



PROJECT DEVELOPMENT FACILITY

REQUEST FOR PDF BLOCK A FOR FULL-SIZED PROJECT

AGENCY'S PROJECT ID: (IF KNOWN)

GEFSEC PROJECT ID:

COUNTRY: Regional - The Bahamas; Cuba; Dominican Republic; Jamaica; St Lucia; Trinidad and Tobago (**Annex 1**)

COUNTRY ELIGIBILITY: The Bahamas: 03/09/93; Cuba: 08/03/94; Dominican Republic: 25/11/96; Jamaica: 06/01/95; St Lucia: 28/07/93; Trinidad and Tobago: 01/08/96.

PROJECT TITLE: Mitigating the Threats of Invasive Alien Species in the Insular Caribbean

GEF AGENCY: United Nations Environment Programme (UNEP)

OTHER EXECUTING AGENCY(IES): Centre for Applied Biosciences International (CABI), Caribbean and Latin America Regional Centre; National EAs: (see **Annex 2**)

DURATION: 6 months (FSP: 5 years, estimated)

GEF FOCAL AREA(S): Biodiversity

GEF OPERATIONAL PROGRAM(S): OP 1- Arid and Semi-Arid Zone Ecosystems; OP 2 – Coastal, Marine and Freshwater Ecosystems; OP 3 – Forest Ecosystems

GEF STRATEGIC PRIORITY(IES): Biodiversity Strategic Priority No 2 – ‘Mainstreaming Biodiversity in Production Landscapes and Sectors’ and Strategic Priority 4 – ‘Dissemination of Best Practices’

Invasive alien species pose a major threat to terrestrial and aquatic biodiversity in the insular Caribbean. By addressing root causes, and utilizing existing political-economic links, national strategies and subsequently a regional strategy will be developed. These will facilitate intra- and inter-country cooperation and the transfer / development of interventions and thereby make a major contribution to the conservation of significant island biodiversity.

FINANCING PLAN (US\$)	
GEF PROJECT	
Full Project (estimated)	5,000,000
PDF A (I)	25,000
PDF B (ESTIMATED)	450,000
SUB-TOTAL GEF	5,475,000
PDF A CO-FINANCING	
<i>National contributions (all in kind):</i>	
The Bahamas	2,000
Cuba	2,000
Dominican Republic	2,000
Jamaica (NEPA)	2,000
Jamaica (Min. of Env.)	2,000
St. Lucia	2,000
Trinidad and Tobago	2,000
<i>Other (in kind):</i>	
CABI	21,600
CARICOM	5,000
INIBAP	20,000
Univ of Florida/IFAS	7,000
The Nature Conservancy	10,000
CERMES	4,500
FAMU	12,000
<i>Other (cash):</i>	
US Dept. of Commerce-NOAA	6,000
US Dept. of State-BOIESA	25,000
Smithsonian	15,000
UNEP-CAR/RCU	8,000
SUB-TOTAL CO-FINANCING PDF A (II)	148,100
TOTAL PDF A FINANCING (I + II):	173,100

ESTIMATED STARTING DATE: PDF A, JUNE 2006; PDF B/PIPELINE ENTRY, JANUARY 2007;
FSP, EARLY 2008


RECORD OF ENDORSEMENT ON BEHALF OF THE GOVERNMENT:

	Date:
Mr Donald Cooper, GEF Operational Focal Point, Ministry of Health and Environment, The Bahamas	25 May 2005
Jorge Luis Fernandez Chamero, Director, International Co-operation Department, GEF Operational Focal Point, Republic of Cuba	30 June 2005
Lic. Amarilis Polonia, Directora Biodiversidad y Vida Silvestre, Secretaria del Estado de Medio Ambiente y Recursos Naturales, Dominican Republic	8 June 2005
Leonie Barnaby, Senior Director - Ministry of Land and Environment, Jamaica	5 August 2005
Marcia Philbert-Jules, Permanent Secretary, Ministry of Physical Development and Housing, St Lucia	2 June 2005
Dave McIntosh, Managing Director/Chief Executive Officer, Environmental Management Authority, Trinidad and Tobago	31 May 2005
<i>Additional:</i> Secretary General, Caribbean Community (CARICOM) Secretariat	6 June 2005
<i>Additional:</i> Caribbean Invasive Species Working Group (CISWG)	22 November 2005

This proposal has been prepared in accordance with GEF policies and procedures and meets the standards of the GEF Project Review Criteria for PDF Block A approval.

Signature:

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ACRONYMS

ACS	Association of Caribbean States
APHIS	Animal and Plant Health Inspection Service (USDA), Caribbean Region
BOIESA	Bureau of Oceans & International Environmental & Scientific Affairs (USA)
CABI	Centre for Applied Biosciences International
CARDI	Caribbean Agricultural Research and Development Institute
CAR-RCU	Caribbean Regional Co-ordinating Unit (facilitator of UNEP-CEP)
CARICOM	Caribbean Community
CARMABI	Caribbean Research and Management of Biodiversity, Curacao
CBD	Convention on Biological Diversity
CERMES	Centre for Resource Management and Environmental Studies (UWI, Barbados)
CFCs	Chlorofluorocarbons
CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement (France)
COTED	Council for Trade and Economic Development
CRISIS	Caribbean Regional Invasive Species Strategy
EMA	Environmental Management Authority, Trinidad and Tobago
FAO	Food and Agriculture Organisation of the UN, Caribbean Region
FAMU	Florida A&M University
FTAA	Free Trade Area of the Americas
GEF	Global Environment Facility
GEFSEC	Global Environment Facility Secretariat
GEF-CPP	GEF Country Partnership Programme
GISP	The Global Invasive Species Programme
GISIN	Global Invasive Species Information Network
IAS	Invasive alien species
IABIN	InterAmerican Biodiversity Information Network
IICA	Inter-American Institute for Cooperation in Agriculture

IMO	International Maritime Organization
IUCN	The World Conservation Union
MAFF	Ministry of Agriculture, Forestry and Fisheries, St. Lucia
MALMR	Ministry of Agriculture, Land and Marine Resources, Trinidad and Tobago
NBSAP(s)	National Biodiversity Strategy(s) and Action Plan(s)
NEPA	National Environment and Planning Agency, Jamaica
NPCDD	National Programme to Combat Desertification and Drought
NOAA	National Oceanic and Atmospheric Administration (USA)
OECS	Organization of Eastern Caribbean States
PAHO	PAN American Health Organization
PDF A / B	Project Development Fund A or B
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SIDS	Small Island Developing States
SPS	Sanitary and phytosanitary
TNC	The Nature Conservancy
UF	University of Florida
UNEP	United Nations Environment Programme
UNEP-CEP	UNEP Caribbean Environmental Programme
UNEP-CAR/RCU	UNEP Regional Coordinating Unit (Jamaica)
UNFCCC	United Nations Framework Convention on Climate Change
USDA APHIS	United States Department of Agriculture - Animal & Plant Health Inspection Service
UWI	University of the West Indies
WTO	World Trade Organisation
WW2BW	White Water to Blue Water

PART I: PROJECT INFORMATION

1. PROJECT LINKAGE TO NATIONAL PRIORITIES, ACTION PLANS AND PROGRAMMES

1.1 International framework and linkages

A number of countries in the Caribbean region (including those listed in this proposal) have ratified the Convention on Biological Diversity (CBD) and are committed to fulfilling obligations under Article 8(h) which calls on Parties to “prevent the introduction of, control, or eradicate those alien species (= invasive alien species - IAS) which threaten ecosystems, habitats, or species.” The respective Caribbean countries have identified invasive species as a national issue with respect to the conservation of biological diversity. Moreover, the proposed project is consistent with the priorities outlined in various national documents including the NBSAPs, seeking sustainable management of the environment.

In particular, the proposed project will, for the Caribbean region, address a number of recommendations arising from the CBD Conference of Parties (COP), as follows:

COP 5 (2000) -

1. Decision V/8, urged Parties to give priority to the development and implementation of IAS strategies and action plans.

COP 6 (2002) -

2. Decision VI/23 urged governments to, through, the development of national biodiversity plans, build national capacities to address IAS in accordance with the 15 Guiding Principles (CBD Decision VI/23 - see references in this document).
3. Identify national needs and priorities.
4. Create mechanisms to coordinate national programmes.
5. Review, in light of the Guiding Principles, relevant policies, legislation and institutions to identify gaps, inconsistencies, and, as appropriate, adjust or develop policies, legislation and institutions.
6. Enhance cooperation between various sectors, including the private sector that might provide pathways or vectors for the unintended transfer of invasive alien species, in order to improve prevention, early detection, and/or control of invasive alien species, and in particular, ensure communication between focal points of respective relevant international instruments.
7. Promote awareness of the threats to biological diversity and related ecosystem goods and services posed by IAS and of the means to address such threats, among policy makers at all levels of government, and in the private sector; quarantine, customs and other border officials; and the general public.
8. Facilitate the involvement of all stakeholder groups, including in particular local and indigenous communities, and the private sector, as well as all levels of government, in national invasive alien species strategies and action plans, and in decisions related to the use of alien species that may be invasive.
9. Collaborate with trading partners and neighbouring countries, regionally, and with other countries, as appropriate, in order to address threats of invasive alien species to biological

diversity in ecosystems that cross international boundaries, to migratory species, and to address matters of common interest.

More generally, the project is guided and will engage with other guidance from the CBD COP meetings; this guidance is summarized in **Annex 3**.

In all the proposed project countries the need for commitment and collaboration between the Government, community-based and environmental organizations, the private sector and civil society has been identified as a priority area for protection and sustainable use of biological diversity.

The Council for Trade and Economic Development (COTED) of the Caribbean Community (CARICOM) has in recent meetings also re-affirmed the importance of IAS. Therefore either by direct identification or by implication the issue of IAS prevention or management is seen as a major factor in the development of sustainable environmental management practices and management of biological diversity. The proposed project is also consistent with priorities outlined in the Small Island Developing States (SIDs) initiative (Barbados Plan and its recent iteration in Mauritius).

The project will utilize results from relevant previous, on-going, or new international projects and programmes. Of particular importance are:

- Global Invasive Species Programme (GISP - see **Annex 4**) projects. The GISP partnership has coordinated and managed a number of projects, which are relevant to the proposed project. A highly relevant project is the UNEP/GEF MSP entitled “Development of Best Practices and Dissemination of Lessons Learned for Dealing with the Global Problem of Alien Species that Threaten Biological Diversity”. This project (coordinated by GISP - see below) produced the following best practice guidelines: Assessment of Best Management Practices, Economics of Invasives, Education, A Guide to Legal and Institutional Frameworks on Invasive Alien Species, Risk Assessment, Pathways/Vectors of Invasives, Global Change & Invasives, Early Warning Systems. These products and other information were then integrated into the ‘Toolkit for Best Prevention and Management Practices of Invasive Alien Species’.
- The GEF/UNDP/IMO “Global Ballast Water Management Programme (GloBallast)”. This project included six pilot countries: Brazil, China, India, Iran, South Africa and Ukraine.

1.2 Regional and National frameworks

Recent experiences with several major invasive pests have served to emphasize the regional nature of these threats. A region-wide response to the invasive species problem is therefore essential. In response to this need, the Caribbean Invasive Species Working Group (CISWG) was formed in 2003 as an ad-hoc grouping of national and regional partners including CABI and CARICOM (details in Section 5). In 2005, COTED recognized, and mandated CISWG to facilitate the development and implementation of strategies for IAS management. The proposed project has been endorsed by CISWG as part of its activities.

Of the six countries listed in this proposal, five have completed their National Biodiversity Strategies and Action Plans (NBSAPs): The Bahamas, Cuba, Jamaica, St. Lucia and Trinidad and Tobago. In addition, The Bahamas, Jamaica and Dominican Republic have prepared a specific list and prioritisation of Invasive Alien Species.

The Bahamas:

The Bahamas identifies IAS as one of the five major human-related activities that destroy biological diversity. The control of alien and invasive species is among the prime goals stated in the NBSAP (BEST Commission, 1999), in terms of:

- Impacts on agriculture and mariculture
- Role of tourism – cruise ship sector:
 - As a potential threat to fisheries and human health (via introduction of undesirable viruses or bacteria) due to lack of shore-based sewerage disposal
- Via discarded ballast water from ships and the introduction of alien marine species
- Demand for, and smuggling of, exotic pets and ornamental plants

The NBSAP recommends the development of protocols for controlling importation and evaluation of alien and invasive species to include:

- risk analysis of alien species
- management of useful alien species
- contingency plans for the control and eradication of IAS

In addition, The Bahamas has a National Invasive Species Strategy (BEST Commission, 2003), which recognizes the negative environmental and economic impacts of IAS spelling out the following in particular.

- Loss of genetic diversity
- Competition with native species resulting in their loss or displacement
- Introduction of diseases
- Change in the physical properties of the environment

The proposed project will contribute to the following recommendations made specifically by the national strategy:

- Building awareness through the development of a database on invasive species listing for each species characteristics, visual images, associated risks and management mechanisms
- Providing training in identification, handling, holding and disposal of invasive species and, if relevant, methods of risk assessment and management for customs officers, agricultural and fisheries officers as well as enforcement officers.
- Providing training for officers in national mechanisms coordinating action in the field regarding invasive species
- Identifying specific sites for regular monitoring such as public areas, national parks, protected areas, freshwater sources and field stations
- Enforcing and, where deficient, amending existing legislation relating to the management and control of alien species; drafting new, as well as amending existing, legislation specific to management and control of invasive alien species

- Following the sequenced approach to invasive species control of a) preventing entry of potential invasives, b) preventing establishment, c) eradication, d) consider containment and long-term control measures
- Listing priority species for eradication and control
- The government to accept and implement the invasive species policy and take specific actions as outlined in the national strategy and
- Specific actions to be taken by individual sectors identified in the strategy
- A commitment by the government to give and seek funding for a sustained management programme of invasive species
- The Bahamas to seek to establish a comprehensive infrastructure for the management of IAS in compliance with its international obligations such as for example the CBD, Article 8(h) (1992); Ramsar Convention, Resolution VII/14 (1971).

More importantly, the project will further build on this strategy using it as a model for other Caribbean countries.

Cuba:

UNEP/GEF has funded an Enabling Activity for Cuba aimed at developing a National Biodiversity Strategy and Action plan. Key elements in the NPSAP, related to IAS, are as follows:

- Need for a better understanding and awareness of the negative impacts of deliberate introductions that decimate or destroy native species and become invasive (e.g. the fast-growing shrub *Dichrostachys cinerea* (Marabu) and fish (Tilapia) species or tourism attractions (monkeys))
- Among the proposed actions/activities, the following deal with management of IAS:
 - Implementation of mitigating measures to overcome the negative impacts of accidental and deliberate introductions
 - Incorporation of elements of the NBSAP into legislation related to social and economic sectors
 - Undertaking of studies on the environmental impacts of the introduced and invasive species on the biodiversity

Indeed, since the mid-1990s, Cuban scientists from CENSA (Centro Nacional de Sanidad Agropecuaria; affiliated with the Ministerio de Educación Superior (MES)), La Habana and INISAV (Instituto de Investigaciones de Sanidad Vegetal; affiliated with the Ministerio de la Agricultura (MINAGRI)), La Habana, as well as from the Universidad Central de Las Villas, Trinidad, Sancti Spiritus, have sought collaboration with CABI and other partners regarding the management of IAS, in particular of Marabu, posing a threat to natural habitats, and the grassy weed *Caminadora (Rottboellia cochinchinensis)*, constituting a constraint to agricultural production. Effective biological control agents have been identified for both species. However, attempts at collaboration stalled mainly as a result of lack of funds and logistical constraints, in particular lack of coordination among the various agencies involved. The proposed project will provide the necessary support and coordination to address the environmental and economic issues caused by these two exotic invaders.

Furthermore, the proposed project will be able to draw on the outputs of the two GEF-funded projects undertaken in Cuba entitled “Protecting Biodiversity and Establishing Sustainable Development in the Sabana-Camaguey Region” and “Priority Actions to Consolidate Biodiversity Protection in the Sabana-Camaguey Ecosystem”. The Sabana-Camaguey region harbours marine and terrestrial biodiversity of global significance and the data obtained through biodiversity surveys undertaken and ecological inventories compiled within the frame of these two projects will be of particular relevance to the proposed project.

Deforestation / desertification and drought can exacerbate the problem of IAS due to weakening ecosystems integrity, making them more vulnerable to alien invasions. The proposed project will thus link in on IAS issues with the GEF project “Supporting Implementation of the Cuban National Programme to Combat Desertification and Drought (NPCDD)” The Government of Cuba is seeking to develop a GEF Country Programme Partnership (GEF-CPP) to strengthen the implementation of the ten year NPCDD with two main objectives: (1) to provide support for mainstreaming Sustainable Land Management (SLM) principles into national, regional and local planning frameworks and for building capacities, and (2) to implement site-specific interventions to demonstrate practices for the prevention of degradation and the conservation and rehabilitation of ecosystem integrity in three areas: (i) the southern plains of Pinar del Río and the plains of Habana Matanzas in the West; (ii) the north of Villa Clara and Sancti Spiritus in Central Cuba; (iii) the Maisí Guantánamo coastal strip and Cauto watershed in the East.

Dominican Republic:

The following is based on Dominican Republic’s response to the questionnaire for “Thematic Report on IAS” based on Article (8h): (<http://www.biodiv.org/doc/world/do/do-nr-ais-es.doc>):

- Overall priority for IAS is rated as medium for fauna and low for flora
- Restricted availability of resources towards fulfilment of necessary obligations and recommendations
- Only economically important or problem causing species have thus far been identified and evaluated
- There are no national policies in place in relation to IAS
- There are very limited measures in place to prevent the introduction of alien species and to control or eradicate those which threaten ecosystems, habitats or indigenous species
- There is limited collaboration in the preparation of projects at various levels (national, sub regional, regional, and international) to address the rise of exotic species
- The national strategy and action plan is considering the question of exotic species
- No monograph presentations have addressed the issue of preventing the introduction as well as control and eradication of exotic species which threaten ecosystems, habitats or species, in response to the call of the 4th meeting of the Órgano Subsidiario de Asesoramiento Científico, Técnico y Tecnológico (OSACTT) of IUCN (21-25 June 1999, Montreal, Canada) (http://www.iucn.org/themes/pbia/wl/docs/biodiversity/sbstta4/pow_s.pdf). However, this is a topic under consideration, as there is need for a better understanding of the

questions regarding exotic species. Lack of funds is one of the reasons for the non-production of the respective monographs on this topic.

- It is recognized that exotic invasive species known in neighbouring or biogeographically similar countries constitute a problem in the Dominican Republic

Links with other relevant national projects within the Dominican Republic include:

A GEF-funded project entitled “Biodiversity Conservation and Management in the Coastal Zone of the Dominican Republic” (1992-1998). This project has established a research programme to support biodiversity conservation and continuous long-term environmental monitoring, initiated the preparation of regional management plans for three pilot areas and worked on strengthening the government, NGO’s, universities and the private sector in managing the coastal zone. The proposed project will draw on these capacities and structures to provide continuity and to deliver its planned outputs.

The recently endorsed GEF project entitled “Demonstrating Sustainable Land Management in the Upper Sabana Yegua Watershed System” will facilitate SLM in the Upper Sabana Yegua through the creation of policies, practices, and incentives for financially and environmentally sound activities in harmony with the recommended land use and bio-climatic conditions of the ecosystem. The GEF actions will remove the present barriers and establish the framework and mechanisms for effective long-term management, financing, and technical development for RDT-Sabana Yegua. The proposed project will identify potential areas for linking IAS issues with this initiative.

Jamaica:

The Jamaican NBSAP recognizes the severe impacts that have resulted from introductions of alien species on ecosystems, habitats and native species (NEPA, 2003). Among the goals of the NBSAP are the development of plans to undertake research and assessments of introduced species with a view to identifying appropriate measures to reduce further impacts as well as developing guidelines for the eradication and monitoring of alien invasive species. The need for risk assessments prior to granting of import permits as well as the development of contingency plans and action programmes to ensure rapid eradication of newly established and undesirable alien species has been highlighted by authorities in Jamaica. The preparation of an IAS management strategy has been listed as one of the highest priorities. Activities under this component will therefore provide a relevant base for the proposed project to build upon.

St. Lucia:

In 1995, the UN System-Wide Earthwatch website (<http://islands.unep.ch/ISX.htm>) reported four species as being ‘invasive’ in St. Lucia. By 2003, the number rose to 37 species, four of which were considered as ‘naturalized’ (Kairo *et al.*, 2003a). The numbers have continued to rise, with the latest introductions being the chilli thrips, *Scirtothrips dorsalis*, and the coconut mite, *Raoiella indica*, two agricultural commodities of importance to the economy of St. Lucia. The Ministry of Agriculture, Forestry and Fisheries (MAFF) has the mandate for plant and animal surveillance aimed at prevention of the entry of harmful pests and diseases (=IAS) and

management of those of economic importance. St. Lucia's NBSAP (Government of St. Lucia and UNEP, 2000) recommends that policy-making processes at all levels contribute to the integrity of the country's rich biological diversity to ensure that this is maintained and, whenever possible, restored.

In order to achieve its vision and address the issues that are likely to adversely impact on biodiversity, the National Steering Committee, guided by recommendations arising out of the NBSAP consultations, has determined that local capacity needs to be strengthened in order to facilitate the programmes outlined in the NBSAP. It is recognized that human resources, supported by appropriate information, tools and infrastructure need to be enhanced to facilitate full national involvement at all stages and levels of conservation, sustainable use and management of St. Lucia's biodiversity.

(http://www.slbiodiv.org/The_Project/Information/Printed_Materials/NBSAP/nbsap.html). The proposed project will thus link with the MAFF, the Environment Division of the Ministry of Planning, Environment and Housing and relevant stakeholders in developing activities towards achievement of the national goals.

Trinidad and Tobago:

The NBSAP for Trinidad and Tobago identifies the introduction of exotic species as one of the 'evil quartet' that threatens biological diversity. The plan also identifies factors exacerbating the potential impact of invasive alien species such as the rapidly occurring habitat fragmentation, which increases the opportunities for colonization by IAS.

Based on Kairo *et al.* (2003a), needs prioritised by Trinidad & Tobago with regard to IAS management include:

- To catalogue existing flora and fauna in order to document the number of indigenous and alien invasive species
- Putting in place a surveillance system(s) to monitor introduction of invasives
- Identification of invasive species, particularly of non-pest species and plant species, about which (in contrast to insect pests) the existing knowledge and information is generally scarce
- To develop action plans to deal with invasive species - either on a country basis or as a regional effort

The following citation comprises relevant sections from the support letter provided to the proposed project, the Environmental Management Authority (EMA) of Trinidad and Tobago: "The proposed study has recognized the need for research and inventories on IAS, as well as capacity building between research institutions and government agencies. The EMA supports the regional approach to controlling IAS, especially due to the proximity of the Caribbean islands to each other and the large number of inter-island movements of people, goods and wildlife. A major constraint in Small Island Developing States (SIDS) like Trinidad and Tobago is the dearth of information on species, their distribution, ecological relationships between them and their environments, and threats to them. Studies on mitigation strategies with respect to conserving biodiversity are also lacking. The EMA recognizes the important contribution that this research can make to environmental management and IPM. The EMA's mandate under the

CBD covers agricultural biodiversity including targeted assessments on priority areas e.g. pest management”.

Caribbean Region

Kairo *et al.* (2003a) recorded the following general, overarching concerns and needs with regard to management of IAS in the Caribbean:

- Threat from importation of tropical (Pacific) invertebrates and vertebrates for use in home aquaria
- Need for funds for basic information gathering and research
- Need for funds and support for programmes to reach the right people that can make a difference (policy makers, inspection/enforcement officials, etc.)
- Need for time and personnel to do the above
- Lack of taxonomic support for rapid and reliable identification

Among GEF’s Operational Programmes and Strategic Priorities, two areas potentially expected to impact on IAS are Climate Change and Sustainable Land Management (Operational Programme 15). Both areas, particularly land degradation, may favour the further spread of IAS already present as well as open up opportunities for the establishment and spread of new IAS, thereby enhancing the devastating impact on the native flora and fauna.

(<http://www.iucn.org/biodiversityday/climate.html>;

http://earthtrends.wri.org/features/view_feature.cfm?theme=7&fid=47). Thus, links will be established with past and ongoing projects regionally as well as globally. Institutional, structural and technical capacities developed under these projects will be sourced towards linking in IAS issues. Where feasible, opportunities for factoring in IAS issues will be explored and the project proposed here will establish links with some of the following GEF projects:

- Climate Change Enabling Activity (Additional Financing for Capacity Building in Priority Areas) (2001-2004) in The Bahamas, Dominican Republic, Jamaica, St. Lucia, Trinidad and Tobago
- The ongoing regional full-sized project entitled “Mainstreaming Adaptation to Climate Change” which aims to build capacity in the CARICOM Small Island Developing States (SIDS) (including The Bahamas, Jamaica, St. Lucia, Trinidad and Tobago among 12 participants) to develop Stage II adaptation strategies and measures, according to the United Nations Framework Convention on Climate Change (UNFCCC) and the guidance issued at the Conference of Parties.
- Proposed regional project “Preventing Land Degradation in Small Island Ecosystems in the Caribbean”, involving Jamaica and St. Lucia among nine countries. The overall objective of this project will be to build local and regional capacity to support SLM and develop pilot demonstration activities to address land degradation through SLM at community level in the project sites. Focus will be on two major themes: the establishment of integrated national and regional sustainable land management planning frameworks; and capacity building and implementation of demonstration SLM practices at the community level.
- The Global project “LDC (Least Developed Countries) and SIDS Targeted Portfolio Approach For Capacity Development and Mainstreaming of Sustainable Land Management” recognizes that there is a need for Targeted Capacity Building for SLM, which includes mainstreaming into national development frameworks. The primary goal of this project is to

develop capacity and mainstream for effective mitigation of land degradation through SLM in selected countries. In this process, the Targeted Umbrella Project would assist 40-50 LDC and SIDS that have not yet completed their National Action Plans (including the Dominican Republic, St. Lucia, Jamaica, Trinidad and Tobago) and also otherwise show weakness in capacities for SLM, to develop individual, institutional and systemic capacity for SLM. Almost all of these countries are affected primarily by deforestation rather than desertification, but nonetheless are signatories to the UNCCD, because of its importance as an international instrument for sustainable development.

Links to other relevant projects in the region include:

- Darwin Initiative 162/8/164, which was undertaken from 1999-2003 looking to “Develop biodiversity management capacity around the Ramsar site in the Turks and Caicos Islands”.
- Inter-American Biodiversity Information Network (IABIN) Pilot Project (including The Bahamas, Dominican Republic and Jamaica) which is developing the Invasives Information Network (I3N) for information exchange on invasive species in the Americas. The benefits include: fostering of scientific and technical cooperation, support of decision-making by providing access to key information, national capacity building, development of new tools for information sharing and the promotion of common standards
- GEF-funded project on “Integrating Watershed and Coastal Area Management in the Small Island Developing States of the Caribbean (IWCAM)”: The Bahamas, Cuba, Dominican Republic, Jamaica, St. Lucia, Trinidad and Tobago. In particular this will factor IAS issues in the implementation of an integrated approach to the management of watershed and coastal areas. The proposed project will specifically build on the output of component 3 of the IWCAM project, which “addresses the need to strengthen institutional capacity, while improving and reforming policy and legislation to provide better support for effective implementation of IWCAM in the region”. This project component will further “identify deficiencies and barriers to IWCAM, develop solutions to the barriers and identify incentives to move national and regional institutions toward the establishment of an appropriate institutional framework for IWCAM”
- The proposed project will link in with the full size project “Conservation and Sustainable Use of the Mesoamerican Barrier Reef System (MBRS)” operational in the region with Belize being one of four participating countries (the others being Honduras, Guatemala and Mexico), inasmuch as addressing issues of prevention and management of IAS in marine ecosystems.
- This project will also link to the regional pilot partner, Costa Rica, of the global, GEF-funded project: “Building Capacity and Raising Awareness in Invasive Species Prevention and Management”, which has just been approved at PDF-B level.
- Under UNEP-CAR/RCU’s sub-Programme "Conservation and Sustainable Use of Major Ecosystems in the Wider Caribbean" of the Regional Programme on Specially Protected Areas and Wildlife (SPA), CABI has been commissioned to produce a compilation of information on national and regional capacities and experiences on marine invasive species management programmes in the Wider Caribbean, including ballast waters management. Results and experiences from this will be used in the development of marine invasives for the current proposal.

2. PROJECT RATIONALE AND OBJECTIVES

2.1 Global Importance of Caribbean Biodiversity:

Several Caribbean marine and terrestrial habitats are of international importance for their biodiversity and conservation value and have been designated a ‘biodiversity hotspot.’ (Mittermeier *et al.*, 2000; Myers *et al.*, 2000)¹. The Caribbean hot spot spans 4.31 and just 0.26 million square kilometres of ocean and land area, respectively. This encompasses most of the island groups in the Caribbean Sea and extends to the southern tip of Florida. The level of endemism within the region is very high. The marine diversity within the hotspot includes about 60 species of corals and about 1,500 species of fishes. Nearly a quarter of these species are endemic to the region. Indeed, the greatest concentration of fish species in the Atlantic Ocean Basin occurs in the northern part of the hotspot in waters shared by The Bahamas, Cuba and the United States.

The islands of the Caribbean also support many rare (including endemic) and vulnerable species, across a range of taxa. The level of endemism is very high: 60% for regional flora; 85% for herpetiles; 30% for mammals and 22% for birds. For instance, of 138 Caribbean species of *Anolis* lizard, 137 are endemic while all 63 Hispaniolan *Eleutherodactylus* frogs are unique to the island. Invertebrates have been relatively poorly studied in the Caribbean, but endemism undoubtedly occurs at a high level.

Thus, globally and regionally, the Caribbean marine and terrestrial ecosystems provide outstanding examples of island and aquatic species diversity and natural history. The proposed project has as its purpose, the mitigation of threats of invasive alien species in the insular Caribbean, and this will contribute to the goal of the conservation of globally significant biodiversity water bodies.

In the new Resource Allocation Framework of GEF IV three proposed project countries are included under the ‘Individual Allocations’ based on exceptional terrestrial and marine biodiversity levels and three others in the Groups allocation.

The project will build national and regional frameworks, capacity, and follow-on plans/commitments to prevent or manage IAS species in the GEF Operational Programmes: arid and semi-arid ecosystems (OP 1), marine and freshwater ecosystems (OP 2) and forest ecosystems (OP 3).

Specifically the project will fulfil the sub-objectives of Biodiversity Strategic Priority No 2 as it will catalyse mainstreaming through support for systemic and institutional capacity building, improve awareness and education among government agencies and other stakeholders; and demonstrate the mainstreaming of IAS prevention, management and control with the productive sector and/or agencies.

In addition, through extensive public communications and education outputs and activities the project will directly contribute in attaining Biodiversity Strategic Priority No 4 to improve the

¹ See also <http://www.biodiversityhotspots.org/xp/Hotspots/ caribbean/>

effectiveness of dissemination and application of best practices and tools from projects and programmes to improve the sustainability of GEF impacts in the biodiversity focal area.

Problem Statement

2.2 IAS - Major Threat to Biodiversity in the Caribbean

Invasive alien species (IAS) are now a major threat to many terrestrial, freshwater and marine ecosystems in the Caribbean islands (Anonymous, 2004). IAS are also a major concern for human livelihoods especially from a perspective of trade and human health. A recent assessment listed at least 552 alien species in the insular Caribbean region mostly from terrestrial habitats, with fewer species reported from freshwater and marine environments. These lists were anything but comprehensive and it was clear, that, for instance, there are serious gaps in our knowledge of aquatic ecosystems (Kairo *et al.*, 2003ab). The vulnerability to new invasions into the Caribbean is further exacerbated by the wide range of deliberate or accidental pathways for plant and animal species as well as disease organisms such as fungal pathogens. The growing numbers of tourists and volume of traded commodities accompanied by increased volume of leisure, and commercial air and sea traffic are among the most important of these. Deliberate introductions of ornamental plants, pets and aquaculture organisms are also important.

Cumulative effects of the impacts of invasive species across biological scales can result, for example, in complex changes in the availability of resources (nutrients, light, oxygen), the dynamics of competition for resources, and ecosystem structure and function. An example is the deliberate introduction of the highly invasive native Australian tree, *Melaleuca quinquenervia* into Puerto Rico and The Bahamas Islands. Plantings of *Melaleuca* are also known to occur in the Virgin Islands, Dominican Republic and Cuba. In these localities, the plant has not been reported as invasive but clearly the risk is there. This species poses a severe threat to biodiversity because of its strong tendency to form virtual monocultures, but also as a result of its allergenic characteristics, high flammability, and alteration of hydrological regimes through soil accretion. There are several other highly invasive alien plant species now present across the islands.

Introduced predators (dogs, cats, rats, mongooses) have been the main agents of extinction of reptiles on small islands, and large-bodied reptiles with a long history of island isolation have proven most vulnerable. On the island of Pine Cay (Turks & Caicos Islands), rock iguanas were driven to extinction in just six years by feral cats that originated from pets introduced by resort construction workers.

The Small Indian Mongoose (*Herpestes auropunctatus*) provides a widely cited example of the environmental damage in the Caribbean that has resulted from introductions of mammals. This species was deliberately imported as a biological control agent against rats in sugar cane fields and has subsequently been linked to the extinction of at least five endemic species. In the years following its establishment in Jamaica, the mongoose was spread to many other Caribbean islands, and has had similar devastating impacts on their biodiversity.

Because of the close economic and cultural links, IAS are quickly spread across the region. This was clearly demonstrated with the advent of the pink hibiscus mealybug, *Maconellicoccus*

hirsutus, in Grenada in 1994. This insect with a host range exceeding 200 species of plants spread throughout the Caribbean in less than seven years causing serious damage to both managed and unmanaged ecosystems. Similar rapid spread has been demonstrated for a number of other IAS problems. The hibiscus mealybug invasion also brought into sharp focus the importance of IAS on trade as uninfested countries shut their doors to products from infested ones. This would also be an issue with respect to invasive plant diseases i.e. such as the fungal diseases black Sigatoka (*Mycosphaerella fijiensis*) affecting bananas and frosty pod rot (*Moniliophthora roreri*) on cocoa. Indeed, at the present time trade facilitation within the framework of WTO-SPS Agreement is a priority for all governments.

Other areas of concern are the spread of human diseases and its vectors. The spread of *Aedes albopictus* in the Western Hemisphere illustrates the risk very well. This Asian mosquito vectors a range of viruses including dengue. During the last decade or so, the mosquito has spread to a large part of the region and many Caribbean islands are now affected. The mosquito is spread largely through trade, e.g. of tires.

Fresh water and marine ecosystems in the Caribbean are equally threatened by a range of IAS but in general there is much less information on impacts. Through aquaculture for instance many fish have been introduced some of which are known to adversely affect indigenous biodiversity. Some examples cited in the GISP database include: *Micropterus salmoides*, *Salmo trutta*, *Lates niloticus*, *Oreochromis mossambicus* and *Cyprinus carpio*.

A range of weeds is also to be found. Some such as Salvinia (*Salvinia molesta*) and Water Hyacinth (*Eichhornia crassipes*) have a broad distribution across the tropics. Wetland ecosystems on islands are especially vulnerable because of other pressures including pollution and competition for freshwater.

Coral reefs are an important part of the marine ecosystems in the Caribbean and during the last two decades have come under intense pressure from disease and other factors (Payet, 2004). While the exact reasons for the upsurge of coral diseases has not been determined conclusively the effect of invasive species has not been researched and requires attention. Goreau *et al.* (1997) identified several factors relating to coral diseases in the Caribbean and they also noted that most diseases were not recognized until they had spread widely, and it was too late to identify source regions or rates of spread. In general, however, the rates of spread of marine IAS can be just as rapid as seen in some terrestrial species. For instance, the Asian Green Mussel, *Perna viridis*, which occurs naturally in parts of South East Asia, spread quickly in the Americas. The green mussel, first recorded in Trinidad in the mid-1990s, has since spread to Venezuela and across the region.

The introduction of invasive alien species compromises the all-important isolation of island biotas, the very characteristic that underpins their special patterns of development. Unfortunately, many of the biological characteristics that make islands so special, and give them such substantial conservation value, also render them particularly vulnerable to the establishment and impact of invasive species. The problem of invasive species impacts on island ecosystems is exacerbated by the fact that a single non-native species can drive numerous indigenous species to extinction. Indeed, on islands, invasive species are the most important threat to biodiversity.

In order to define the framework of the proposed project aimed at reducing the threats to Caribbean biodiversity, it is firstly necessary to discuss some of the macro factors that appear to be contributing to the overall IAS problem; these are covered in a preliminary discussion in Section 2.3. However, during the further design stages of the project (during the PDF A and PDF B) further analysis of these factors will be included in discussions with primary stakeholders. The project design will also factor in existing experience on IAS prevention and management within the region and from the global experience. This approach to the project design will ensure that the project will effectively reduce the impacts to globally significant biodiversity in the Caribbean.

2.3 Specific Setting and Vulnerability to IAS of the Caribbean

A range of interacting factors influence the potential vulnerability of particular islands to invasion and are relevant to the prevention or management of IAS. An understanding of these factors is crucial for the development of a robust effort towards prevention and management. Some of the key factors are listed below followed by a brief discussion. They include:

- Geo-physical and ecological complexity
- Political and economic complexity
- Multiplicity of pathways
- Inadequate capacity and linkages between key stakeholder
- Influence by trading partners

Geo-physical and Ecological Complexity

The insular Caribbean comprises a set of islands of diverse character. They differ in geological origins and ecological significance. The islands vary considerably in size from the larger ones (Hispaniola, Cuba, Jamaica, Guadeloupe, Martinique, Trinidad) to smaller ones such as The Bahamas Archipelago and most of the East Caribbean States. Because of the varying size, 'scale' (in the widest sense) is an important dimension. Both terrestrial and marine ecosystems are important in the region. The importance of the interlinkages between the marine ecosystems, better than anything, emphasizes the important dependency on a shared resource and thus the importance of the need for trans-boundary cooperation between the island states.

Political Complexity

The wider Caribbean comprises both continental and island nations and dependent territories. These countries/territories differ considerably in terms of administrative arrangements and political affiliations. There are at least four languages spoken with the key ones (based on number of countries) being English (all CARICOM Countries and British and USA Dependent territories), Spanish (Dominican Republic and Cuba), French (Haiti and French Dependent Territories) and Dutch (Dutch Dependent Territories). This particular socio-political setting makes it hard for any one country to work effectively with neighbouring countries on IAS prevention and management, without channelling this through larger scale regional bodies, for the necessary standardisation and 'upscaling' of effort. There are several regional and sub-regional political groupings, the main ones being CARICOM, Organization of Eastern Caribbean States (OECS) and the Association of Caribbean States (ACS).

Economic Complexity

The importance of different sectors of the economy is very variable across the region. Some Caribbean countries have very active agricultural sectors (and have cleared significant areas of natural vegetation to make way for cultivation) whilst other islands have significant mineral wealth (including the larger islands of the Greater Antilles), or oil reserves (Trinidad and Tobago), which again influence patterns of land use, international trade and economic development. Countries such as Haiti and Dominican Republic are major producers of processed commodities for local consumption, whilst others focus on large scale cash crop production for export (e.g. sugar in Jamaica, Trinidad, Barbados, Cuba, Guadeloupe; bananas in Dominica, St. Lucia, St Vincent, Grenada, Guadeloupe, Jamaica, Martinique). However, several islands support relatively little local agriculture, generally as a consequence of poor soils (e.g. Turks & Caicos Islands, Anguilla, The Bahamas).

For many Caribbean countries other features of the natural environment provide high value services and benefits to the local economy. A warm climate, beautiful sandy beaches and (increasingly) eco-tourism destinations, make these islands attractive to international visitors. Many Caribbean countries are increasingly dependent on the sustained income from tourism. Tourism is thus an important part of the economy in many Caribbean countries.

Multiplicity of Pathways

The range of pathways in the Caribbean through which potentially invasive species enter territory beyond their natural range of distribution is very broad including, for example: agriculture, aquaculture, transport and trade (persons, commodity and pet), tourism (e.g. eco-tourism/yachts), and industrialization (growth of industrial commodities, e.g. those associated with the oil industry). Clearly many of the important potential pathways for unwanted species introductions involve significant players in the private sector, and have no direct link to agriculture. Tourism is an important economic activity in many Caribbean countries, and for instance importation of ornamental plants for landscaping of holiday resorts has been identified as a major concern. The pet trade has similarly been noted as a particular source of concern. Obviously, almost any international trade activity can contribute to unwanted and inappropriate species introductions.

Lack of Capacity

Because of the small size of the economies of the majority of countries in the Caribbean, there is a serious problem of lack of capacity to deal with IAS. The large chunk of existing capacity is resident in Ministries of Agriculture with a smaller number within environment and other Ministries. Inadequate technical, regulatory and policy frameworks have exacerbated the situation. For instance, most existing regulations and infrastructure for preventing unwanted species introductions are based in the governmental part of the agricultural sector. Conditions vary from country to country, but there is often a lack of capacity and thus willingness to co-operate between different sectors across the region and also within individual national governments and the private sector. There is therefore a strong need to identify and involve the widest range of stakeholders, build capacity, as well as establish effective partnership agreements and programmes on prevention and management of IAS.

Influence by North American Trading Partners

The Caribbean Region has strong economic and trade links with the USA which have implications on management of IAS. From a US perspective, the Caribbean Basin is the 10th largest export market with \$22 billion worth of trade. Indeed 70% of earnings received by a Caribbean person, are spent on US products. Conversely, the US is a major market for many Caribbean agricultural products. Much of the trade links are through Florida, where interception of IAS has continued at alarming rates. Furthermore, the extensive Caribbean migrant community living in the US (circa 2.8 million persons) serves to emphasize the existing linkages through family ties to support a comprehensive plan for management of IAS. Additionally, the problem is being examined from the context of trade agreements such as the Free Trade Area of the Americas (FTAA).

2.4 Defining the Problem and Interventions required

Countries in the Caribbean do not have a sufficient knowledge base, policy frameworks, institutional frameworks or capacity to deal with the increasing tide of species invasions and the subsequent problems that develop. This has been highlighted by a number of recent assessments. In 2001, a Mesoamerican - Caribbean workshop was held in Costa Rica organized by IUCN, and GISP and supported by the US Dept of State and the Swiss Agency for Development and Cooperation (Hernandez *et al.*, 2002). Participants at this workshop identified the following seven problems as priority issues:

- Local and regional capacity
- Education
- Legal aspects
- Policies and institutional linkages
- Information management
- Economic aspects
- Technical research aspects

The workshop also highlighted the need for regional cooperation and produced a four-point plan of actions to address the above problem areas.

During 2003 at least two regional symposia (primarily Caribbean driven) addressed the problem of invasive species in the insular Caribbean. Key outcomes of these meetings were the need for regional and national actions to deal with invasive species and the need to include the broad range of stakeholders. However, a major and important missing link was the involvement of national entities in the process, and this is what is now required. Additionally, through an initiative by The Nature Conservancy Project (TNC) and CAB International, the first concerted effort to collate and synthesize information on threats posed by invasive species in the insular Caribbean was conducted (Kairo *et al.*, 2003a). The synthesis was based on direct interaction and input for a range of stakeholders throughout the region, which included an electronic workshop with about 100 participants. The project output included a database, which lists at least 552 species, invasive in all broad ecosystem types (marine, freshwater and terrestrial). A preliminary attempt was made to identify the most serious threats at the regional level based on a range of parameters demonstrating the practical value of such a database. A second database

with contact details and areas of specialization for more than 250 people involved and/or interested in invasive species issues in the Caribbean was compiled together with a review of current governmental regulations with relevance to invasive species. In addition, priority areas/issues which require action including development of national and regional policies and strategies, specific action plans to deal with present and potential problems, a framework for exchange of information, capacity building needs, etc. were identified.

The resources and capacities that could be channelled into efforts aimed at addressing IAS also varies among the different countries of the region. However, many of the countries are close in a cultural and trading context, and awareness of the issues in the agricultural and environment sectors is now high across several territories. An *ad hoc* meeting of representatives from at least 10 Caribbean countries held during the recent SBSTTA meeting in Montreal also recognized the need for action to deal with IAS.

Given the issues that need to be addressed (identified in this Section), effective prevention and management will only come about through the growth of a coordinated approach both nationally and regionally; clearly, this effort will have to capture the geo-physical, ecological, political and economic complexity together with the associated multiplicity of pathways and influence by (regional) trading partners. In particular, invasive species issues will need to be linked with new initiatives such as the WW2BW and trade negotiations. Already there is much interest from USA Agencies and regional countries to develop a region-wide safeguarding mechanism. This idea was endorsed at a June 2004 meeting in Trinidad attended largely by agriculture officials from across the region as well as the US and Canada.

Recognizing that everything can not be done at once, there is a strong need to establish a mechanism to identify the root causes and priorities for action. One of the key elements in such an approach will be the development of a Caribbean-wide strategy which recognizes different national needs but at the same time will allow countries to economize on individual efforts (because of limited resources within some smaller countries) through sub-regional and regional cooperation. This approach will be facilitated through existing sub-regional and regional organizations and partnerships, in particular the CISWG. The establishment of IAS strategies will allow capacity building and training to be appropriately targeted at key groups in key areas (sectors and geographically). It will also allow all appropriate stakeholders to be engaged with the introduction and/or development of appropriate interventions for prevention and management in various sectors. A key element in the project will be the transfer of experience and best practices across the region and from the global experience. Thus for instance there is tremendous scope for adapting the National Invasive Species Strategy developed by The Bahamas to other countries and to the IAS strategy currently being developed in Belize.

The adopted approach is for model systems for dealing with IAS developed to fulfil national, and sub-regional requirements in the pilot countries, will form the basis for a robust regional cooperation and strategy.

The scope and objectives of the Caribbean-wide strategy will be decided during the course of the project. Nonetheless, it is evident that the strategy will need to cover a number of key aspects. Information on IAS will be a corner stone and the project will be able to build on the regional

database created recently, most notably on the assessment of Caribbean invasive species threats by CAB International and The Nature Conservancy.

Once the framework of the strategy has been agreed, a number of key issues in the marine, freshwater and terrestrial sectors will be addressed to promulgate and demonstrate relevant policies, control technologies etc.

The project will use a number of IAS from different taxa as models in pilot prevention and management activities. Thus it is anticipated that they will include a marine IAS such as the green mussel *Perna viridis*. This mussel has been largely spread through human activities and especially through ballast water (a key pathway for the movement of marine IAS). A number of plant species are causing serious problems in terrestrial habitats. For instance, *Casuarina* and *Melaleuca* are particularly serious problem on some islands such as The Bahamas. In Cuba, 'marabu', *Dichrostachys* is a serious problem while in Jamaica *Pittosporum* is a serious problem in protected areas. Aquatic weeds such as Salvinia and Water Hyacinth are also problems on inland waters. The frosty pod rot pathogen of cocoa, *Moniliophthora roreri*, has aggressively invaded Central America over the past few years and is now threatening the Caribbean.

The outcomes of the project will need appropriate long-term commitment and investment by governments in the region. For this to happen, it will be essential to engage all important components of government including finance and planning ministries as well as stakeholders from the private sector from the very beginning and this will also form an important component of the project.

2.5 Criteria for Country Selection

Although the wider Caribbean comprises 36 island and continental countries or dependent territories, the project will concentrate on a few countries in the first instance, which will act as models and key countries for rationalization of project outcomes beyond the project. The countries which have been suggested and preliminary selected to be involved in the PDF A meet some basic selection criteria with regards to their importance from a biodiversity (terrestrial, freshwater and/or marine) perspective, but also taking into account other factors and complexities that define the region, including the following:

- All selected countries have pressing IAS problems in different ecosystems. They also have demonstrated interest and commitment to deal with IAS as well as are able to act as regional representative nodes for rationalization of the project outcomes;
- The geophysical complexity both in terms of scale and ecosystem types (thus representative large islands such as Cuba as well as the smaller islands such as represented by The Bahamas Archipelago or St Lucia);
- The countries represent the political complexity including representatives of CARICOM (The Bahamas, Jamaica, St. Lucia, Trinidad and Tobago) as well as non-CARICOM countries (Cuba, Dominican Republic) to enhance the regionalisation of project outcomes. Sub-regional groupings will also be represented, for instance St. Lucia from the Organization of Eastern Caribbean States (OECS);

- Having socio-cultural ties of significance to some of the major IAS pathways, and inclusion of both English (The Bahamas, Jamaica, St. Lucia, Trinidad and Tobago) and Spanish (Cuba, Dominican Republic) speaking countries representing this dimension;
- The selected countries represent the wide variation in socioeconomic parameters, from richer more industrialized countries which are relatively better endowed in terms of financial resources (e.g. Trinidad and Tobago) to emerging economies, and countries with good human capacity such as Cuba.

2.6 Project Goal and Objectives

Based on the initial analysis of needs and feasible investment in establishing regional, sub-regional and national IAS strategies, pilot and capacity-building programmes, the following proposed project goal and objective have been set.

The Development Goal of the project is "To conserve globally important ecosystems, species and genetic diversity on islands and surrounding marine waters".

The Immediate Objective or project purpose is "The mitigation of the threats to biodiversity and the local economy of invasive alien species in the insular Caribbean".

The anticipated project outcomes are listed for each proposed component.

3. PROJECT COMPONENTS AND EXPECTED OUTCOMES

Introduction

During discussions with a number of stakeholders in the six countries listed in this proposal, and through consultations with other countries in the Caribbean and regional organisations (e.g. CARICOM), the following project components are suggested. These may be adjusted during the further development of the project during the PDF A and PDF B consultation phases. The project will, during the design stages, promote some central concepts from the CBD which are relevant to the issue of IAS:

- The three-stage hierarchical approach from the Guiding Principles, which outlines the priorities and relevance of prevention, early detection, eradication and mitigation (CBD Decision VI/23).
- The 'ecosystem approach' (Decision V/6 of the CBD) which should be considered during the implementation of eradication or control measures.

'Capacity building' and the validation, demonstration and dissemination of project results will be important features of the project. These aspects will be included under the particular Component 'themes' (see below) as, for example, several different types of capacity building will be needed and thus this does not easily form a single component of its own.

The project will also promote ‘best practice’ methods / technologies where these have been developed (e.g. as outputs from other GEF-funded initiatives) and are feasible. Likewise, the approach and programme components outlined in GISP’s ‘Toolkit of Best Prevention and Management Practices’ (Wittenberg and Cock, 2001) will be utilized during the development of relevant sections in the project. Some of the project results (e.g. control technologies) will be validated and demonstrated at demonstration sites within countries. These sites will be selected according to criteria chosen and agreed at the PDF A phase. Baseline surveys to measure the extent and impact of invasive species at the sites (and thus provide data for the final selection of sites) will be done at the PDF B phase.

Finally a key issue to be addressed during the project design stages will be: the linking of environmental (including marine) and agricultural perspectives (finding ‘common ground’) at the national and regional level.

Looking further into the future and in particular at the issue of long-term sustainability and formal national endorsements, it will be necessary to involve relevant policy makers as well as agencies and departments within agencies providing the necessary legal framework in individual countries.

COMPONENT 1: Development of National IAS Strategies

Summary rationale

It is necessary for countries / territories to consider national needs, priorities, and actions on IAS issues, together with regional needs / priorities, taking into account any existing sector strategies. Recommendations for policy and revisions of legal frameworks would follow this process. All key stakeholders (cross-sector) will need to be involved in the formulation of plans; the process will also need to be led by key government departments and feed into government development plans. At the same time, it will be necessary to engage the trade sector into the discussions and decision-making. The national processes will also need to consider how national plans will be coordinated and led. Because of the various complexities discussed above, the development of strategies and policies will proceed in a series of steps, which are not mutually exclusive.

Component description

The Bahamas is the only country in the region to have developed a national strategy for the prevention and management of invasive species (BEST Commission, 2003). The Bahamas strategy serves as a good model for other countries in the region and national strategies would form the basis for development of strategies in each of the key geo-political regions. During the PDF A an assessment will be made of which countries need and are willing to develop national strategies and which others may wish to combine their national needs with a sub regional strategy. Based on the assessment, national and / or sub-regional draft strategies would be developed. These strategies will need to be ratified by individual countries, thus the involvement of relevant governmental agencies is essential from the start of the project. Relevant components for national strategy development in GISP’s ‘Toolkit of Best Prevention and Management

Practices' (Wittenberg and Cock, 2001) will also be utilized. The plans will also include an 'exit strategy' for the proposed project and thus will identify key items that will need to be addressed during the project such that matters of responsibility, linkages and sustained investments become part of the plans.

A key component would be the dissemination of strategy formulating processes to other (non-participating) countries and territories.

Outcomes:

- National stakeholder buy-in and cooperation established, functional and effective in participating countries

COMPONENT 2: Establishment of Caribbean-wide Cooperation and Strategy

Summary rationale

It is recognized that countries in the region are interlinked and the strength of regional safeguarding mechanisms will depend on the strength of the weakest link. The region-wide strategy will aim to expand on the draft Caribbean Regional Invasive Species Strategy (CRISIS) (focused on CARICOM nations only) as well as fostering country collaboration and integration of national needs.

Component description

The component will utilize national strategies for the development of a coherent regional strategy that addresses the economical, ecological and political complexities. It will also harness the experience with IAS of key nations with Dependent Territories (overseas territories of USA, UK, France and the Netherlands in the region) and who have trade links with the Caribbean. Key opportunities to involve international organizations and agreements in agriculture, trade and environment will be actively sought through agreements to enhance the formulation as well as the sustainability of the regional strategy (for instance CBD, WTO-SPS and IMO). Relevant section(s) on regional strategy development from GISP's 'Toolkit of Best Prevention and Management Practices' (Wittenberg and Cock, 2001) will also be utilized.

Combining IAS issues in the terrestrial, freshwater and marine sectors at the regional level in 'one strategy' may be complex and thus three linked strategies may have to be developed. The PDF A will look into this further. Like national strategies, the regional strategies would need ratification by individual countries as well as regional agencies (e.g. CARICOM, OECS), thus the involvement of the relevant organizations is essential from the start of the project.

Outcomes:

- Coordinated efforts towards the ratification and enforcement of the IAS strategy in participating countries
- Enhanced cooperation within and among various sectors (terrestrial, freshwater and marine) as a result of effective coordination

COMPONENT 3: Information and Knowledge Generation, Management and Dissemination

Summary rationale

This key component cuts across terrestrial, freshwater and marine habitats as well as different sectors (agricultural health, food safety, human health, transportation, tourism etc.). Since it would be impossible to undertake capacity enhancing activities in information and knowledge management in all of the areas, some degree of prioritisation would have to be done, based on regional and national considerations and needs. Such needs (e.g. awareness, research, control etc.), products and users of IAS information would need to be clarified at the start of the project. At the national level this will require a socio-economic assessment of different user groups (including the general public), their awareness and information need levels in order to evaluate barriers to uptake. An important issue is the paucity of information on IAS presence / distributions and impacts; such information is critical for the engagement of governments, the trade sector and the general public in IAS issues. Thus research capacity (e.g. surveillance, monitoring, impacts on ecosystem services) must be assessed and built upon. It is also necessary to set up timely and efficient dissemination mechanisms for results from all components of the proposed project.

Component description

This component will identify and use a range of relevant ‘best practices’ for information generation, management and dissemination from GISP’s ‘Toolkit of Best Prevention and Management Practices’ (Wittenberg and Cock, 2001). It will include electronic networking systems as well as the use of the various media for public communication and sensitisation of policy makers. This will facilitate the incorporation of results into relevant national / regional policy development. Existing within-sector species inventory initiatives (e.g. those linked to agricultural trade) will be linked together and brought into a wider scheme to provide a more comprehensive resource without duplicating existing efforts. The TNC-CABI database (Kairo *et al.*, 2003a) would provide a valuable starting point. Another important linkage is the IABIN database (as mentioned above). Activities will be undertaken to link the Caribbean into global initiatives on information collation and access such as the Global Invasives Species Information Network (GISIN).

This platform will also be used for the wide dissemination of information and results generated via activities conducted under all components of the proposed project.

Outcomes:

- Improved capacity for information generation, collation, management and dissemination via enhanced and coordinated IAS information access and dissemination networks established at the national and regional level
- Information, lessons, and best practices, as well as results of projects and research programmes disseminated to a range of stakeholders nationally and regionally, and incorporated into relevant national and international policy development

COMPONENT 4: Prevention of new IAS introductions in Terrestrial, Freshwater and Marine Systems

This component will pilot national and regional strategies aimed at prevention of IAS in terrestrial, freshwater and marine systems.

Summary rationale

Prevention (between and within States) is the most cost-effective measure to manage IAS, and is a key component of the CBD Guiding Principles. Prevention needs to cover unintentional and intentional introductions. Here prevention is taken to include risk assessment and management. In aquatic systems which are so predominant in the Caribbean, prevention measures are of paramount importance because IAS are particularly difficult to detect at an early stage and even more difficult to control once a population explosion has taken place.

The many closely linked economies and trade within the Caribbean, and the development of free-trade arrangements with the global community, means that it is imperative that the Caribbean countries develop common approaches to prevention.

Component description

It is recognized that while some measures for prevention already exist, much still needs to be done to address all the relevant pathways by which IAS enter the region. This component will utilize existing measures, e.g. within plant and animal health, and steps currently underway to tackle issues related to ballast water. It will also review the needs for risk assessment, quarantine measures and management interventions, as well as capacity building at the national and regional levels, particularly, on linked and coordinated prevention schemes. Research needs in terms of capacity building will be similarly reviewed in order to identify necessary interventions. This exercise will need to be done for terrestrial, freshwater and marine systems, linking in different sectors and stakeholders as well as relevant programmes focusing on biodiversity (e.g. WW2BW, Globallast) as appropriate.

The project would build a framework for prevention through pilot projects (including capacity building) in the participating countries. Key tools have been developed in other counties (outside of the Caribbean) that may prove useful models for national and regional modification within the Caribbean, e.g. generic risk assessment schemes (for alien species, pathways and receptor ecosystems), and 'codes of good practice' for the horticultural trade. The results of projects will be validated through trial schemes (e.g. testing of risk assessment scheme) and also demonstrated to stakeholders.

As with other components, this component will encompass dissemination of experiences from pilot projects and other activities to both participating and non-participating countries.

Outcomes:

- Reduction in the introduction of potentially invasive species in terrestrial, freshwater and marine systems

- Improved understanding of national, sub-regional and regional capability needs towards effective prevention of IAS in (a) terrestrial, (b) freshwater and (c) marine systems
- Enhanced technical and scientific capacity in IAS prevention within national and regional institutions using models and tools incorporating best practices where available

COMPONENT 5: Early Detection, Rapid Response and Control of IAS Impacts in Terrestrial, Freshwater and Marine Systems

Pilots based on national and regional strategies developed during the project will be set up for early detection, rapid response and control of IAS impacts in terrestrial, freshwater and marine systems.

Summary rationale

For IAS that 'break through' prevention barriers, early detection and rapid response measures are the next most cost-effective actions that can be taken for those invasive species that have not established breeding populations (see the Guiding Principles). As with prevention measures, common and coordinated approaches together with information sharing are crucial for effective outcomes.

Component description

The proposed project will develop, test and demonstrate IAS surveillance schemes that factor in the interlinkages of the different island groups and the different economic sectors and agencies. These schemes can build on established early warning systems in the plant and animal health sectors. This work would also feed into Component 3 where the paucity of information on existing IAS in island states and territories was highlighted; and in its turn will support the dissemination of warnings and early action (eradication) needed to the stakeholders.

The proposed project will also address IAS that have already been established and directly threaten island and marine biodiversity in the region. Existing techniques for managing IAS under these circumstances include eradication, control and containment; the efficacy of these depends heavily on the extent of the IAS population, with eradication techniques really only being effective and economically feasible for small populations. Work on marine systems is also challenging because of the technical challenges of working under water, though global experience is growing. The proposed project will develop cooperative initiatives between islands to review, plan and set up pilot projects in the terrestrial, freshwater and marine systems (see below); this will also include capacity building through training. This work will include socioeconomic assessments of stakeholders to identify constraints to IAS management plans. Longer term plans, based on conservation priorities will be developed and general capacity needs will also be addressed. The experiences of the different sectors with management technologies will be pooled to strengthen capacity.

Some stakeholders within the Caribbean may be sensitive to the management of certain IAS groups (e.g. mammals) and thus these groups must be consulted and be informed. Existing

policy and legal procedures relating to the management of IAS at national and regional levels will be reviewed.

An important part of IAS management is the restoration of ecosystems after an IAS has been removed or controlled. If this aspect is not factored into the planning, then there is the danger that erosion may take place or other IAS will fill 'empty spaces' within an ecosystem. The project will examine existing techniques for addressing this topic.

A number of pilot sites will be set up in order to validate/demonstrate the method or process being used for the eradication or control of IAS. During the PDF A in-country consultations, common criteria for choosing preliminary sites in the region with IAS requiring eradication or control will be agreed; a list of preliminary sites will also be drawn up (see Part II). During the PDF B, pilot sites for practical control operations and other activities on existing invasive species will be finalized and surveys conducted to assess the extent of invasion. Experience with monitoring protocols developed in invasive species projects funded by GEF and other agencies elsewhere will be used. The monitoring protocols will provide indicators of progress with respect to both the control (etc.) of invasive species and the recovery of biodiversity at the site.

The sector - terrestrial, aquatic or marine – as well as the habitat will determine the criteria to be used in the selection of the pilot site(s). Existing criteria developed under other projects (finished or on-going) will be reviewed and taken into account in the selection of the criteria. Preliminary criteria that will form a basis for discussion in the PDF A include:

- Sites which represent regional ecosystems of globally significant biodiversity
- Representation of all major ecosystems i.e. terrestrial, freshwater and marine, through selected pilot sites which are accessible for field work
- Sites representative for a respective ecosystem at risk due to biological invasions through well known and established invasive species posing a regional threat i.e. affecting several countries
- Sites representative for a respective ecosystem at risk due to biological invasions through lesser known and/or potentially invasive species posing a localized threat i.e. affecting as yet only a single or a few countries
- Sites where field work can be supported by good relations with the local community and stakeholders and which are not subject to issues of land ownership
- Sites which harbour invasive species subject to conflict of interest i.e. which are regarded as either detrimental or beneficial by different stakeholders

Outcomes:

- Reduced impacts to ecosystem functions and associated economic costs of IAS in terrestrial, freshwater and marine systems
- Enhanced technical and scientific capacity in early detection, rapid response and control of IAS in national and regional institutions using models and tools incorporating best practices where available

4. PLANNED OUTPUTS AND ACTIVITIES TO ACHIEVE OUTCOMES

The following represent an initial list of activities to achieve project outputs and outcomes. However, these will be reviewed and adjusted during the project design stages by the project participants.

COMPONENT 1: Development of National IAS Strategies

Sub-component 1.1: Establish national IAS strategies and plans

Activity 1.1.1: Review of policy and institutional frameworks and recommendations for government (**Output: review document on current policy and institutional frameworks, with recommendations for changes necessary at policy and institutional levels**).

Activity 1.1.2: Implementing national consultative processes (involving all stakeholders; representatives from regional organisations may also be involved) and workshops to develop strategy plans, and set program priorities (including an exit strategy for the proposed project) (**Output: draft national strategy papers**).

Note: Some of the participating countries may wish to start this process with a sub regional meeting (Activity 1.1.2), in which case a sub regional strategy could be considered.

Sub-component 1.2: Dissemination and replication of strategy formulation processes to other island countries and territories in the Caribbean

Activity 1.2.1: Preparation and implementation of dissemination mechanisms towards replication of project mechanisms outside the project countries.

Activity 1.2.2: Incorporation of 'non-project' countries at project workshops (as above)

Activity 1.2.3: Establishing agreements with non-project countries on cooperation and their incorporation of IAS approaches in planning processes. (**Output: other national planning processes catalysed**).

COMPONENT 2: Establishment of Caribbean-wide Cooperation and Strategy

Sub-component 2.1: Regional framework for cooperation and draft regional strategy and plans

Activity 2.1.1 Design and implement a regional framework for Caribbean-wide cooperation, including international workshop/s to discuss and develop the elements of a (covering all sectors) strategy and action plan using existing plans (CRISIS) as a platform (**Output: regional strategies and plans**).

Activity 2.1.2 Lobbying, consultations, establishment of formal agreements with regional agencies (CARICOM/OECS) and national governments via CISWG as well as high-level meetings (e.g. COTED) (**Output: Caribbean-wide Strategy on IAS**).

Note: cooperation and piloting of the regional strategy will take place through Component 4

COMPONENT 3: Information and Knowledge Generation, Management and Dissemination

Subcomponent 3.1: Assessment of information and awareness needs (e.g. ecological, sociological and economic impacts of IAS); as well as formulation of national/regional research plans

Activity 3.1.1: Awareness baseline and impact surveys of national and regional needs, using representative participating countries (**Outputs: (i) report/s with awareness baselines values, as well as midterm and project completion project impact levels. (ii) Recommendations on awareness and information needs, suitable public communications approaches, as well as ‘absorptive’ capacity of stakeholder groups.**

Sub-component 3.2: Establishment of coordinated IAS information and public communications program, including access/dissemination schemes at national and regional levels

Activity 3.2.1: Design and establish a public communications campaign. This will include production of appropriate materials for the different stakeholders from general public to technical officials involved in invasive species management (guided by awareness baseline impact studies above), e.g.: fact sheets, and identification guides for public / policy maker awareness and technical practitioners (**Output: public communications campaign and use of information products appropriate for different sectors, general public, government etc**).

Activity 3.2.3: Compile regional and national databases of invasive species, programmes, institutions and experts and make accessible linking with the global network of information on IAS being coordinated by the Global Invasive Species Information Network (GISIN) (**Output: needs driven, easily accessible database/s**).

Sub-component 3.3 Initiating national / regional research plans on the prevention and management of IAS

Activity 3.3.1: National and regional workshops to design pilot projects based on needs and priorities set during the national planning meetings (**Output: research protocols agreed and external inputs decided**).

Activity 3.3.2: Undertake pilot projects based on needs and priorities identified in 3.3.1 and in particular where information / tools are lacking (**Output: new information / tools produced**).

Subcomponent 3.4: Development of national and regional capacity for information generation, collation, management and dissemination

Activity 3.4.1: Training in information management, delivery and also in research in specific areas (depending on the national priorities). Training will be delivered in a variety of forms, e.g. workshops, secondments, consultancy etc. (**Output: key national and regional staff trained depending on sector needs**).

Note: Training needs will be assessed during the project design phases.

COMPONENT 4: Prevention of new IAS introductions in Terrestrial, Freshwater and Marine Systems

Subcomponent 4.1: Development, strengthening and implementation of models and tools (incorporating 'best practices' where these are available) for IAS prevention for terrestrial, freshwater and marine ecosystems at the national and regional levels

Activity 4.1.1: Assess national, sub-regional and regional plans for prevention (through workshops and consultations) and 'finetune' and implement available prevention tools (risk assessment/s) based on clear understanding of the key pathways (including pathways that have received little attention to date, e.g., pet trade and aquaculture) (**Output: national and regional plans on prevention and appropriate tools adopted**).

Activity 4.1.2: Develop new tools for risk assessment based on national and regional priorities and the global experience and best practice (**Output: new tools for risk assessment**).

Activity 4.1.3: Establish linkages with other relevant programmes focusing on biodiversity such as the WW2BW, Globallast etc. (**Output: current project networked with other relevant programmes**).

Activity 4.1.4: Set up pilot testing sites for implementation of models and tools (incorporating 'best practices' where available) in appropriate terrestrial, freshwater and marine ecosystems (**Output: information from 'best practices' models and tools testing in pilot sites collected and analysed, and results made available to all partners**).

Subcomponent 4.2: Capacity building on IAS prevention (and linked) for national and regional institutions

Activity 4.2.1: Provide training and capacity building according to national, regional and sector needs and priorities (**Output: key national and regional staff trained in line with sector needs and priorities**).

Note: The development of capacity is particularly critical for the marine sector because the gap here is especially serious across the region.

Subcomponent 4.3: Dissemination of best practices, project experience and models to other Caribbean countries

Activity 4.3.1: Dissemination of results to 'non-project' countries with a view to share project experience and models as well as inform and sensitise 'non-project' countries (**Output: pathways for dissemination established**).

COMPONENT 5: Early Detection, Rapid Response and Control of IAS Impacts in Terrestrial, Freshwater and Marine Systems

Subcomponent 5.1: Development and implementation of models and tools (based on best practices where available) for early detection, rapid response and control of impacts for terrestrial, freshwater and marine ecosystems systems at the national and regional levels

Activity 5.1.1: Conduct a workshop with relevant national and regional government agencies and specialists to develop a standardized early detection-rapid response protocol (and consider policy / legislation issues) and conduct trainings for government agency staff in the protocol (**Output: early detection and rapid response protocols agreed and adopted**).

Activity 5.1.2: Assess national and regional plans and priorities for eradication and control measures (through workshops) and implement (based on best practice and on local socioeconomic assessment) pilot projects for selected important IAS affecting biodiversity (focusing on protected areas) (**Outputs: agreed shared plans taking likely long-term national capacities into account; verifiable measures of reduced IAS impacts achieved; and eradication/control tools adopted by national and regional organisations**).

Activity 5.1.3: Assess and implement control methods for one important marine invasive species using global experience. (It is particularly noteworthy that at present there are no known efforts to manage any marine species in the Caribbean) (**Output: verifiable measure of IAS impact achieved**).

Activity 5.1.4: Assess and develop research projects for IAS where global information / experience is lacking (**Output: project concepts developed with relevant stakeholders**).

Subcomponent 5.2: Develop and transfer techniques and models for natural ecosystem restoration.

Activity 5.2.1: Assess the needs for habitat restoration as part of the eradication and control pilot projects and develop plans using existing ecological experience where this exists (**Output: habitat management plans have IAS eradication / control components included**).

Subcomponent 5.3: Build capacity in early detection, rapid response and control of impacts for national and regional institutions

Activity 5.3.1: Provide training and capacity building according to national, regional and sector needs and priorities. This will be provided during the pilot projects (Activities 5.1.2) and through workshops etc. (**Output: key national and regional staff trained in line with sector needs and priorities**).

Subcomponent 5.4: Project experience and models disseminated to other Caribbean countries and territories

Activity 5.4.1: As for Activity 4.3.1

5. STAKEHOLDERS INVOLVED IN THE PROJECT

A wide range of national and international stakeholders has been consulted over the formulation of this project initiative. These stakeholders would be involved in the further design stages and many would also be involved in the full project. The following lists include the key partners to date but other stakeholders are likely to be consulted and/or involved during the project design stages.

During the PDF A it will be important to bring many Caribbean countries and territories together to confirm the project 'participating countries/territories' and to discuss the form of the linkages to the other countries/territories during the course of the project.

National partners:

Bahamas: Bahamas Education, Science and Technology Commission; Ministry of Agriculture
Cuba: Ministry of Agriculture, Plant Health Institute (INISAV); Ministry of Science, Technology, and Environment
Dominican Republic: Ministry of Environment and Natural Resources
Jamaica: Institute of Jamaica; Ministry of Agriculture; Ministry of Environment and Planning
St Lucia: Ministry of Agriculture, Forestry and Fisheries; Ministry of Planning
Trinidad and Tobago: Environmental Management Authority; Institute of Marine Affairs, Ministries of Agriculture, Land and Marine Resources; Ministry of Environment and Public Utilities

Regional/International partners:

The Caribbean Invasive Species Working Group (CISWG) comprising:

- Caribbean Agricultural Research and Development Institute (CARDI)
- Caribbean Community (CARICOM)
- Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD) (France)
- Centre for Applied Biosciences International (CABI)

- Food and Agriculture Organization of the UN (FAO)
- Inter-American Institute for Cooperation in Agriculture (IICA)
- Pan-American Health Organization (PAHO)
- United States Department of Agriculture - Animal and Plant Health Inspection Service (USDA APHIS)
- University of Florida (UF)
- University of the West Indies (UWI)

Belize: Ministry of Economic Development

Caribbean Conservation Association (CCA), Barbados

Caribbean Regional Environmental Programme (CREP), Barbados

Centre for Resource Management and Environmental Studies (CERMES), UWI, Barbados

Centro para el Desarrollo Agropecuario y Forestal, Inc. (CEDAF) (Dominican Republic)

CARMABI Foundation, Curacao

Curacao: Department of Agriculture, Livestock and Fisheries

Florida A&M University (FAMU)

Global Invasive Species Programme (GISP)

International Maritime Organization (IMO)

Smithsonian Institution (USA)

The Nature Conservancy (TNC)

UNEP Caribbean Environment Programme (UNEP-CEP), Jamaica

US Dept of State, Bureau of Oceans and International Environmental & Scientific Affairs

6. ACTIVITIES TO BE FINANCED BY THE PDF A

The main objective of the PDF A will be to confirm the countries and territories to be involved in the project, as well as the national and regional Executing Agencies. The countries and territories will also revisit the 'baseline situation' in the region, refine the objectives of the full sized project and the objectives of the PDF B.

The PDF A will involve a national consultations phase (supported by CABI), during which representative countries from the whole Caribbean (those listed as preliminary in this document plus others who have shown concern about IAS issues) will report on existing capacity, gaps, needs and key stakeholders; in most cases, this will be driven by one or more government ministries. Key regional organisations will also conduct a similar exercise.

National, regional and international partners will then come together in an international workshop to discuss and agree on project objectives and outcomes, and on the content of the PDF B.

National consultations

The national consultations will include the following:

- Identify a lead agency to consult with all key stakeholders and create national linkages and partnerships
- Each country/territory to produce a report on existing capacity, gaps and needs in relation to IAS (including policy and legal frameworks)
- Complete the process of identification of common criteria for selecting sites/priority species (i.e. IAS that constitute a proximate threat to globally significant biodiversity), draw up a preliminary list of sites, and collect and collate currently available information on priority species
- Identify major stakeholders in addition to those listed above that have an interest in IAS and include them in the entire project development process
- Conduct an inventory of relevant national and regional projects (GEF and non-GEF) that address invasive aliens species issues and that may impact, even unintentionally, on the proposed project
- Evaluate the baseline conditions within each component of the project as detailed above;
- Identify co-finance sources and agencies for the PDF B and FSP

International workshop

An international workshop will be held to bring countries/territories and other stakeholders together (see Section 5 – others may also be included) to exchange information and formulate project plans and management structures. Each country/territory will be asked to include

representatives from environment, trade & transport, agriculture, fisheries, tourism, and other (marine) sectors. The workshop will:

- Present the country/territory reports on the listed activities
- Assess the status of capacity, gaps, needs and current actions as a basis for the further development of the project design
- Discuss/agree the full project objectives; as well as develop a more systematic log frame of proposed project components, outcomes and deliverables/outputs
- Agree on country/territory linkages and partnerships for the execution of the project
- Discuss/agree training needs and priorities for inclusion in the project
- Discuss 'milestones and deliverables' for different stages of the project
- Prioritise the IAS listed for the different countries and across ecosystems and identify the best candidates for pilot studies
- Review criteria for site selection for pilot projects and list possible sites for baseline surveys under the PDF B
- Identify the stakeholders and executing agencies to be included in the project and determine their roles during PDF B and possibly the FSP
- Develop a plan for baseline assessments on log frame indicators during the PDF-B which following recent GEF guidelines are an integral part of any project for CEO GEFSEC approval
- Discuss the objectives, structure, implementation arrangements and timeframe for completing the PDF B work and produce a draft proposal
- Identify potential co-financing for the PDF B and the final project

The workshop will be held in a Caribbean country (probably Trinidad and Tobago) and will need to be of 5 days duration to allow all the issues to be covered.

The PDF B proposal will be finalised after the workshop. CAB International will coordinate the finalisation and submission of the GEF PDF B proposal to the funding agencies identified during the workshop

7. EXPECTED OUTPUT AND COMPLETION DATES OF THE PDF A

The main outputs of the PDF A will be:

- Reports on national consultations with national stakeholders (government and non-government)
- Reports from regional consultations
- List of criteria for site selection for pilot projects and a preliminary list of sites
- International workshop and report
- Confirmed list of participating countries; and their re-endorsement letters for funding under the RAF of GEF IV
- Form of the project linkages to other countries in the Caribbean
- Further refinement of the overall objectives, outcomes, components and outputs of the full sized project
- The objectives and activities of the PDF B

- A clear plan on establishing the baseline values of indicators of the log frame during the PDF-B
- Co-finance secured for the PDF-B; and a plan for securing co-finance for the FSP
- A PDF B proposal

The completion of the PDF A phase would take 6 months and the final PDF B proposal will be submitted to UNEP DGEF latest December 2006.

8. OTHER CONTRIBUTORS/DONORS AND AMOUNTS

Total cash and in-kind co-finance contributions secured for meeting the costs of the PDF A amount to US\$ 148,100 with \$ 54,000 cash and \$ 94,100 in-kind.

The national contributions of US\$2,000 per country/territory (US\$,4000 from Jamaica) will be in-kind contribution in the form of staff time, contributing to costs of meetings, travel and reporting for the PDF A activities within the countries.

Contributions from other partner agencies and purpose:

Cash:

Organization	Amount	Purpose
US Department of Commerce – National Oceanic & Atmospheric Administration	6,000	Project development and implementation (marine)
US Department of State, Bureau of Oceans and International Environmental & Scientific Affairs (BOIESA)	25,000	Support regional participants at the International workshop
Smithsonian Institution	15,000	Support for regional participants (marine) at the international workshop
UNEP-CAR/RCU	8,000	In country capacity building
Total	54,000	

In-kind:

Organization	Amount	Purpose
CABI	21,600	Staff time for PDF A development and implementation
National contributions	14,000	Staff participation in PDF A, including international workshop
University of Florida (UF)	7,000	Staff participation in PDF A, including international workshop
Florida A&M University (FAMU)	12,000	Staff participation in PDF A, including international workshop
CERMES	4,500	Staff participation in PDF A, including

		international workshop
The Nature Conservancy (TNC)	10,000	Facilitation of national consultations in Bahamas & Dominican Republic & participation in the international workshop
CARICOM	5,000	Facilitation of national consultations for CARICOM countries and participation in the international workshop
INIBAP	20,000	Staff participation in PDF A, including international workshop
Total	94,100	

9. TOTAL ESTIMATED PROJECT BUDGET (IN US \$) AND INFORMATION ON HOW COSTS AT PDF A STAGE WILL BE MET

The cash and in-kind contributions have been distributed as follows:

BUDGET ITEM	GEF	Co-finance (Cash)	Co-finance (in-kind)	Total
Project development / PDF A Implementation	2,000	4,000	27,000	33,000
In-country activities	15,000	8,000	16,500	39,500
International workshop	0	40,000	42,500	82,500
Cuba's participation	6,225		2,000	8,225
Proposal development	1,775	2,000	6,100	9,875
Total	25,000	54,000	94,100	173,100

It should be noted that this list does not yet include additional PDF A co-finance sources that are expected - both cash and in-kind. Some requests are in the process of being approved by the respective organization(s). In-kind contributions received will be used for the purpose for which they are provided. Cash contributions (e.g. USDA-APHIS) will be used for funding participation from other countries of the region that have expressed an interest and willingness to participate in the project. Cash requirements for Cuba's PDF-A participation will be provided through GEF, added by Cuba's own in-kind contributions². The total PDF A amount is thus expected to be higher.

Later phases of the project:

The full-sized project is estimated to be between US\$ 15-18M, with one-third contribution from the GEF.

² all cash co-finance sources come from US (based-) agencies, and as such are not allowed to be used for supporting activities in Cuba (instruction US government).

Draft proposals are already under development for additional co-financing sources for later phases of the project (PDF B and the full project). Proposals are being prepared for:

- The Inter – American Development Bank (IADB)
- The Technical Centre for Agricultural and Rural Cooperation (CTA)

Discussions are also underway with the Government of France and The Nature Conservancy (USA). Other sources will be identified during the PDF A.

PART III: INFORMATION ON THE APPLICANT INSTITUTION

<p>10. NAME: Centre for Applied Biosciences International (CABI), Caribbean and Latin America Regional Centre, Gordon Street, Curepe, Trinidad and Tobago</p>	<p>11. TYPE: Inter-governmental not-for-profit international organization; the Agreement establishing CAB International was registered with the UN as an international treaty dated 11 Jan 1988</p>
<p>12. DATE OF ESTABLISHMENT, MEMBERSHIP, AND LEADERSHIP: Membership: 41 countries worldwide Leadership: Director General responsible to the Governing Board and the Executive Council</p>	<p>13. SOURCES OF REVENUE: Contracted development projects and services Sale of publications Member country contributions</p>

14. MANDATE / TERMS OF REFERENCE

CABI is an international, inter-governmental, not-for-profit organisation dedicated to improving human welfare worldwide through the dissemination, application and generation of scientific knowledge in support of sustainable development. Emphasis is placed on agriculture, forestry, human health and the management of natural resources, and particular attention is given to the needs of developing countries.

15. RECENT ACTIVITIES/PROGRAMMES, IN PARTICULAR THOSE RELEVANT TO GEF

- Founder member of the Global Invasive Species Programme
- Assessment of Caribbean invasive species threats
- Participation and presentation of papers focusing on the importance of biodiversity in three key regional meetings: 39th CFCS meeting, 14th regional meeting for the conservation and study of Caribbean birds (2003), Regional workshop on facilitating safer Caribbean-US trade (2004)
- Founder member of the Caribbean Invasive Species Working Group (CISWG) comprising CABI, CARDI, CARICOM, CIRAD (France), FAO, IICA, PAHO, UF, USDA-APHIS, UWI

- Biological control of several invasive species including: pink hibiscus mealybug (*Maconellicoccus hirsutus*), citrus black fly (*Aleurocanthus woglumi*), spiralling whitefly (*Aleurodicus dispersus*) and related *Aleurodicus* spp.
- Several regional training courses in biological control and pest risk analysis
- Supported the development of national invasive strategy for the Bahamas
- Biological control of coffee berry borer in Central and South America
- Management of frosty pod of cocoa in Central and South America
- Biological control of invasive alien plants: *Rottboellia*, *Mikania* and *Chromolaena* globally

PART IV: INFORMATION TO BE COMPLETED BY THE IMPLEMENTING AGENCY

16. PROJECT LINKAGE TO IMPLEMENTING AGENCY PROGRAMME(S)

The proposed project is consistent with UNEP's role as an Implementing Agency of the GEF as defined in the UNEP GEF Action Plan on Complementarity. In that role, UNEP contributes to the ability of the GEF and of countries to make informed strategic and operational decisions on scientific and technical issues in programmes and project design, implementation and evaluation, through scientific and technical analyses. The proposed project will include assessments, methodology development and testing and structured programme learning projects. UNEP also implements projects that relate national and regional environmental priorities to the global environmental objectives of the GEF through policy and technical advisory services. To achieve that objective, this project includes assistance to conduct outreach and awareness, and to improve environmental management and policy instruments in support of the implementation of the CBD at national level. Finally, this project is consistent with UNEP's mandate to promote regional and multi-country cooperation to achieve global environmental benefits, focusing on diagnostic analyses and cooperative mechanisms, and associated institutional strengthening.

The proposed project is a needed addition to the other UNEP GEF led projects on IAS such as the completed MSP "Development of Best Practices and Dissemination of Lessons Learned for Dealing with the Global Problem of Alien Species that Threaten Biological Diversity"; the recently started FSP "Removing Barriers to Invasive Plant Management in Africa" and the ongoing GISP PDF-B "Building Capacity and Raising Awareness in Invasive Species Prevention and Management".

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ANNEXES

ANNEX 1: Map of proposed project area / countries



ANNEX 2: National Executing Agencies

The following is only a provisional list, as the exact Agencies will be decided as an output of the PDF A.

Bahamas

The Bahamas Environment, Science and Technology Commission, Ministry of Health and Environment.

Cuba

INISAV

International Co-operation Department, Ministry of Science, Technology & Environment

Dominican Republic

Secretaria del Estado de Medio Ambiente y Recursos Naturales

Secretaria del Estado de Agricultura

The Nature Conservancy (TNC-DR)

Jamaica

Ministry of Land and Environment

Ministry of Agriculture

National Environment Planning Agency

Rural Agriculture Development Authority

St Lucia

Ministry of Physical Development, Environment and Housing

Ministry of Agriculture

Trinidad and Tobago

Environmental Management Agency

Ministry of Agriculture, Land and Marine Resources

Institute of Marine Affairs

ANNEX 3: Additional decisions of CBD COPs related to IAS

Explicit adherence to COP guidance. Since the COP meeting in 1998, there have been numerous decisions around IAS issues covering the development of technical capacity, information exchange and the financing of such efforts, many of which specifically name GISP as a key partner. The most important of these are summarized below:

- Decisions IV/1 C

Invites Parties to develop country driven projects at national, regional, sub regional and international levels to address the issue of alien species and requests the financial mechanism to provide adequate and timely support for those projects;

Invites the Parties to address the issue of alien species for the conservation and sustainable use of biological diversity and to incorporate such activities into their national strategies, programmes and action plans;

- Decision IV/13, paragraph 1:

“The Global Environment Facility should “... provide adequate and timely support for country-driven projects at national, regional and sub regional levels addressing the issue of alien species in accordance with decision IV/1 C”. Of particular from decision IV/1 C:

- Decision V/8:

Paragraph (13) - Invites the Global Invasive Species Programme to report on its September 2000 meeting on the "synthesis of GISP phase 1" to the Subsidiary Body on Scientific, Technical and Technological Advice prior to the sixth meeting of the Conference of Parties, recognizing the need to continue the work of the Global Invasive Species Programme through the prompt development of the second phase of the Global Invasive Species Programme, with emphasis on ecosystems vulnerable to alien species invasions.

Paragraph (4) – to compile case-studies and disseminate them through the CHM

Paragraph (6) – parties to give priority to development and implementation of alien invasive species strategies and action plans

Paragraph (9) – parties to institute effective education, training and awareness-raising programmes

Paragraph (17) - Invites the Global Environment Facility, Parties, Governments and funding organisations to provide adequate and timely support to enable the Global Invasive Species Programme to fulfil the tasks outlined in the present decision.

- Decision IV/13, paragraph 2(m)

“The Global Environment Facility should provide support for activities to implement the Global Invasive Species Programme, in accordance with decision V/8” (Alien species that threaten ecosystems, habitat, and species). Paragraph 2 (l) - capacity building (m) GISP.

- Decision VI/17 Financial mechanism under the Convention

Paragraph (10) (k) As a priority, for projects that assist with the development and implementation, at national and regional levels, of the invasive alien species strategies and action plans called for in paragraph 6 of decision V/8, in particular those strategies and actions related to geographically and evolutionarily isolated ecosystems, paying particular attention to the needs of least developed countries and small island developing States, including needs related to capacity-building;

- Decision VI/23

Paragraph (9) – requests GISP to assist with the identification of gaps in the international regulatory framework.

Paragraph (10) urges various parties to undertake a range of activities in relation to IAS.

Paragraph (11) requests existing regional organizations and networks (e.g. GISP”) to support the development and implementation of IAS strategies and action plans (including regional strategies).

Paragraph (13) requests CBD SEC to make available via CHM technical information developed by GISP and others.

Paragraph (14) urges GISP to evaluate known and potential pathways and advise governments.

Paragraph (18) acknowledges GISP’s contribution, urges various parties to continue supporting its work, and requests the CBD SEC to explore arrangements for further cooperation.

Paragraph (19) calls on GEF and others to support the Islands Co-operative Initiative developed by GISP and others.

Paragraph (20) invites GISP and others to develop a marine IAS programme.

Paragraph (24) urges relevant organizations to carry out research and assessments on a wide range of topics, including identifying priorities for the GTI.

Paragraph (25) recognizes GISP as the international thematic focal point on IAS under the CHM and calls on various parties to support the creation and maintenance of a global information network on IAS.

Paragraph (26) requests the CBD SEC and GISP to compile information, identify impediments to the implementation of priority actions at national and regional level, and develop solutions to those impediments.

Paragraph (31) requests CBD SEC to explore means to facilitate capacity enhancement for eradication work on IAS.

Paragraph (32) request CBD SEC, in view of identified constraints (i.e. lack of capacity) to use the CHM to provide an on-line educational programme.

Paragraph (34) urges bilateral donors and other funders to urgently provide for the development and implementation of national and regional strategies and action plans on IAS, especially in developing countries and SIDS, and including needs related to capacity building.

- Many of the COP VII decisions on thematic work programmes (Decision VII/2 on the biological diversity of dry and sub-humid lands; Decision VII/4 on biological diversity of inland water systems; Decision VII/5 on marine and coastal biological diversity; Decision VII/27 on mountain biological diversity; and Decision VII/28 on protected areas) include references to the prevention and management of IAS, and to raising awareness and exchanging information on these issues.

- Decision VII/13 (Invasive alien species)

Paragraph (1) notes the importance of mainstreaming activities relating to IAS management, particularly with reference to poverty and inequity;

Paragraph (5) (e) invites parties to improve communication to increase awareness of prevention and management of IAS and to ensure consistency of national policies and programmes;

Paragraph (6) (d-e) urges parties to consider IAS in regional agreements, make information on IAS status/trends available through the CHM, allocate finances to developing countries to improve synergies with trade-, food-, health policies;

Paragraph (11) requests the Executive Secretary, GISP and its participating organizations to address the priorities for practical actions identified in the COP decisions;

Paragraph (13) invites institutions and development agencies to assist developing countries with financial support to address prevention/management of IAS threats.

- Decision VII/20

Invites the Global Environment Facility, in accordance with its mandate, other funding institutions and development agencies to provide financial support to developing countries, in particular the least develop countries and small island developing States among them, and countries with economies in transition, to assist in the improved prevention, rapid response and management measures to address threats of alien invasive species.

- Decision VII/30

Paragraph (1) (c) encourages parties to develop a framework to enhance the evaluation of achievements and progress in the implementation of the Strategic Plan addressing major threats to biodiversity, such as IAS.

ANNEX 4: The Global Invasive Species Programme (GISP)

In addition to the inclusion of provisions on IAS in a number of international legal instruments, the international response to the problem faced included the establishment of the Global Invasive Species Programme (GISP) in 1997 by the Standing Committee on Problems of the Environment (SCOPE), the World Conservation Union (IUCN) and the Centre for Agriculture and Biosciences International (CABI). GISP's mission is to conserve biodiversity and sustain human livelihoods by minimising the spread and impact of IAS by:

- Improving the scientific basis for decision-making on IAS
- Developing capacity to prevent and manage IAS incursions
- Reducing the economic impacts of IAS and control methods
- Strengthening international agreements
- Examining legal and institutional frameworks for IAS control
- Developing codes of conduct for the movement of species
- Raising awareness at all levels about IAS
- Improving techniques for the assessment of IAS impacts.

In the first phase of its operations, GISP undertook a series of assessments of the causes and consequences of the issue, as well as the availability of information and technical resources to address the problem. This resulted in a number of products, including a “Global Strategy on Invasive Alien Species”. The conclusions of the assessments were also presented to a Synthesis Conference held in September, 2000, attended by representatives from 42 governments, 17 intergovernmental organisations and 17 national and non-governmental organisations. This conference also produced an Implementation Plan for a Second Phase of GISP aimed primarily at providing the capacity building tools and training to enable developing countries to deal with IAS.

The first step in Phase II of GISP was to coordinate a series of regional workshops aimed at determining the status of IAS in the regions concerned, as well as the needs and priorities of the national governments. As indicated previously, the majority of participants in these workshops identified capacity building as a priority. Many of them also recognised – in light of the transboundary nature of the issue - the need to address it on a regional level. Similar needs were expressed in national reports presented to COP 6 of the CBD. In an analysis of 62 of the national reports², the CBD Secretariat found that 38% of the reporting Parties gave IAS a high priority, and 46% a medium priority. Further, some were taking measures to control incursions, and the majority had identified the issue to some extent in their NBSAP. However, many Parties reported severe constraints such as lack of relevant knowledge, lack of effective tools for risk assessment, and lack of resources. A full 44% of the Parties were unable to provide any information on the IAS in their countries.