ Quarantine and other screening/control facilities at ports
- ❖ INCREASE BORDER SURVEILLANCE AND introduce high penalties for smuggling illegal plants and diseases

Management of IAS

- ❖ Management of discharge from maritime vessels
- ❖ Management of the import of exotic species for pet trade
- ❖ Vigilance
- ❖ Control of transboundary wastes

Mainstreaming IAS

- ❖ Incorporation of IAS into national plans and programmes for MEAS and into sectoral plans

2.2 Vieux Fort – January 6 2011

The Vieux Fort consultation was attended by 12 participants representing a number of sectors and agencies: SLNT; bee keepers; organic farmers; SLSWMA; development foundation; fishermen; marine terminals; and tourism. This diversity allowed for very interesting discussions. It also allowed for the participants to be divided into 3 groups.

Two important issues were raised during the preliminary discussions after the PPT presentation. Both dealt with the Ministry of Agriculture's refusal to permit the importation of Africanised Bees and Red Earthworms. The bee keepers were of the opinion that they should be allowed to import the Africanised Bees which were very productive; they did, however, also acknowledge that these bees are very aggressive and had the potential to wipe out local bee populations. They also constitute a public health and safety issue. The organic farmers want to use Red Worms for vermicomposting. This worm is a prolific breeder, and will compost organic matter in large amounts. These worms are however very prolific breeders and have the potential to replace local populations and to alter the ecosystem, i.e. in litter-dependent habitats - through fast decomposition.

The responses from the Groups are presented in Tables 4, 5 and 6 below.

Table 4: Group Responses

Questions	Group 1	Group 2	Group 3
What do you know about IAS?	IAS is any species that is non native; and was introduced either intentionally or accidentally	Can be animals, plants, and micro-organisms	Can be animals, plants and micro-organisms that are non native and that can reproduce in the new environment
How do they arrive in a country?	Through the 4Ts	Through the 4Ts and natural disasters	Through the 4Ts and natural disasters
Who/which agency is ultimately responsible for managing IAS in Saint Lucia?	Ministries of Agriculture, Health finance (Customs)	Ministry of Agriculture (Forestry, Fisheries, Plant Quarantine; Vet Services, Research) Ministry of Health Ministry of Communications and Works (SLASPA)	Ministry of Agriculture Ministry of Health including community nurses and doctors Ministry of Finance (Customs) Ministry of Communications and Works (SLASPA)
Is there a role for the public?	Do not smuggle in any plant or animal species without a permit or license; Declare any plant or animal that you bring into the country Report any sightings of species that you have not seen before in the area	Awareness of IAS Act as watchdogs	The public is not sensitised and does not know what to look for; thus people do not know what and how to report <i>There should be sensitisation and education of the extension officers so that they, in turn, can inform and educate their clients</i>
Are there any gaps and weaknesses in their management?	Slow responses to dealing with IAS when it has entered the country Lack of political will Lack of necessary resources	Lack of sensitisation Need for sensitisation workshops	Inadequate communication about IAS Poor public participation Limited research and monitoring Inadequate reporting and follow-up
Is eradication always necessary?	Yes	Although eradication should be the first effort, it is not always possible. Consequently Control and Containment is the better approach. In any case, there needs to be knowledge of the species in order to identify the management strategy.	Once a species enters a country it should be eradicated so that it does not spread.

Table 5: Identification of Specific Activities for each of the Strategic Management Responses

PREVENTION	EARLY DETECTION AND RAPID RESPONSE	ERADICATION/CONTAINMENT	MITIGATION OF IMPACTS
Screening of passengers	Incentives to encourage public involvement in reporting new species Well publicised and easy to follow protocols for reporting	Establish eradication/containment protocols	Rehabilitation plans
Information boards at ports – pictures of invasive species and messages; indicate the appropriate laws	Single Agency for reporting sightings	Well equipped laboratories	Training of point officers
Control of waste management at ports	Clearly defined roles and responsibilities	Public awareness and education	Resources for implementation of programmes Monitor impact of actions and adjust as necessary
Prevent discharge from maritime vessels Public awareness and education – IAS campaign	Hotline for reporting sightings	Training of point officers	Public awareness and education
Training of border control officers in existing and potential IAS	Water quality monitoring	Sector Specific monitoring plans: MONITOR agriculture, fisheries, industry, tourism and health Sector specific Legal instruments for the control and management of IAS	Educate government officials on IAS and how to manage IAS Laws requiring cleaning of fish tackle and other equipment
Raising awareness of IAS for border control officers	Sector specific rapid response mechanism and strategy	Sector specific Legal instruments for the control and management of IAS	Improve lab facilities with sufficient staffing
Laws requiring cleaning of fish tackle and other equipment	Improved lab. Facilities with sufficient staffing	Modality for inter-agency coordination and collaboration	Resources for implementing impact mitigation programmes
High fines for illegal introduction Of species	Resources for implementation of programmes	Educate government officials on IAS and how to manage IAS	Incorporation of IAS into national plans and programmes of various conventions
Stricter research and regulations for introduction of exotic species for biological control	Regional information exchange system	Clearly defined roles and responsibilities	Include IAS management in all management plans : agriculture, fisheries, forestry, health, tourism and education
Regional information exchange system	Sector specific Legal instruments for the control and management of IAS	Radio programmes on IAS management	
Incorporation of IAS into national plans and programmes	Training of port officers	Make money available to help farmer protect their farms from IAS	
Incorporation of IAS into sectoral plans	Incorporation of IAS into national plans	Make posters on IAS and place posters in public	
Risk analysis required for import of all			

non native species	and programmes for appropriate environmental conventions	places, schools, community centres, churches
Sector Specific legal instruments for the control of IAS	Broadly circulated list of potential IAS	Include IAS management in all sectoral management plans – agriculture, forestry, fisheries, health, education and tourism
Incorporation of IAS into national plans and programmes of international environmental conventions	Screening of passengers	Management of the import of exotic species for the pet trade
Place IAS posters in all villages	Establish eradication protocols	
Include IAS management in all sectoral management plans: agriculture, forestry, fisheries, health, tourism and education	Radio programmes on IAS management	
Include IAS in school curriculum – science, agriculture, geography		
Control of the introduction of new species for aquaculture and agriculture purposes	Public awareness and education	
Quarantine facilities at air and sea ports	Make money available for farmers to help farmers protect crops from IAS	
Educate government officials on IAS and how to manage IAS – customs, agriculture (quarantine, plant protection, vet officers)	Teach farmers how to indentify IAS at their farms	
Resources for implementation of programmes		
Notification of shipping lines of the restrictions of potential carriers of IAS – protocols for importation of used equipment		

Table 6: CROSS CUTTING THEMES FOR STRATEGIC MANAGEMENT INTERVENTIONS

CROSS CUTTING THEMES	PREVENTION	EARLY DETECTION AND RAPID RESPONSE	ERADICATION/ CONTAINMENT	MITIGATION OF IMPACTS	
LEGAL (LAWS, POLICIES AND RULES)	Laws requiring cleaning of fish tackle and other equipment	Sector specific legal instruments for the control and management of IAS	Sector specific legal instruments for the control and management of IAS	Include IAS management in all management plans – agriculture, forestry, fisheries, health, education and tourism	
	Restriction on the import of potential carriers (protocols)	Sector specific rapid response mechanisms and strategies	Include IAS management in all management plans – agriculture, forestry, fisheries, health, education and tourism		
	High fines for illegal introduction of IAS	Establish eradication protocols			
	Stop discharge from maritime vessels	Incorporation of IAS into national plans and programmes of appropriate environmental conventions			
	Management of the import of exotic species for the pet trade				
	Control of the introduction of new species for aquaculture and agriculture				
	Control of waste management at ports				
	Include IAS management in all management plans – agriculture, forestry, fisheries, health, education and tourism				
	Train Customs how to identify IAS	Training of point officers	Training of point officers		Training of point officers
	Public awareness and education	Teach farmers how to identify IAS on their farms			
TRAINING	Teach farmers to recognise farmers of IAS in their farms	Incorporation of IAS into national plans and programmes of appropriate			

CROSS CUTTING THEMES	PREVENTION	EARLY DETECTION AND RAPID RESPONSE	ERADICATION/ CONTAINMENT	MITIGATION OF IMPACTS
INTER-AGENCY COLLABORATION – REGIONAL AND INTERNATIONAL	<p>Teach IAS at school curriculum with agriculture, science and geography</p> <p>Educate government officials on IAS and how to manage IAS</p> <p>Teach fishermen how to recognise marine IAS</p> <p>Training of border control officials in existing and potential IAS</p> <p>Screening of passengers</p> <p>Stricter research and regulations for introduction of exotic species for biological control</p> <p>Incorporation of IAS into national plans and programmes of international environmental conventions</p>	<p>environmental conventions</p> <p>Single agency for reporting sightings</p>	<p>Regional information exchange system</p>	<p>Regional information exchange systems</p>
INTER-AGENCY COLLABORATION – NATIONAL	<p>Regulation of imports of native and non-native plants and animals</p> <p>Incorporation of IAS into national plans and programmes for environmental conventions</p>	<p>Clearly defined roles and responsibilities</p>	<p>Modality for interagency coordination and collaboration</p>	<p>Incorporation of IAS into national plans and programmes of various conventions</p>
AWARENESS AND EDUCATION	<p>Incorporation of IAS into sectoral plans</p> <p>Public awareness and education</p> <p>Information boards at ports</p>	<p>Public awareness and education</p> <p>Incentives to encourage public</p>	<p>Establish eradication/containment protocols</p>	<p>Public awareness and education</p>

CROSS CUTTING THEMES	PREVENTION	EARLY DETECTION AND RAPID RESPONSE	ERADICATION/ CONTAINMENT	MITIGATION OF IMPACTS
INFORMATION SHARING	Raising of knowledge IAS of Border Control officials	involvement in reporting new species	Make posters on IAS and place posters in public places, schools, community centres and churches	Monitoring
	Place IAS posters in all villages Regional Information Exchange System	Well publicised and easy to follow protocols for reporting	Public education and awareness Incorporation of IAS into Sectoral Plans	Educate government officials on IAS and how to manage IAS
	Information tools targeted at local and foreign travellers	Regional Information exchange system Hotline for reporting sightings Radio programmes on IAS management	Public education and awareness	
RESEARCH	Quarantine facilities at air and sea ports	Broadly circulated list of IAS Well equipped labs. Water quality monitoring	Well equipped labs	Improved lab facilities with sufficient staffing
	Risk analysis required for import of all non-native species		Sector specific monitoring plans: monitor agriculture, fisheries, industry, tourism and health	Rehabilitation Plans
FINANCE	Resources for implementation of programmes	Make money available to help farmers protect crops from IAS	Resources for eradication purposes	Improved lab facilities with sufficient staffing Resources for impact mitigation
		Resources for implementation of programmes		

2.3 Soufriere – January 7 2011

The consultation in Soufriere was attended by 8 participants representing: Customs, community development, dive operations, marine protected area; forestry and fishermen. After the PPT presentation, participants raised a number of issues:

- a. The impact of hurricane Tomas – did the hurricane blow in new species that have not been identified as yet
- b. Having learned from the iguana experience, people in Soufriere are educated and sensitised to IAS.
- c. Soufriere fishermen are concerned about the impending arrival of the lionfish. Fishermen have received notification of the lionfish from the Fisheries Department and they have been requested to report any sightings of the fish. The fishermen however want to know if they can go into the marine reserve areas, which are no take zones, to catch the lionfish.
- d. There is increased algal growth because of coral bleaching and increased sedimentation. There is therefore increased need to manage and safeguard the Soufriere marine management area.
- e. No measures have been put in place to mitigate the invasive species that come through ballast waters.
- f. The entire length of the Soufriere River is infested with Giant African Snails. The snails are also found in the Sulphur Springs. There are however no control and eradication programmes in place.
- g. There is an invasive sea grass in Soufriere which was introduced by a yacht. There are no programmes to control or eradicate this sea grass.
- h. The garbage and pets from yachts are also potential pathways for IAS in Soufriere. There are no programmes in place to control these pathways.
- i. Passengers from yachts entering the marina are not properly screened.

The participants' identification of activities for each of the management strategies, and the cross cutting issues in the management strategies are presented in Tables 7 and 8.

3.0 Analysis of Discussions in All Three Consultations

- a. Participants felt that the poor response to the consultation mirrored the lack of education and sensitisation of the various publics to IAS issues and the impacts of IAS on the economy, health and social systems in the country.
- b. It was clear that while there was some basic knowledge of IAS issues, there was much scope for embarking on a sustained CEPA on IAS. All the participants felt that the CEPA should be implemented immediately. The initial activities for the CEPA were identified as bill boards at ports of entry informing outgoing and incoming travellers to the laws and restrictions placed on the import of plants and animals; and posters in villages and towns.

- c. It was agreed that the general public should also have access to a Hotline for reporting sightings of IAS and that this Hotline should be handled by a single referral agency.
- d. At the present time efforts at managing IAS are more heavily focussed on eradication and containment. This means that the IAS management efforts, in the main, kick in after the entry of an IAS. Examples cited were the alien iguana in Soufriere, the Amblyomma Tick, the Pink Mealy Bug and the Coconut Mite and the Giant African Snail. Some of the eradication and control programmes were successful while others were not. Participants in Soufriere spoke of the Giant African Snail as an example of successful attempts at control and eradication. It was also noted that the control and eradication programmes were usually funded from outside sources.
- e. All participants agreed that the best management strategy would be prevention and this is reflected in the number and range of activities they identified for this management strategy as compared to activities for eradication/control and mitigation.
- f. There appears to be a good working relationship between some of the Customs Officials and the Officers from Quarantine and the Vet Services. This provides a good platform for strengthening the synergies between the agencies involved in border control. Customs Officers, however, felt that there were inadequate numbers of officers from the Quarantine and Vet services and as such their own work at monitoring for entries of IAS was hampered. This was particularly true at the marinas where the situation was further exacerbated by many of the yachts usually arriving after working hours.
- g. Junior Customs Officers are not provided sufficient training in how to identify IAS and the various laws that prevent their entry. Many of these officers also feel that preventing IAS from entering the country is not in their mandate. Thus, some of the participants recommended that the application of quarantine and phytosanitary regulations should be included in the Job descriptions of all Customs Officials as should be their need to work closely with the Officers from Quarantine and Vet Services. In pursuance of this, it was also recommended that appropriate agencies should develop protocols for the prevention of IAS and that Customs Officials and all other Officials at Ports of Entry should be trained in the use of these protocols.
- h. Another issue that the participants raised was that of inter-agency coordination: how do you create coordination among the agencies; who will be responsible for facilitating such coordination; and how do you ensure that there is communication and sharing of information between the agencies. It is against these issues that a recommendation was made for the creation of a single entity for the management of IAS. Recommendations were also made for identifying appropriate modalities and mechanisms for inter-agency and inter-sectoral coordination for IAS management in Saint Lucia.
- i. Participants felt that the lack of political will was an important factor impeding the allocation of sufficient resources for IAS management. To this end, participants

- recommended special sensitisation programmes for decision makers to alert them to the economic, health and other socio-cultural impacts of IAS.
- j. It was agreed that IAS should be incorporated into all sectoral plans. It was further agreed that instead of a single piece of legislation for the management of IAS, legal instruments for the control and management of IAS should be sector specific. This means that appropriate IAS legislation needs to be inserted into existing appropriate sectoral legislation and regulations.
 - k. All participants concurred on Saint Lucia's participation in a Regional Information Exchange System that would be a source of scientific information while also alerting members to the impending invasions.
 - l. IAS issues should be infused into schools curricula for agriculture, science and geography.
 - m. The matrices developed during the consultations reveal that there are a number of cross cutting themes that are applicable for all of the management strategies; and that some of the activities identified for each of these cross cutting themes are applicable to all the management strategies. Some of these common activities are:
 - ❖ Inclusion of IAS in all appropriate sectoral management plans in order to foster inter-agency collaboration in the management of IAS;
 - ❖ Training of all Point Officers – Border Control; marine terminals; marine police; etc.
 - ❖ Public awareness and education for various publics, including the provision of incentives for reporting sightings;
 - ❖ Well equipped and well resourced laboratories; and
 - ❖ Financial Resources

Table 7: Identification of Specific Activities for each of the Strategic Management Responses

PREVENTION	EARLY DETECTION AND RAPID RESPONSE	ERADICATION/ CONTAINMENT	MITIGATION OF IMPACTS
Training of Port officers	River water and marine water quality monitoring	Single agency for reporting sightings	Regional information exchange system
Screening of passengers	Incorporation of IAS into national plans and programmes for international environmental conventions	Establish eradication/containment protocols	Rehabilitation plans
Public education and awareness Posters on IAS in villages	Improved lab facilities with sufficient staffing Educate government officials on IAS and how to manage IAS	Resources for eradication purposes Educate government officials of IAS and how to manage IAS	Well equipped labs. Include IAS management in all management plans : agriculture, fisheries, health, education, tourism and forestry
Water quality monitoring – especially for aquariums	Sector specific legal instruments for the control and management of IAS	Public awareness and education	Improve IAS lab facilities with sufficient staffing
Resources for implementation of programmes	Sector specific rapid response mechanisms and strategies	Well equipped labs.	Training
Incorporation of IAS into national plans and programmes of international environmental conventions	Include IAS management in all management plans: agriculture, forestry, fisheries, health, tourism and education	Sector specific legal instruments for the control and management of IAS	Public awareness and education
Training of border control officers in existing and potential IAS	Well publicised and easy to follow protocols for reporting	Information boards at ports	Resources for impact mitigation
Regulation of exotic species for pet trade	Teach IAS at schools curriculum with agriculture, science and geography	Incorporation of IAS into sectoral plans	Compensation of livelihoods loss due to management policies
Stricter regulations and research for introduction of exotic species for biological control	Monitoring	Regional Information Exchange System	Adaptive mechanisms to mitigate socio-economic impacts
Research for implementation of programmes	Screening of passengers	Resources for implementation of Programmes	Incorporation of IAS into management plans and programmes for various conventions
Training of Custom Officers	Public awareness and education	Teach farmers how to identify IAS on farms	
Regulation of exotic species and aquarium trade	Hotline for reporting sightings	Rehabilitation plans	
Regional information exchange system	Make posters on IAS and place posters in public places, schools, community centres and	Biocontrol measures	

Laws requiring cleaning of fish tackle and other equipment	churches	
Information boards in ports	Make money available to help farmers protect crops from IAS	Sector specific legal instruments for the control and management of IAS
	Clearly defined roles and responsibilities	Incorporation of IAS into management plans and programmes for environmental conventions
Control of waste management at ports	Incentives to encourage public in reporting new species	River water and sea water monitoring in the field
Resources for implementation of programmes	Information tools targeting local and foreign travellers	Sector specific monitoring plans: fisheries, health tourism, agriculture
Quarantine facilities at air and sea ports	Radio programmes on IAS management	Resources for eradication purposes
Incorporation of IAS into sectoral plans	Regional Information exchange system	
Restrictions on the imports of potential carriers	Modality for inter-agency collaboration and coordination	
Risk analysis required for import of all non native species	Teach fishermen to recognise marine IAS	
Broadly circulated list of potential IAS	Teach farmers to recognise IAS on farms	
Control of the introduction of new species for aquaculture and agriculture purposes		
Stop discharge from maritime vessels		
High fines for the illegal introduction of IAS		
Raising of awareness of IAS for Border Control officers		
Educate government officials on IAS and how to manage IAS		
Sector specific legal instruments for the control and management of IAS		
Include IAS in all management plans: agriculture, fisheries, forestry, health, tourism and education		
Train customs how to...		

Table 8: Activities for each of the Cross-cutting Themes: Soufriere

RESEARCH	<ul style="list-style-type: none"> Well equipped labs BIOCONTROL MEASURES Water quality monitoring Sector specific monitoring Control of the introduction of new species for agriculture and aquaculture River and sea water monitoring in the field Monitoring
TRAINING	<ul style="list-style-type: none"> Well equipped labs. Training of point officers Training of border control officers in present and potential IAS Teach farmers how to identify potential IAS in their farms Training Train customs how to
FINANCE	<ul style="list-style-type: none"> Educate government officials on IAS and how to manage IAS Make money available for farmers to protect crops from IAS Resources for implementation of programmes Incentives to encourage public involvement in reporting new species Compensation of livelihoods lost due to management policies Resources for impact mitigation Adaptive mechanisms to mitigate socio-economic impacts Resources for eradication purposes
INTER-AGENCY COORDINATION – NATIONAL	<ul style="list-style-type: none"> Single agency for reporting sightings Clearly defined roles and responsibilities Sector specific rapid response, mechanism and strategies Incorporation of IAS into sectoral plans Modality for inter-agency coordination and collaboration Regional Information exchange system
INTER-AGENCY COORDINATION – INTERNATIONAL INFORMATION SHARING	<ul style="list-style-type: none"> Include IAS in all IAS managements
LEGAL	<ul style="list-style-type: none"> Screening of passengers Sector specific legal instruments for the control and management of IAS Management of the import of exotic species for the pet trade

AWARENESS AND EDUCATION

Laws requiring fish tackle and other equipment
High fines for illegal introduction of IAS
Quarantine facilities in Air and Sea Ports
Stricter research and regulations of introduction of exotic species for biological control
Stop discharge from marine vessels
Include IAS in all sectoral plans
Management of the impacts of exotic species for the pet trade
Hotline for reporting sightings
Include IAS in all management plans
Incorporation of IAS into national plans and programmes of international environmental conventions
Restrictions on the import of potential carriers
Establish eradication protocols
Regulation of imports of native and non-native plants and animals
Control of waste management at ports
Establish eradication or containment protocols
Rehabilitation plans
Broadly circulated list of potential IAS
Radio Programmes on IAS management
Information boards at ports
Public awareness and education
Educate government officials on IAS and how to manage IAS
Teach IAS in schools together with geography, agriculture and science
Raising awareness of IAS of border control officers
Place IAS posters in all villages
Teach fishermen to recognise IAS
Make posters on IAS and place posters in public places, schools, churches and community centres
Educate government officials on IAS and how to manage IAS

ATTACHMENT 1: CONSULTATION AGENDA

Time	Programme	Comments /Explanatory Notes
8:00 – 8:30		Registration
8:30 – 9:00	Welcome, purpose of workshop	... and introduction of participants and facilitators.
9:00 – 10:30 WORKING GROUP SESSION	Introduction to IAS) ppt presentation – IAS Pathways Policy Responses Participants identify IAS in Saint Lucia	Interactive presentation: includes questions to help assess capacities of audience. Audience will be invited to respond to questions included in the presentation: What do you know about IAS? List some IAS in Saint Lucia, the Caribbean region? How do they arrive in a country? Must they always be introduced by man? Are they only animals? Who/which agency is ultimately responsible for managing IAS in Saint Lucia? Is there a role for the public here? Are there any gaps and weaknesses in their management What is the cause? Is eradication always necessary?
10:30 – 10:45	Coffee Break	
10:45 - 11:45 WORKING GROUP SESSION	Participants identify strategic interventions to manage IAS in Saint Lucia; agencies who should be responsible for interventions	Helps participants to identify and discuss different approaches to use for managing IAS. Participants will be asked to identify strategic interventions for each of the policy responses – Prevention Early detection and Eradication Control and Mitigation Restoration
11:30 - 12:30	PRESENTATIONS IN PLENARY	Groups will present their recommendations
12:30 – 1:30	Lunch	
1:30 – 2:45 WORKING GROUP SESSION	Work Group Discussion on specific activities for each of the Strategic Interventions to deliver each of the programmes	Having identified strategic interventions for each of the programmes, each group will now be asked to identify specific activities for each of the strategic interventions identified for each of the policy responses.
2:45 – 3:15pm	PRESENTATIONS IN PLENARY	Presentation by Groups on the specific activities for each strategic intervention
3:15 – 4:00pm	PLENARY	FINALISE MATRIX OF STRATEGIC INTERVENTIONS FOR EACH POLICY RESPONSE
4:15 – 4:30		Wrap Up

ATTACHMENT 2: List of Participants
Mitigating the Threats of Invasive Alien Species in the Insular Caribbean

Actual Attendance and Participation at Workshop

5th January, 2011 - Pastoral Centre: CASTRIES

Name	Organisation	Telephone	Email
Benjamin Joseph	Babonneau Fair Trade Group	721-9149/458-9790	bneaufarmers@yahoo.com
Cassian Henry	St. Lucia Solid Waste Mgt Authority	453-2208/450-7070	sluswma@candw.lc
Ernest Inglis	Castries Fishermens' Co-operative	717-5007	
Gilbert Linor	Customs and Exercise Department	713-2799/468-4859	comptroller@customs.gov.lc
Matt Morton	Durrell Wildlife Conservation	719-8966	matthew.morton@durrel.org
Michael Blanchard	St. Lucia Air & Sea Ports Authority	452-2893/452-2894	

6th January, 2011 - Juliette's Lodge: VIEUX FORT

Name	Organisation	Telephone	Email
Anthony Sammie	St. Lucia National Trust - South	713-3235	mariaisland@candw.lc
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Joan Carasco	Laborie Development Foundation	455-9910	laborie.development@gmail.com
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Wlijah Charlemagne Sankofa Rainbow Roots Farm Limited 717-5261 eli_hailejah@hotmail.com

7th January, 2011 - Le Chaudière: SOUFRIERE

Name	Organisation	Telephone	Email
Comida Louisy	Action Adventure Divers	459-5599/485-1317 /717-4640	cnoblenat@hotmail.com
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Sherman Emmanuel	Customs Department	468-4860/285-2809	shermane@customs.gov.lc
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**Invasive Alien Species
“IAS”
Threatening Saint Lucia**



*National Stakeholder Consultation
November 2010*

Ulrike Krauss
Invasive Species Coordinator
Forestry Department
Ministry of Agriculture, Lands, Forestry and
Fisheries (MALFF)
Union

What are Invasive Alien Species?



Invasive Alien Species “IAS” are exotic (not St. Lucian) species, whose introduction and/or spread threaten biodiversity, livelihoods or health



- ***Invasive***: they harm other species by taking over their habitat
- ***Alien***: foreign, exotic, not native, not St. Lucian
- ***Species***: Any life form: animals, plants, germs, etc. They reproduce


Why are Alien Species often Invasive?

- Alien species arrive without the natural enemies (e.g. predators) they had at home
- They live and reproduce uncontrolled, e.g. feral cats
- Some species (alien or native) turn invasive because we change the environment, e.g. itch grass in agricultural and other deforested areas





How do IAS get into St. Lucia?

➤ Most IAS are brought by people, sometimes by accident ...



APHIS



How do IAS get into St. Lucia?


... and sometimes deliberate, either

- * with good intentions or
- * knowingly illegally

Water hyacinth



Tilapia



Giant African Snail "GAS"



Pathways: The infamous "4 Ts"

Tourism



Transport



Travel



With ever more aeroplanes taking to the skies, the risks of invasive species being carried along with them grows.


Trade



snails

Losses Caused by IAS

The global cost of IAS is estimated at US\$1.4 trillion per year (nearly 5% GDP) – and rising in times of globalization and climate change



African vervet monkey

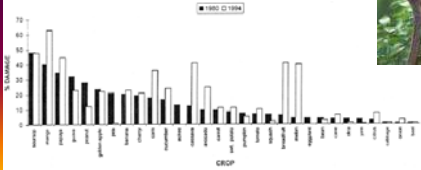



Fig. 2. The mean percentage damage by vervet monkeys to 30 crops in Barbados in 1982 and 1994.

Crop	1982 (%)	1994 (%)
Avocado	10	10
Banana	10	10
Cashew	10	10
Cassava	10	10
Cocoa	10	10
Custard apple	10	10
Guava	10	10
Jackfruit	10	10
Mango	10	10
Orange	10	10
Pineapple	10	10
Plantain	10	10
Starfruit	10	10
Tomato	10	10
Watermelon	10	10
Yam	10	10
Other	10	10


Unique St. Lucian Biodiversity Threatened by IAS




Some Damaging IAS in Saint Lucia




Indian mongoose



Varroa mite



Feral pigs



Cane toad

What can we do about IAS?

Prevention

Prevention is better than Cure !!

- Don't smuggle plant or animal material
- Don't keep (nor release!) exotic pets or fish
- Talk to your colleagues, friends and family about the risk
- Watch out for new IAS and call authorities

Pacific Lionfish



Frosty Pod Rot of Cocoa



Early Detection and Rapid Response *if "Plan A" Fails*

The sooner we detect and IAS, the better our chance to get rid of it !

- Watch out for new IAS and call authorities
- Don't move IAS within St. Lucia
- Maintain ecosystems intact, so IAS can't invade easily



Black Sigatoka
