



GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project

TYPE OF TRUST FUND: GEF Trust Fund

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PART I: Project Information

| | | | |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|---------------|
| Project Title: | Preventing COSTS of Invasive Alien Species (IAS) in Barbados and the OECS Countries | | |
| Country(ies): | Antigua and Barbuda, Barbados, St. Kitts and Nevis and Regional (Commonwealth of Dominica, Grenada, St. Lucia, St. Vincent and the Grenadines) | GEF Project ID: ¹ | 9408 |
| GEF Agency(ies): | UNEP (select) (select) | GEF Agency Project ID: | 01404 |
| Other Executing Partners | Antigua and Barbuda Ministry of Health and the Environment; Barbados Ministry of Agriculture, Food Fisheries and Water Resource Management; St. Kitts and Nevis Ministry of Sustainable Development; and CABI | Resubmission Date: | April 4, 2016 |
| GEF Focal Area(s): | BD | Project Duration (Months) | 36 |
| Integrated Approach Pilot | IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/> | Corporate Program: SGP <input type="checkbox"/> | |
| Name of parent program: | [if applicable] | Agency Fee (\$) | 356,055 |

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES²

| Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs) | Trust Fund | (in \$) | |
|----------------------------------------------------------------------------------|--------------------|-----------------------|--------------|
| | | GEF Project Financing | Co-financing |
| BD-2 Programme 4 | GEFTF | 3,747,945 | 6,627,412 |
| | | | |
| | Total Project Cost | 3,747,945 | 6,627,412 |

¹ Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.

² When completing Table A, refer to the excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCF](#).

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

| Project Objective: Prevention, early detection, control and management frameworks for invasive alien species (IAS) that emphasize a risk management approach by focusing on the highest risk invasion pathways of Barbados and OECS countries | | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------|--------------|
| Project Components | Financing Type ³ | Project Outcomes | Project Outputs | Trust Fund | (in \$) | |
| | | | | | GEF Project Financing | Co-financing |
| Component 1. IAS Policy, Institutions and Capacity (Antigua and Barbuda; St. Kitts and Nevis). | TA | <p>Strengthened invasive alien species management framework and cross sectoral arrangements reduce IAS threats in terrestrial, marine and coastal ecosystems</p> <p><u>Indicators:</u> IAS of high risk to terrestrial, marine and coastal biodiversity prevented from entering 3 countries (as measured by increased score in the GEF IAS Tracking Tool items 1 – 4).</p> <p>10% increase in funding towards terrestrial, marine and coastal biosecurity and ecosystem resilience support measures in 3 countries (baseline to be established during PPG).</p> | <p>3 Critical Situational Analyses [Risks for various pathways assessed and recommended measures implemented to minimize economic Impacts of IAS across productive sectors and human well being and minimizing loss of native biodiversity and environmental services]</p> <p>3 National Invasive Species Strategies</p> <p>Cross sectoral arrangements agreed and institutionalized in 3 countries</p> <p>Development and or upgrading of legal frameworks relating to IAS in 3 countries</p> <p>Regulatory guidance and protocols established and implemented for high risk pathways and species (regional, tailored for national)</p> <p>Public and private sectors awareness and capacity building programs developed and rolled out- internalizing IAS threats, impacts, and new controls and regulations</p> <p>Procedures, codes of conduct, incentives system developed. Methodologies for prevention and learning formalized</p> <p>National data exchange for monitoring expanded for inceptions and at ports of entry</p> <p>National cost recovery financial mechanisms designed and implemented</p> | GEF | 1,771,693 | 3,151,821 |

³ Financing type can be either investment or technical assistance.

| | | | | | | |
|------------------------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------|-----------|
| 2. Control and Management of IAS Impacts | TA | <p>Eradication and/or improved control management of IAS impacting global biodiversity for at least 2-3 sites of global biodiversity significance, reducing threats to key species (indicators to be developed for impact to be established at PPG)</p> <p>Antigua and Barbuda: 100 % of invasives eradicated from Redonda Island, stabilizing populations of critically endangered: Redonda ground lizard (<i>Ameiva atrata</i>), Redonda anole (<i>Anolis nubilus</i>), Redonda skink (<i>Copeoglossum redondae</i>) and Redonda pygmy gecko (<i>Sphaerodactylus sp. nov.</i>) and those within Important Bird Area⁴</p> <p>Barbados: increased stability of populations of endemic reptiles: Barbados leaf-toed gecko (<i>Phyllodactylus pulcher</i>) and the Barbados threadsnake (<i>Tetracheilostoma carlae</i>) and hawksbill turtle (<i>Eretmochelys imbricata</i>) nesting population, and indicator coral reef fish species at high</p> | <p>Antigua: Eradication of IAS on Redonda Island. Establishment of new and improve biosecurity mechanisms on Redonda and other critical offshore islands</p> <p>Barbados: Establishment of a biosecure site(s) for threatened native reptiles. Development and implementation of a long term monitoring program on effectiveness of control of invasive alien plant species in support of the Integrated Gully System Management Plan. Rat and mongoose control at selected hawksbill turtle (<i>Eretmochelys imbricata</i>) nesting beaches. Lionfish assessment and management project <u>at high biodiversity value reef sites.</u></p> | | 723,634 (Antigua= 253,098; Barbados = 470,536) | 2,000,000 |
|------------------------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------|-----------|

⁴ <http://www.birdlife.org/datazone/sitefactsheet.php?id=19939>

| | | | | | | |
|-------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------------------------------|-----------|
| | | biodiversity reef sites. | | | | |
| 3: Regional Biosecurity | | <p>Increased collaboration among Caribbean states to tackle IAS</p> <p>[25% increase in IAS or potentially invasive species interceptions at ports from baseline]</p> <p>Species Extinction avoided as a result of enhanced IAS management -- through early warning system, response measures and capacity building for management of IAS at the regional level (7 countries)</p> <p>[50% increase in knowledge pertaining to IAS prevention, EDRR and management from baseline.]</p> | <p>A. Strategy and Coordination:</p> <p>Review of ports of entry to identify gaps in surveillance activities and develop an action plan for upgrading infrastructure; human capacity and adopting international best practices. Regional strategy for prevention and surveillance at ports of entry (i.e. customs). Biosecurity Needs Assessment</p> <p>Further uptake of existing Regional IAS Strategy, and Regional IAS Working Groups.</p> <p>Develop options for the Regional Financing System for shared IAS.</p> <p>Established and enhanced sub regional coordinating mechanism to enhance early detection and rapid response with emphasis at high priority pathway entry points.</p> <p>B. Capacity Building and Awareness:</p> <p>National capacity building program delivered in the sub region to conduct risk assessment and measure economic impact of IAS. Regional training modules (Train the Trainers) for port/s staff in identifying, capture and possible destruction of IAS when intercepted at the port. Awareness module developed and delivered for personnel engaged in surveillance to the open sources of data for identifying IAS.</p> <p>Sub-Regional data exchange for monitoring systematized in a long term sustainable platform. Database of regional expertise established in a sustainable platform and database of IAS in the region</p> <p>Regional App or ID IAS risk cards for prioritized species that</p> | GEF | 1,076,589 (Regional/ Global) | 1,160,000 |

| | | | | | | |
|--|--|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|------------------|------------------|
| | | | can affect important biodiversity, agriculture, and human health developed for ports of entry . Regional IAS ID Guide which to include information on impacts and management Learning Network, CIASNET further integrates and strengthens Barbados & OECS country learning through regional e-learning modules | | | |
| | | | | | 3,571,916 | 6,311,821 |
| | | | | Project Management Cost (PMC) ⁵ | 176,029 | 315,591 |
| | | | | Total Project Cost | 3,747,945 | 6,627,412 |

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

| Sources of Co-financing | Name of Co-financier | Type of Co-financing | Amount (\$) |
|---------------------------|----------------------------------------------------------|----------------------|--------------------|
| Recipient Government | Antigua and Barbuda (Environment Division, Coast Guard) | In kind | \$500,000 |
| Recipient Government | Barbados Ministry of Environment | Cash | \$30,000 |
| Recipient Government | Barbados Ministry of Environment | In kind | \$1,202,112 |
| Recipient Government | Barbados Ministry of Agriculture | In kind | \$126,300 |
| Recipient Government | Barbados Ministry of Health | In kind | \$360,000 |
| Recipient Government | Barbados Coastal Zone Management Unit | In kind | \$9,000 |
| Recipient Government | St. Kitts and Nevis | In kind | \$500,000 |
| Recipient Governments | Dominica, Grenada, St. Lucia, St. Vincent and Grenadines | In-kind | \$300,000 |
| GEF Agency | UNEP | In kind | \$100,000 |
| NGO | CABI | In kind | \$300,000 |
| NGO | International Conservation Corps | In kind | \$300,000 |
| | Antigua and Barbuda Coast Guard | In kind | \$90,000 |
| NGO | Antigua and Barbuda National Parks Authority (NPA) | Cash | \$20,000 |
| NGO | FFI for Antigua Redonda Site | Cash | \$500,000 |
| NGO | FFI for Antigua Redonda Site | In kind | \$280,000 |
| NGO | Antigua Environmental Awareness Group (EAG) | In kind | \$50,000 |
| NGO | Barbados Sea Turtle Group | In Kind | \$300,000 |
| NGO | Dive Barbados Blue | In Kind | \$60,000 |
| Academia | UWI | In kind | \$500,000 |
| Multilateral | OECS Secretariat | In kind | \$300,000 |
| Multilateral | European Union | Cash | \$300,000 |
| Bilateral | USDA/APHIS/USAID/National Invasive Species Council | Cash | \$500,000 |
| Total Co-financing | | | \$6,627,412 |

⁵ For GEF Project Financing up to \$2 million, PMC could be up to 10% of the subtotal; above \$2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

a)

| GEF Agency | Trust Fund | Country/ Regional/ Global | Focal Area | Programm ing of Funds | (in \$) | | |
|----------------------------|------------|---------------------------|--------------|-----------------------|---------------------------|------------------------------|--------------------|
| | | | | | GEF Project Financing (a) | Agency Fee (b) ^{b)} | Total (c)=a+b |
| UNEP | GEFTF | Antigua and Barbuda | Biodiversity | BD | \$885,845 | \$84,155 | \$970,000 |
| UNEP | GEFTF | Barbados | Biodiversity | BD | \$1,114,155 | \$105,845 | \$1,220,000 |
| UNEP | GEFTF | St. Kitts and Nevis | Biodiversity | BD | \$620,091 | \$58,909 | \$679,000 |
| UNEP | GEFTF | Regional/Global | Biodiversity | BD | \$1,127,854 | \$107,146 | \$1,235,000 |
| Total GEF Resources | | | | | \$3,747,945 | \$356,055 | \$4,104,000 |

E. PROJECT PREPARATION GRANT (PPG)⁶

Is Project Preparation Grant requested? Yes No If no, skip item E.

PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

| Project Preparation Grant amount requested: \$ | | | | | PPG Agency Fee: | | |
|------------------------------------------------|------------|--------------------------|--------------|-----------------------|-----------------|-----------------------------|-----------------|
| GEF Agency | Trust Fund | Country/ Regional/Global | Focal Area | Programm ing of Funds | (in \$) | | |
| | | | | | PPG (a) | Agency Fee ⁷ (b) | Total c = a + b |
| UNEP | GEFTF | Antigua and Barbuda | Biodiversity | | 27,397 | 2,603 | 30,000 |
| UNEP | GEFTF | Barbados | Biodiversity | | 27,397 | 2,603 | 30,000 |
| UNEP | GEFTF | St. Kitts and Nevis | Biodiversity | | 19,178 | 1,822 | 21,000 |
| UNEP | GEFTF | Regional/Global | Biodiversity | | 59,361 | 5,639 | 65,000 |
| Total PPG Amount | | | | | 133,333 | 12,667 | 146,000 |

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS⁸

Provide the expected project targets as appropriate.

| Corporate Results | Replenishment Targets | Project Targets |
|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| 1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society | Improved management of landscapes and seascapes covering 300 million hectares | Antigua and Barbuda 44,000 ha Barbados 43,100 ha St. Kitts and Nevis 26,100 ha TOTAL 113,200 hectares. |

PART II: PROJECT JUSTIFICATION

Section 1. Project Description. Briefly describe:

1) The global environmental and/or adaptation problems, root causes and barriers that need to be addressed;

⁶ PPG requested amount is determined by the size of the GEF Project Financing (PF) as follows: Up to \$50k for PF upto \$1 mil; \$100k for PF up to \$3 mil; \$150k for PF up to \$6 mil; \$200k for PF up to \$10 mil; and \$300k for PF above \$10m. On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

⁷ PPG fee percentage follows the percentage of the Agency fee (9.5%) over the GEF Project Financing amount requested.

⁸ Provide those indicator values in this table to the extent applicable to your proposed project. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF and/or SCCF.

Islands are recognized as having exceptionally high numbers of endemic species, with 15% of bird, reptile and plant species on only 3% of the world's land area. The conservation significance of islands is highlighted by global analyses showing that 67% of the centers of marine endemism and 70% of coral reef hotspots are centered on islands. This unique flora and fauna is threatened by Invasive Alien Species (IAS).

IAS are those plants, animals and microbes which are introduced to new regions, mainly through human activities, where they establish and spread, impacting negatively on biodiversity, agriculture, water resources, and human health (Pimentel et al., 2001). Invasive species are distinct from "pests" in specifically having additional negative impacts on ecosystem services, including amongst others, such services as a stable hydrology for water supply and containment of floods; soil productivity, pollination functions, or containment of crop diseases for food crop production (Turpie, 2004; van Wilgen et al., 2008).

Since the year 1600 39% of animal extinctions arose mainly from the introduction of alien species, 36% from habitat destruction, and 23% from hunting or deliberate extermination. It is well documented that most of these extinctions occurred on islands, mainly as a result of IAS, with 80-90% of all reptile extinctions; 80-93% of all bird extinctions; and 50-81% of all mammal extinctions. Islands have suffered 64% of IUCN-listed extinctions and have 45% of IUCN-listed critically endangered species. In the past 500 years, IAS have contributed to the extinction of nearly half of global bird extinctions: 67% of globally threatened birds inhabiting oceanic islands are affected by IAS compared to 30% of globally threatened birds on continents. For example, over half of the endemic birds of the Hawaiian Islands are now extinct, due to habitat loss, introduced predators and diseases. **An analysis of the IUCN Red List reveals that despite covering only 0.15% of the Earth's land area, the Caribbean islands account for 10% of the world's bird extinctions, 38% of mammal extinctions, and >65% of reptile extinctions since 1500. At least two-thirds of these extinctions are attributed in part or full to invasive alien species.**

A review of Small Island Developing States (SIDS) of the OECS reveals uneven national policy, awareness and capacity to effectively deal with IAS on the scale required. St. Lucia and 4 additional non-OECS countries, made progress under the GEF financed project "Mitigating the Threat of Invasive Alien Species within the Insular Caribbean (MTIASIC), developed IAS policies, created awareness, built capacity, developed best management practices for selected IAS and produced a draft Regional IAS Strategy. There is some work being done by the OECS Commission and the Caribbean Ecosystem Partnership Fund (CEPF) also prioritized IAS for distribution of grants. On a global scale, there have been advances in techniques to prevent, control and eradicate invasives, and address threats to biodiversity technically, but it is not targeted, or easily found in order to engender necessary behavioural changes required at scale to slow the pace of extinctions and damage. This project seeks to transfer that knowledge/information to people in such a way that it makes people behave differently in the future. Lack of awareness at all levels of the current and potential costs of invasives to critical revenues such as fisheries and tourism is an area to be addressed. The current lack of regional cooperation is a major impediment, especially with regard to the management of pathways. Failure of one SIDS to effectively manage IAS means that all other islands are at increased risk. A review of available data from the six OECS countries reveals a wide range of invasives already affecting the economy, human and animal health and biodiversity of global significance.

| Country | Samples of recent invasives (<i>partial and indicative only</i>) |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Antigua and Barbuda | Papaya Mealybug (<i>Paracoccus marginatus</i>), Red Imported Fire Ant (<i>Solenopsis invicta</i>), Pink Hibiscus mealybug (<i>Maconellicoccus hirsutus</i>), Citrus black fly (<i>Alearocanthus woglomi</i>), Cuban laurel thrip (<i>Gynaikothrips ficorum</i>), Varroa Mite (<i>Varroa destructor</i>), Cuban Garden Snail (<i>Zachrysis provisoria</i>), Giant African Snail (<i>Lissachatina fulica</i>), Pacific Lionfish (<i>Pterois volitans</i>), Lemon grass (<i>Cymbopogon spp.</i>), Cuban tree frog (<i>Osteopilus septentrionalis</i>), small Asian Mongoose (<i>Herpe Zachrysis provisoriastes javanicus</i>), Lethal Yellowing (<i>Myndus crudus</i>), Black Rat (<i>Rattus rattus</i>), Brown Rat (<i>Rattus norvegicus</i>), feral goat (<i>Capra hircus</i>), feral pig (<i>Sus scrofa</i>), feral donkey (<i>Equus africanus asinus</i>), fallow deer (<i>Dama dama</i>), green iguana (<i>Iguana iguana</i>), yellow fever mosquito (<i>Aedes aegypti</i>), <i>invicta</i>), Red palm mite (<i>Raoiellai Indica</i>), West Indian fruit fly (<i>Anastrepha obliqua</i>), Golden apple snail (<i>Pomacea canaliculata</i>) agave weevil (<i>Scyphophorus acupunctatus</i>), Hairy Crazy ant (<i>Nylanderia fulva</i>), Budrot of palms (<i>Phytophthora palmivora</i>), Avocado Lace Bug (<i>Pseudacysta perseae</i>), Citrus huanglongbing (greening) (<i>Candidatus Liberibacter asiaticus</i>), and southern cattail (<i>Typha domingensis</i>). |
| Barbados | In Barbados, there is anecdotal evidence that some exotic plant species may be displacing local species in certain key habitats. For example, the cultivated Macarthur Palm (<i>Ptychosperma macarthurii</i>) seems to be displacing the indigenous Macaw Palm (<i>Aiphanes minima</i>) as the dominant understorey species. In certain forested gullies, the characteristic shrub layer has been replaced by solid stands of Sweet Lime (<i>Triphasia trifolia</i>) or Mother-in-law's tongue (<i>Savevieria hyacinthoides</i>), both of which are garden escapes. There is no quantitative information on the distribution and abundance of invasive species on a species by species basis in Barbados except for significant crop pests such as the diamond-back moth or significant livestock |

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| | parasites like the tropical bont tick. |
| Commonwealth of Dominica | Giant African Snail (<i>Lissachatina fulica</i>), Pacific lionfish (<i>Pterois volitans</i>), Brown citrus aphid (<i>Toxoptera citricida</i>), Citrus tristeza virus (CTV), Asian citrus psyllid (<i>Diaphorina citri</i>), Huanglongbing disease (<i>Candidatus liberibacter asiaticus</i>), Black Sigatoka disease (<i>Mycosphaerella fijiensis</i>), Red palm mite (<i>Raoiellai Indica</i>), Seagrass (<i>Halophila stipulacea</i>), and Lemon grass (<i>Cymbopogon</i> spp.), scaly insect (<i>Icerya schechellarum</i>), and The Chytrid fungus (on the Mountain Chicken, the native frog species of Dominica) |
| Grenada | Moko disease (<i>Ralstonia solanacearum</i>), Coconut mite (<i>Aceria guerreronis</i>), Pink hibiscus mealybug (<i>Maconellicoccus hirsutus</i>), Mango seed weevil (<i>Sternochetus mangiferae</i>), West Indian fruitfly (<i>Anastrepha obliqua</i>), Black Sigatoka disease (<i>Mycosphaerella fijiensis</i>), Red palm mite (<i>Raoiellai Indica</i>), White Cedar thrips (<i>Holopothrips inquilinus</i>), Leaf Cutting Ant (Carriacou), Seagrass (<i>Halophila stipulacea</i>), Pacific lionfish (<i>Pterois volitans</i>) Agricultural invasive species list: http://www.ciasnet.org/wp-content/uploads/2012/11/Grenada.doc |
| St. Kitts and Nevis | Silver leaf whitefly (<i>Bemisia argentifolii</i>), Cactus moth (<i>Cactoblastis cactorum</i>), Green vervet monkey (<i>Chlorocebus sabaesus</i>), Indian Mongoose (<i>Herpestes javanicus</i>), Pink Hibiscus mealybug (<i>Maconellicoccus hirsutus</i>), Tropical bont tick (<i>Amblyomma variegatum</i>), Pacific lionfish (<i>Pterois volitans</i>) The Green vervet monkeys (<i>Chlorocebus sabaesus</i>) which were originally brought to St. Kitts & Nevis from Africa by the French in the 17th century are rumored to outnumber the human population of St. Kitts and Nevis and are a priority for management. |
| St. Lucia | Daltry (2009) reported 346 IAS in Saint Lucia. Notable species present that are impacting on, or with the potential to severely impact biodiversity include: Orange winged parrot (<i>Amazona amazonica</i>) Cuban brown anole (<i>Anolis sagrei</i>) Cane toad (<i>Bufo marinus</i>); Rock pigeon (<i>Columba livia</i>) Feral cats (<i>Felis catus</i>) Feral dogs (<i>Canis lupus familiaris</i>) Alien iguana (<i>Iguana iguana</i>) Brown rat (<i>Rattus novaezelandicus</i>); Black rat (<i>Rattus rattus</i>); Feral pigs (<i>Sus scrofa</i>) small Asian mongoose (<i>Herpestes javanicus</i>) 160 invasive species in St. Lucia and their status: http://www.ciasnet.org/wp-content/uploads/2010/08/IAS-present-in-SLU-May-2012-revision.pdf . Please see 160 invasive species in St. Lucia and their status: http://www.ciasnet.org/wp-content/uploads/2010/08/IAS-present-in-SLU-May-2012-revision.pdf |
| St Vincent and the Grenadines | Formosa termite (<i>Coptotermes formosanus</i>), Mango seed weevil (<i>Sternochetus mangiferae</i>), Pink hibiscus mealybug (<i>Maconellicoccus hirsutus</i>), West Indian fruit fly (<i>Anastrepha obliqua</i>), Citrus black fly (<i>Alearocanthus woglomi</i>), Asian Citrus Psyllid (<i>Diaphorina citri</i>), Cycad Scale (<i>Aulacaspis yasumatsui</i>), Sloan slug (<i>Veronicella sloanei</i>), Black rat (<i>Rattus rattus</i>), Norway rat (<i>Rattus norvegicus</i>), Mouse (<i>Mus musculus</i>), Indian mongoose (<i>Herpestes javanicus</i>), Nine banded armadillo (<i>Dasyurus novemcinctus</i>), Cane toad (<i>Bufo marinus/Rhinella marina</i>), Johnstones whistling frog (<i>Eleutherodactylus johnstonei</i>), Rock dove (<i>Columba livia</i>), Indo-Pacific lionfish (<i>Pterois volitans and Pterois miles</i>), Ground lizard (<i>Ameiva ameiva</i>), House Gecko (<i>Hemidactylus mabouia</i>), Trumpet bush (<i>Cecropia peltata</i>), Water hyacinth (<i>Eichhornia crassipes</i>), Kudzu vine (<i>Pueraria montana</i>), African tulip tree (<i>Spathodea campanulata</i>), Singapore daisy (<i>Sphagneticola trilobata</i>), Lantana (<i>Lantana camara</i>), Leucaena (<i>Leucaena leucocephala</i>), Lemon grass (<i>Cymbopogon</i> sp.), Elephant grass (<i>Pennisetum purpureum</i>), Seagrass (<i>Halophila stipulacea</i>), Moko disease (<i>Ralstonia solanacearum</i>), Huanglongbing disease (<i>Candidatus liberibacter asiaticus</i>) |

Although precise figures on the impact of IAS regionally are not available, the Commonwealth of Dominica estimates for instance that management of the Giant African Snail is costing upwards of \$500,000/year, and that of citrus aphids is costing the economy \$1million a year. Black Sigatoka has cost \$1.2 million thus far. The Chytrid fungus has wiped out over 80% of the Mountain Chicken, the native frog species of Dominica. In many cases, the impact of IAS has not been quantified (e.g., the Cuban tree frog) and is based primarily on casual observations.

The following factors and root causes predispose the countries and the region to IAS:

- Global connectivity especially the marine environment makes the region vulnerable;

- High vulnerability to IAS due to geophysical and ecological complexities;
- Numerous pathways for introducing IAS and inadequate bio security measures;
- Lack of awareness and data to influence IAS relevant policy;
- Weak policy frameworks to address IAS;
- Limited capacity and effective tools to prevent, control and manage IAS; and
- Insufficient collaboration among Caribbean states to tackle IAS.

In the proposed project countries the management of IAS is not yet effectively addressed in terms of policy/legislation, professional capacity and active management and as such the impacts that IAS currently present and threats of future IAS introductions/incursions remains very high and is increasing as a result of land degradation and globalization.

Barrier 1: Insufficient awareness and data on the impact of all IAS on all sectors, which limits ability to influence policy

Barrier 2: Weak policy and institutional frameworks to address the early detection, prevention, management of IAS

Barrier 3: Limited technical capacity and effective tools to prevent, control and manage IAS

Barrier 4: Insufficient collaboration among countries of the OECS to effectively cooperate and tackle IAS

2. The baseline scenarios or any associated baseline projects:

A number of regional commitments have emerged in the international arena in the context of OECS countries. The Protocol Concerning Specially Protected Areas and Wildlife (SPA) Conference of Parties December 2014 Decision calls for support to regional invasive alien species efforts in collaboration with various partners. The OECS Meeting of Ministers in October 2014, made a commitment to tackle IAS as a priority for the region which was followed up by a workshop sponsored by the OECS Secretariat (see Stakeholder Section). The Caribbean Community's (CARICOM) Ministerial Council for Trade and Economic Development (COTED) – Ministers of Agriculture which met in Suriname in October 2014 encouraged Member States to review the Caribbean Invasive Alien Species Strategy and Action Plan (coming out of the GEF funded MTIASIC Project) for support and adoption. Furthermore, at the 3rd International Conference on SIDS in Sept 2014 participants called for support to enhance collaboration and improve efforts to eradicate and control and to develop and strengthen capacity to address IAS. At the regional level calls for concern and action are being made, but they lack supportive strategies to translate these assertions into meaningful action.

The completed UNEP-GEF Project, “Mitigating the Impacts of IAS in the Insular Caribbean” was active in the Bahamas, Jamaica, Dominican Republic, Trinidad and Tobago, and St Lucia. These SIDS have developed IAS policies, created awareness, built capacity, developed best management practices for selected IAS and produced a draft Regional IAS Strategy. A web portal for this project shares the many outputs, including national invasive species strategies, critical situational analyses, available data on IAS species, and cross referencing of good practices and resources.

Despite these outputs the region at large still remains at risk because a number of other SIDS have ineffective or no strategies to manage IAS. As such it is critical to include as many other SIDS in a Regional Strategy and to enhance national IAS management strategies throughout the region. The OECS region is a nine member grouping comprised by Antigua and Barbuda, the Commonwealth of Dominica, Grenada, Montserrat, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines. Anguilla and the British Virgin Islands. Six are eligible for support from the GEF, whilst the others are eligible for support from the European Union.

The European Commissions BEST (Biodiversity and Ecosystem Services in outermost regions and overseas countries and Territories) financing mechanism has a call for proposals which can benefit the English and Dutch speaking territories, which will be coordinated with this project.

The French Overseas territories have carried out some work which will be relevant to the six countries of the proposed project. This includes a diagnostic study carried out in Guadeloupe and Martinique on IAS (http://www.side.developpement-durable.gouv.fr/clientBookline/service/reference.asp?INSTANCE=exploitation&OUTPUT=PORTAL&DOCID=IFD_REFDOC_0518755&DOCBASE=IFD_SIDE).

A website on IAS developed by the IUCN French Committee includes a species and bibliographic database, and numerous documents such as protocols for control, guidelines for preventive action and regulations currently in force (<http://www.especies-envahissantes-oultremer.fr/>). See also the attached synthesis papers.

The IUCN SSC Invasive Species Specialist Group is working on developing annotated inventories of alien and invasive species for all countries in the Caribbean including Cuba and EU overseas countries. Data will be shared with the project. Island Conservation has produced databases on invasive species impacts on threatened species in protected areas.

A Caribbean lionfish regional strategy has also been developed (<http://www.car-spaw-rac.org/?International-partners-launch-plan,474>)

The USAID funded project “Reduce Risks to Human and Natural Assets Resulting from Climate Change (RRACC)” focuses in part on the issue of introduction of invasive species and has already provided support for a planning workshop for the proposed project.

A CBD Secretariat sponsored Workshop for Caribbean SIDS on invasive alien species is expected to take place during the second quarter of 2016, upon which the preparation of this project will build further.

Antigua and Barbuda Baseline Activities:

- Eradication of black rats (*Rattus rattus*) and, where present, small Asian mongooses (*Herpestes javanicus*), feral poultry (*Gallus gallus domesticus*) and goats (*Capra hircus*) from 15 islands off the North, East and West coasts of Antigua between 1995 and 2014 by the Antiguan Racer Conservation Project/ Offshore Islands Conservation Programme. Biosecurity surveillance systems established and maintained since 2002, including use of permanent bait stations to prevent rodent incursions. The removal of alien mammals has resulted in the near-exponential rise in many native animals and plants on the offshore islands, including the Critically Endangered Antiguan racer (*Alsophis antiguae*), whose population has increased from 50 to over 1,130 individuals. The project area is now globally recognised as a Key Biodiversity Area. Eradication and biosecurity work managed and implemented by the Environmental Awareness Group, Forestry Unit, Fauna & Flora International and Durrell Wildlife Conservation Trust.
- Development of project to restore Redonda: Feasibility study and key stakeholder consultations completed for removal of black rats and translocation of goats to Antigua to conservation of globally threatened species endemic to the island (including 3 extant Critically Endangered reptiles) and globally. Funding secured to commence implementation in 2016 Work led/ coordinated by Environmental Awareness Group, Environment Division, Fauna & Flora International and other partners.
- Control of mongooses at a sea turtle nesting site on Antigua by the Antigua Turtle Conservation Project.
- Giant African Snail (GAS) Eradication Program: Eradication of the GAS from Antigua and prevention of spread to Barbuda and other off-shore islands, GAS Eradication Task Force established (Chair: Plant Protection Organization)
- Lionfish Management Program: Management of the lionfish through education, removal and regional collaboration (Fisheries Division)
- Path to 2020. New GEF-6 project proposal further expanding protected areas reach, improving management effectiveness of protected areas system, and conserving and developing agro-biodiversity of significance.

Barbados Baseline Activities

- Barbados Primate Research Center- trapping of green monkeys for biomedical research
- Ministry of Agriculture- bounty on the Giant African Snail
- Fisheries Division /CZMU/UWI – Lionfish (*Pterois volitans*) research
- Ministry of Agriculture – Research and management of the Tropical Bont tick (*Amblyomma variegatum*)
- Ministry of Agriculture – Research and management of the Pink Mealy Bug
- Ministry of Environment and Drainage /Working Group on Biodiversity and Plant Quarantine Unit
- Restrictions/Prohibitions on importation of fauna and flora partially based on the invasive attributes of the species and its potential as a host of other organisms
- National Conservation Commission – Sargassum management on beaches
- Ministry of Environment and Drainage – Organization of The Snake Task Force
- University of the West Indies – Barbados Sea Turtle Project

- Legislative instruments include: Quarantine Act; The Animals (Diseases and Importation) Act; Protection of New Plant Varieties Act; CITES 2006-3 Act; Draft Zoos Act
- Preliminary surveys and consultations held in 2013 to develop a ‘mainland island’ to conserve the Endangered Barbados leaf toed gecko (*Phyllodactylus pulcher*). (A ‘mainland island’, sometimes called an ecological island, is an area enclosed by a pest-proof fence to exclude rats, cats and other harmful IAS animals). Project being developed by University of West Indies, Fauna & Flora International and Durrell Wildlife Conservation Trust.

Commonwealth of Dominica Baseline Activities

- No specific policy on invasive species in Dominica but the Forestry Division incorporates IAS in all sectoral programs.
- References to invasives lie within the Forest Act, Forest and Wildlife Act and The National Parks and Protected Areas Act.
- Restrictions/prohibition on importation of most flora and fauna into Dominica is based on the invasive attributes of the species itself and its potential as a host of other organisms.
- Monitoring of potential IAS introductions at ports of entry.
- Liaising with Plant Quarantine Units on emerging IAS at national level.
- Weekly forest, beach and river patrols to identify new species introductions.
- Public awareness and education programs highlighting the impacts of IAS.
- The Dominica Mountain Chicken (native frog) captive breeding program-in association with the London Zoo to reduce impacts of the introduced chytrid fungus.
- The recently submitted OECS-GCCA Regional CCA-SLM Project: “Reforestation of degraded dry scrub forest affected by invasive alien flora species using agroforestry methods to help build resilience to climate change”
Dominica notes in its NBSAP that there has been a significant increase in the introduced seagrass, *Halophila stipulaceae* which is displacing local species such as *Syringodium filiforme*, which supports the growth of pelagic fish and now covers 92% of the seabed in some areas.

Grenada Baseline Activities

- Biological control of the Pink hibiscus mealybug (successful in all OECS Countries)
- Mongoose Management project (on-going)
- Addressing predation of Grenada Doves by island invasive species was project sponsored by the American bird conservancy
- Rats have been shown to be both a serious agricultural pest as well as impacting biodiversity
- Fruitfly Programme (2002 to present)
- Banana Pest Control Programme
- Moko (1978 to present)
- Black Sigatoka (2006 to present)
- Mango Seed Weevil (ceased in 2002)
- Red Lionfish management (2013 to present)

St. Lucia Baseline Activities

- National Invasive Species Strategy (NISS) developed under the MTIASIC project in addition to draft legislation for prevention, control and management of invasive species
- Eradication of rats and, where present, mongooses, opossums, goats and sheep from Praslin Island (since 1994), Rat Island and Dennery Island (by Forestry Department, Durrell Wildlife Conservation Trust, Saint Lucia National Trust and Fauna & Flora International), as part of Saint Lucia Whiptail Project, Islands Without Aliens and other initiatives.
- Biosecurity mechanisms and capacity established to prevent new IAS introductions on Rat Island, Dennery Island, Praslin Island and both Maria Islands to conserve the globally threatened Saint Lucia whiptail lizard (*Cnemidophorus vanzoi*) (Vulnerable, to be uplisted to Endangered) and the Saint Lucia racer (*Erythrolamprus ornatus*) (Endangered, to be uplisted to Critically Endangered).
- Evaluated methods to control and eradicate alien iguana in the Soufriere area
- Thematic analyses of IAS completed for: aquatic and terrestrial ecosystems; prioritization of high risk pathways; capacity building and public awareness; policy gaps and needs assessment
- Extensive public awareness campaign done under the MTIASIC project
- Forestry is actively monitoring impact of feral animals on forestry ecosystems but has limited capacity to mitigate the serious threats posed in particular from feral pigs
- Control of invasive plants at the World Heritage site – the Pitons
- Control and management of many invasive species that affect agriculture sector

- Research into targeted (spatially and temporally) control of small Asian mongoose at native iguana nesting site by Durrell and Forestry Department.
- Feasibility assessment for establishing a “mainland island” – IAS eradicated within a predator-proof fence to enable the reintroduction and recovery of threatened species such as the Saint Lucia racer and white-breasted thrasher . (Feasibility study conducted by Fauna & Flora International, Wildlife Management International, Forestry Department and Durrell Wildlife Conservation Trust)

St. Kitts and Nevis Baseline Activities

- IAS management is undertaken for specific species as part of on-going departmental programmes or projects:
- The Primate (monkey) Control Project
- National Response to Loss of Coconut Palms Project
- Fruitfly Surveillance Programme (Carambola Fruit Fly, Mediterranean Fruit Fly)
- Monitoring for Invasive Alien Species at ports of entry
- Lion Fish management programme.
- Control of the Tropical Bont Tick in the late 80’s <http://onlinelibrary.wiley.com/doi/10.1111/j.1749-6632.2000.tb05308.x/abstract>
- Revised National Biodiversity Strategy and Action Plan-2014.
- Sustainable Land Management project-Department of Environment.
- National Environmental Management Strategy and Action Plan-Strategy 40.
- Agricultural Development Strategy 2013-2016 (Program 3-Agricultural Risk Management and Climate Change Adaptation).
- Currently updating the Plant Protection Act Cap 14.09 and Regulations.
- Biosafety Act-2012.

St. Vincent and Grenadines Baseline Activities

- Cycad scale (*Aulacaspis yasumatsui*) is a relatively new introduction that is affecting palms on the island is responsible for the death of palms at the botanic gardens
- Asian citrus psyllid responsible for the spread of citrus diseases severely impacting this sector
- Giant African Snail severe damage to agricultural crops potential threat to native snails as well as defacing building also a potential threat to human health
- Red palm mite affecting coconuts as well as a range of naturalized plants with potential to render the national tourism product less attractive
- Fruitflies makes the export of tropical fruits to the USA and other countries uneconomical
- Lionfish control programme

3) The proposed alternative scenario with a brief description of expected outcomes and components of the project:

The project aims to address the issue of invasive alien species at the national levels in Antigua and Barbuda, Barbados and St. Kitts and Nevis through the generation of knowledge pertaining to IAS and their pathways; development of policy and regulatory frameworks; capacity building, IAS prevention and management, and sub-regionally through the development and implementation of a sub-regional biosecurity plan. This will largely be achieved by engaging with stakeholders at the national and regional levels, and within all socio-economic groups, thereby providing these groups with the necessary skills to control and manage IAS in their areas. A greater understanding of the problems caused by IAS, and participation in the management and control of the species by all stakeholders will lead to greater benefits in terms of preserving local biodiversity and protecting new areas from the costs of invasions. The expected global environment benefits include contributions to reduce biodiversity loss in various ecosystems, as well as reducing the negative impacts and costs of IAS on livelihoods and economic development.

Component 1: Component 1. IAS Policy, Institutions and Capacity. The expected outcome would be to deliver at national and sub-regional OECS levels: a) prioritized risk management assessment, which would contribute to improved management frameworks with improved prevention, early detection and rapid response (EDRR), and control; b) strengthen institutional frameworks and policies at national levels in 3 countries and enhancing these at the regional level, thus contributing to an improved IAS management framework with improved prevention, EDRR, and control of IAS; and c) Improved management framework for prevention, EDRR and management of IAS – through tailored increased capacity and access to tools.

This would be achieved through the development and implementation of a suite of activities from the following:

a) prioritized risk management assessment

- Critical Situational Analyses Identification of the most important pathways of introduction with emphasis on species of global biodiversity significance. (accidental and deliberate), i.e., fisheries, agriculture, horticulture and landscaping, shipping (including ballast and fouling organisms, and cruise ships), air transportation, construction projects, aquaculture, tourism, and aquarium and pet trade. Analyses will take into account the Threatened Island Biodiversity database (TIB), an (overlay) compilation of Threatened species (as classified by the International Union for the Conservation of Nature or IUCN), invasive animals, and islands. The database can be viewed here: <http://tib.islandconservation.org/>
- Studies on biodiversity loss and economic impacts of IAS across productive sectors and human well being to build the case at the national, regional and international level to increase availability of financial and other resources to tackle problems cost effectively through prevention or at the early stages of invasion.

b) strengthen institutional frameworks and policies at national levels

- Review of legislation and penalties
- National Invasive Species Strategies established, which prioritize habitats and species to be protected.
- Cross sectoral arrangements agreed and institutionalized
- Develop and/or improve legal frameworks relating to IAS, including institutional arrangements and relevant laws and regulations - aimed at prevention, EDRR and control of IAS, e.g. development of policy e.g. agreement on a dirty list or clean list approach to importation of new species, limiting pet importations to species that would not be able to live in the wild should they escape, registering all captive breeding operations. Drawing from experience of MTIASIC project and the Pacific SIDS: national invasive species committee.
- Regulatory guidance and protocols established and implemented for identified high risk pathways and species (regional, tailored for national) with prioritization of habitats and species to be protected.
- Procedures, codes of conduct, incentives system developed

c) Improved management framework for prevention, EDRR and management of IAS

- Assessment and enhancement of national capacity to identify, control, and eradicate alien invasive species
- Public and private sector awareness and capacity developed and rolled out- internalizing IAS threats, impacts, and new controls and regulations. Training in surveillance (EDRR) of IAS threatening the region for relevant officers especially at ports of entry (customs, immigration, plant and animal quarantine inspectors, etc.).
- Public awareness campaign that focuses on making ALL stakeholders aware of the damage that can be done through introduction of invasives (Don't Pack a Pest initiative could be utilised and adopted).
- Enhancement of public awareness of the dangers of exotic pets becoming invasive, including a publically-accessible database maintained by the Ministry.
- Enhancement of capacity to prevent export of invasive species to other islands including assessment of use of ports for transshipments.
- Shared methodologies for prevention - national to regional and inter-island links and learning formalized. Establishment of a mechanism to allow sharing of case studies and lessons learned of invasive species throughout the OECS region which will assist participating countries in their risk assessment for importation of new species.
- Training in risk assessment, management/eradication approaches to control known invasive species, including development of strategies and actions to address/manage recent invasions versus long naturalised species, where there may now be economic benefits (e.g. attractions for tourists, biomedical research e.g. green monkeys)
- National data exchange for monitoring systematized. Development of a PIT tagging programme to distinguish legal introductions of species (e.g. reptiles), and distinguish them from captive bred specimens.
- Island wide surveillance systems (via agriculture extension services; fisheries, forestry and public health officers, academia (UWI), environmental NGOs and volunteers) with emphasis on pests of importance (but not currently present) including enhancing surveillance at the ports of entry
- Cost recovery financial mechanism designed and implemented. These could include for instance: importation bonds associated with ornamental plants for instance (hotel industry), other importation fees, fines at customs and fees associated with the tourism industry. In addition, CABI, working together with UNEP, has developed cost-recovery mechanisms for Ghana, Uganda, Ethiopia, Zambia and Indonesia. Below are some possible options with regard to cost-recovery:
 - Import levy on all goods entering the country, especially those which pose a significant risk such as horticultural/ornamental plants and pets;

- Fees for export certification/clearance services, to be recovered from exporters of certain products and live animals;
 - Charges from transport, travel & tour operators, and agriculture & construction machinery owners, traders transporting livestock, agricultural products and related goods;
 - Tourism levy similar to that imposed on visitors to Galapagos a large percentage of which is used for IAS management;
 - Fines for non-compliance with IAS management requirements and through general taxation;
 - Levy on water (invasive woody and aquatic invasive species use copious amounts of water).
- Infrastructure needs identified and prioritized for national/external funding (quarantine units, access to laboratory services, holding structures for IAS at ports of entries) for early management of IAS intercepted at these ports. The building of post entry quarantine facility would help enhance surveillance programs as plants could be kept in a secure area until diagnostics prove that they are not infested or infected with pests.

Component 2: Control of IAS Impacts on pilot sites of high biodiversity significance (2 countries). This component will include sites whereby eradication, management of IAS that are already present and protection measures for sites of high conservation value. The restoration of ecosystems during and after removing an IAS is of major importance in preventing new invasions, hence appropriate measures and techniques will be identified and recommended during preparation of this project and shared at a regional level to demonstrate best practice.

Antigua Pilot. Eradication of IAS on Redonda Island. Establishment of new and improved biosecurity mechanisms on Redonda and other critical offshore islands. Though only 1.5km across, Redonda supports rare and important biodiversity e.g. five endemic reptile species, four of which are Critically Endangered (Redonda ground lizard (*Ameiva atrata*), Redonda anole (*Anolis nubilus*), Redonda skink (*Copeoglossum redondae*) and Redonda pygmy gecko (*Sphaerodactylus sp. nov.*) and is a global Important Bird Area⁹. Surveys have confirmed severe ongoing declines in the diversity and abundance of fauna and flora. The main drivers of biodiversity loss and desertification are feral goats and black rats (*Rattus rattus*) left by the miners. Redonda as the highest priority island for eradicating IAS due to its threatened wildlife and excellent prospects of lasting success. This project will eradicate the rats, translocate the goats to Antigua (where the Department of Agriculture wishes to study and preserve this rare breed), and expedite the recovery of native species and habitats. This project has firm backing from the Governments of Antigua & Barbuda and Montserrat and civil society, who share a common vision for Redonda as an internationally recognised centre for conservation and research. The pilot will be carried out in partnership with FFI and EAG, whereby GEF will specifically support the restoration and long term management plan for post IAS removal. Activities include:

- * Two year rat eradication check on Redonda
- * Biosecurity surveillance (Redonda and offshore islands)
- * Biodiversity monitoring on Redonda and offshore islands
- * Protected area management plan
- * Establish Redonda protected area
- * Public outreach and consultations
- * Control of invasive plants on Redonda
- * Develop IAS guidelines and protocols for coastal developments
- * Survey of the economic values of IAS-free offshore islands
- * Publish and disseminate methods, results

By eliminating the invasive alien mammals—the single greatest threat to Redonda’s biodiversity and ecological processes (see co-financing) —this pilot project will have a swift, highly positive and permanent impact. The likelihood of this island being reinvaded is minimal because it is uninhabited and remote; and this project will leave in place an effective, affordable biosecurity. Formally protecting the island will further serve to pre-empt any future anthropogenic threats. Having eliminated the greatest threats to biodiversity, the costs of managing this site after the project ends are expected to be low and sustainable. A protected area management plan will set out the required actions and costs, and make strategic use of existing resources where appropriate (e.g. the Coastguard to assist with surveillance as part of its routine circuits around Redonda).

Barbados Pilot(s). Excluding marine turtles, there are 13 reptile species reported on Barbados, though two are probably extinct. The Barbados leaf-toed gecko (*Phyllodactylus pulcher*) and the Barbados threadsnake (*Tetracheilostoma carlae*) are endemic, as was the probably extinct Barbados racer (*Erythrolamprus perfuscus*) and skink (*Alinea lanceolata*). The Barbados threadsnake is a species of blind threadsnake. It is the smallest known snake species. This member of the Leptotyphlopidae family is found only

⁹ <http://www.birdlife.org/datazone/sitefactsheet.php?id=19939>

on the Caribbean island of Barbados. A fourth species, the Barbados anole (*Anolis extremus*), was endemic to Barbados but has been introduced to other islands. There are also several introduced reptiles including *Hemidactylus mabouia*, which may be having a negative impact on *Phyllodactylus pulcher*, and *Ramphotyphlops braminus* which may be negatively impacting *Tetracheilostoma carlae*. Four species of sea turtle are recorded from the waters of Barbados: the hawksbill (*Eretmochelys imbricata*), leatherback (*Dermochelys coriacea*), green turtle (*Chelonia mydas*), and, rarely, the loggerhead (*Caretta caretta*).

1) Establishment of a biosecure site(s) for threatened native reptiles at UWI (or another suitable location). Sufficient population size and flow will be taken up in the experimental design of the pilot. The status of Barbados endemic reptiles are much less well understood than the Jamaican iguana (for instance) as both Barbados species are small and cryptic and/or nocturnal. Recent assessments of *Phyllodactylus* indicate their presence in coastal limestone cliff habitats, but how their distribution and abundance is affected by invasives (rats, mongoose and house geckos) is currently unknown. The distribution of *Tetracheilostoma* is presently unassessed. Establishment of a bio-secure site will offer opportunities to study these little known species, and a place to breed them for reintroduction into the wild, as necessary. Eradication of rats and mongoose from Barbados is not proposed, but could be achieved at a small biosecure site, either Barbados' small (and only) offshore islet, a site at UWI or another suitable location.

Once established, biosecurity could be maintained by regular trapping and poisoning, for which small-scale funding would be sourced on an on-going basis to be sought by the University of the West Indies (UWI). The Ministry of Environment and Drainage has initiated discussions with additional groups and will further link cost recovery mechanisms to be explored under component 1.

2) Development (with GEF Financing) and implementation (co-financing) of a long term monitoring program on effectiveness of control of invasive alien plant species in support of the Integrated Gully System Management Plan to track effectiveness of control measures and population rebounds of endemic species. Monitoring of invasive species control and habitat restoration will enhance efforts advanced under the pilot above for stabilization and subsequent increases in populations of native endemic species, such as the Barbados leaf-toed gecko (*Phyllodactylus pulcher*) and the Barbados threadsnake (*Tetracheilostoma carlae*) and furthermore contribute to the valuable ecosystem services (watershed protection) provided by the Gully System. Activities will include the development of a manual on how best to identify the target species, including seedlings and how to eradicate them.

Sustainable financing of the monitoring program will be taken up by the Drainage Division, Ministry of Environment and Drainage, as well as the Ministry of Agriculture through recurrent governmental financing and cost recovery mechanisms to be explored under component 1, such as a water levy.

3) Rat and mongoose control at selected sea turtle nesting beaches. Barbados is currently home to the second-largest hawksbill turtle (*Eretmochelys imbricata*) nesting population in the Wider Caribbean, with up to 900 females nesting per year. Reduction in eating of turtle eggs will increase and stabilize populations of hawksbill, measurable impact. Barbados is currently home to the second-largest (critically endangered) hawksbill turtle (*Eretmochelys imbricata*) nesting population in the Wider Caribbean, with up to 900 females nesting per year. Mongoose predation on hawksbill eggs is confined to particular beaches (one of which, Bath, is genetically distinct from the rest of the island) and the behaviour may be socially transmitted. Eradication of mongooses at these locations is feasible. Once traps have been bought and persons trained in trapping and safe handling, the support of local hotels and communities in sustaining trapping effort is anticipated. If not, consideration could be given to the implementation of a small bounty by the Government. Reduction in eating of turtle eggs and hatchlings will have a measurable impact on reproductive success.

Sustainable financing of the continuous control of rats and mongoose will be explored through the hotel industry (on habitat beaches), partnership with the Barbados Sea Turtle Project (University of the West Indies Cave Hill Campus), the Ministry of Health and its Vector Programme and cost recovery mechanisms to be explored under component 1, such as a levy on tourists viewing the laying of eggs, or release of hatchlings.

4) Lionfish assessment and management project at high biodiversity value reef sites. Focused lionfish control efforts in strategic locations, targeted interventions have been found to have sustainable impacts in increasing recruitment at key life stages of coral reef fishes. such as the fairy basslet (*Gramma loreto*), bridled cardinalfish (*Apogon aurolineatus*), white grunt (*Haemulon plumierii*), bicolor damselfish (*Stegastes partitus*), several wrasses (*Halichoeres bivittatus*, *H. garnoti*, and *Thalassoma bifasciatum*), striped parrotfish (*Scarus iserti*), Criteria for site selection and indicator species for monitoring to be selected during preparation process. Lessons learned from targeted removal experiences (baited traps for instance) in The Bahamas, Bonaire, Cayman Islands will be integrated into project design.

Sustainable financing of continued removals and monitoring of lionfish at targeted sites of high biodiversity value will be taken up by: a) the recurrent financing of the Coastal Zone Management Unit (CZMU), which is responsible for inter alia coral reef monitoring, regulation of marine research, public education of ICZM, coastal conservation project designs and management, and the review of any coastal projects, b) the Fisheries Division, c) development of partnerships with the Barbados dive community and dive shops which has shown to be successful in a number of countries, including The Bahamas, Bonaire, Little Cayman Islands; d) partnerships with potential lionfish fishers and restaurateur markets and d) cost recovery mechanisms to be explored under component 1.

Component 3: Regional Biosecurity (7 countries). The expected outcome of this component is to avoid species extinction through enhanced IAS management -- through early warning system, response measures and capacity building for management of IAS at the regional level (7 countries). For effective IAS management across the region it is critical scale up further the existing Regional Strategy and Regional IAS Working Groups. Best management practices for shared regional IAS will also be developed. In addition, every effort will be made to develop awareness material in the target countries that can also be used to create awareness elsewhere in the region. Regional IAS Identification Guides will also be developed and the Invasive Species Compendium enhanced to include information on additional IAS in the region. Efforts will also be made to develop a mobile app. to create awareness across a wider group of people and also to aid agency efforts in terms of prevention and EDRR. In addition to the work of the Regional IAS Working Groups, efforts will also be made to establish a Regional Biological Control Working Group to create awareness about the benefits of biological control which will also lead to the sharing of biocontrol agents to manage shared problems. Efforts will also be made to develop shared financing mechanisms to combat shared problems. Resources allocated to regional activities will also be used to provide countries with technical resources in the development and implementation of national activities. This regional component would further increase collaboration among Caribbean states to tackle IAS to avoid species extinctions as a result of improved IAS management:

A. Strategy and Coordination

- Review of ports of entry to identify gaps in surveillance activities and develop an action plans for upgrading infrastructure; human capacity and adopting international best practices. Biosecurity Needs Assessment
- Regional gaps identified to inform strategies and action plans for preventing new introductions surveillance at ports of entry (i.e. customs) implemented.
- Modelling for an early detection and rapid response (EDRR) developed and implemented regionally at high risk entry points and along priority pathways.
- Development of emergency action plans for IAS in the sub-region., including joint funding, to eradicate recent pest incursions. Efforts could be based on coordinated activities associated with oil spills and other man-made disasters in the Caribbean. For example, the International Convention on Oil Pollution Preparedness, Response, and Co-operation (OPRC 1990) and the Protocol Concerning Co-operation in Combating Oil Spills in the Wider Caribbean Region, (Oil Spills Protocol 1983) under the Convention for the Development and Protection of the Marine Environment of the Wider Caribbean Region, (Cartagena Convention 1983), and the Caribbean Island OPRC Plan 2008 have systems in place which include regional cooperation in dealing with oil spills. Every attempt to enhance the national biosecurity capability will be made by:
 - Simplification of legislation and condensing of biosecurity jurisdictions.
 - Development of a national biosecurity strategy and establishment of cross-sectoral priorities.
 - Better use of resources (e.g. sharing of methodologies, sharing of border inspection systems, training).
 - Rationalization of controls.
 - Shared certification where appropriate.
 - Improved data acquisition and quality.
 - Improved emergency preparedness and response (including contingency planning).
 - Integrated response to new and emerging issues (e.g. combining veterinary, agriculture, biodiversity, public health, food safety, etc. agencies).
 - Integrated pest management (IPM) programmes (e.g. appropriate use of pesticides to achieve pest control goals while ensuring human health, protection of the environment and sustainability of agriculture).
 - Integrated surveillance (e.g. systems capable of detecting any unexpected adverse public health or environmental effects).
 - Integrated traceability systems.
 - Greater acceptance of privatization of some biosecurity services

B. Capacity Building and Awareness

- Build national capacity in the sub region to conduct risk assessment and measure economic impact of IAS and benefits of their management

- Training for port officials on capture, detecting, detaining and eliminating possible IAS threats on site (if national funds made available).
- Awareness module developed and delivered for agriculture, health, wildlife and forestry, fisheries, NGOs, community organizations, academia, volunteers and national security personnel engaged in surveillance. Regional data exchange for monitoring systematized on a sustainable platform. Awareness module developed and delivered for personnel engaged in surveillance to the open sources of data for identifying IAS. Database management and linked website and regional blacklists; invasive species for surveillance and control of importations.
- Database of regional expertise established on a sustainable platform (CIASNET, maintained by CABI)
- Drawing from experience of MTIASIC project (CIASNET) and the Pacific SIDS: enhancing a Caribbean IAS Learning Network, including exchanges which benefit Barbados and OECS countries. Furthermore reciprocity and learning exchanges with the Pacific Island initiatives will be further enhanced.
- Regional App or ID IAS risk cards for prioritized species that can affect important biodiversity, agriculture, and human health developed for ports of entry

4) Incremental/additional cost reasoning and expected contribution from baseline

Changes in policies, enhanced capacity, increased awareness and regional cooperation with a focus on high risk pathways and prevention will significantly enhance IAS management with regard to early-warning about potential invaders, their rapid detection and identification, as well as the sharing of biological information amongst all stakeholders, risk assessments, and monitoring and control techniques which are invaluable tools to help prevent spread and establishment of potential invasive species. By building on and enhancing efforts at the national level outlined in 2) above, this project will complement and enhance existing invasive species activities in the region by assisting the process of drawing all SIDS into a comprehensive regional framework, linking production- and conservation-based initiatives, providing regionally-facilitated efficient and effective support-raising, information-sharing, research and management mechanisms, while building national capacity and helping establish financial sustainability for invasive species management in the OECS States.

In summary, without these interventions biodiversity loss in proposed project countries will be exacerbated. Combined with climate change and increased land degradation together with an escalation in global trade, travel and tourism, IAS are predicted to proliferate to the detriment of economic development. If implemented the project will reduce biodiversity loss at a national and regional level and improve management effectiveness and costs in protected areas and biodiversity hotspots. Postponing IAS management activities will not only exacerbate biodiversity loss but also increase costs with regards to impacts and also management interventions. The cost-effectiveness of the proposed project is therefore a function of the potential damage caused by IAS in the Caribbean and particularly the OECS states in the absence of any project intervention. By investing resources in IAS management now a considerable amount of money will be saved in the long-term.

5. Global environmental benefits (GEBs)

As the fifth most important of 35 global biodiversity hotspot, the wider Caribbean is home to some of the world's most unique and threatened species of plants and animals. According to Conservation International, 50.4 (6550), 46.1 (41), 27 (163), 93.4 (469), 100 (170), and 34 (65) percent of plant, mammal, bird, reptile, amphibian, and freshwater fishes, respectively, are endemic to the Caribbean Islands. The previous is actually older data and it is now known, according to www.caribherp.com, that there are at least 586 reptile species in the Caribbean Islands. Experts predict that this number will climb to nearly 1,000 over the next decade. It is estimated that at least 36 different genera of birds are endemic to the region, as well as two endemic families: the palmchat (*Dulus dominicus*) of the family Dulidae and the todies (family Todidae). Forty-eight bird species endemic to the hotspot are threatened with extinction, including the Puerto Rican nightjar (*Caprimulgus noctitherus*, CR), Zapata rail (*Cyanolimnas cerverai*, EN), Zapata wren (*Ferminia cerverai*, EN), and Grenada dove (*Leptotila wellsii*, CR). Estimates by Conservation International (2008) indicate that 13 bird species have already gone extinct with several parrots in the OECS region endangered such as the St. Vincent parrot (*Amazona guildingii*, VU), the Saint Lucian parrot (*Amazona versicolor*, VU), and the Imperial parrot (*Amazona imperialis*, EN) of Dominica.

The Caribbean region is globally recognized as being especially rich in species of reptiles with 150 endemic species of anoles (*Anolis* spp.), 82 endemic species of dwarf geckos (*Sphaerodactylus* spp.), and 23 endemic species of curly tail lizards (*Leiocephalus* spp.). The region also boasts the world's smallest snake, *Leptotyphlops bilineata*, including the most threatened rattlesnake in the world - the endemic Aruba rattlesnake (*Crotalus unicolor*, CR) of which only 250 individuals are thought to still be alive and the rarest snake in the world, the Saint Lucia racer of which only 20 individuals are thought to be alive. In addition to its reptile populations, the region is also globally recognized as having very high amphibian endemism with most species being endemic to single islands. The second largest frog found in the Western hemisphere, *Leptodactylus fallax*, otherwise known in Dominica as "mountain chicken" is considered extinct in St Lucia, St Kitts & Nevis and Martinique (maybe

others). There is a tiny population on Montserrat, recently augmented by reintroductions from captive stock, plus a very small and fragmented (by larger than Montserrat's) on Dominica.

A meeting in Puerto Rico in July 2015 assessed the majority of Caribbean island reptile species (ca. 750) for IUCN's Red List. This is likely to dramatically increase the number of reptiles in the region recognized as globally threatened. The preliminary analyses indicates as many as one third of reptile species in the Lesser Antilles qualify as Critically Endangered, with similarly high threat levels in other parts of the region.

Importantly, many species are endemic to small areas: in some cases only a few hectares in area (e.g. the anole *Anolis ernestwilliamsi* is endemic to the 1.2 hectare Carrot Island, BVI). Some of the most important conservation sites in this region are remarkably small. For example, Saint Lucia's Maria Islands are only 12 hectares in area yet support globally significant bird colonies, the entire world population of Saint Lucia racers, the only Lesser Antillean population of rock gecko, an endemic subspecies of pygmy gecko and worm lizard and, until recently, the entire population of Saint Lucia whiptail lizards. Consequently, investing in even relatively small areas can save species from extinction.

The expected global benefits of this project include improved management frameworks to prevent, control and manage IAS and contributing effectively to the reduction in loss of biodiversity. Project benefits are also expected to reduce the negative impacts of IAS on national economies and local livelihoods. It is widely acknowledged and understood that IAS have a significant impact on the goods and services provided by ecosystems (Turpie, 2004; Strayer, 2012; van Wilgen et al., 2013) and that their management can contribute significantly to ecosystem function (van Wilgen et al., 2013).

Overarching global environmental benefits will be the reduction of IAS of high risk to biodiversity from entering Antigua and Barbuda (44,000 ha); Barbados (43,100 ha); and St. Kitts and Nevis (26,100 ha) and overarching species extinction avoided regionally in the OECS as a result of enhanced IAS management -- through early warning system, response measures and capacity building for management of IAS at the regional level and reporting on invasives in all 7 countries, with expected improvements over the life of the project. This will be measured by applying the Program 4 tracking tool. The project will further reduce the impact of IAS on a number of species of global significance including in Antigua and in Barbados of: Redonda ground lizard (*Ameiva atrata*), Redonda anole (*Anolis nubilus*), Redonda skink (*Copeoglossum redondae*) and Redonda pygmy gecko (*Sphaerodactylus* sp. nov.), Barbados leaf-toed gecko (*Phyllodactylus pulcher*) and the Barbados threadsnake (*Tetracheilostoma carlae*). Enhanced management of St. Kitts green vervet monkey as a result of actions to be taken under component 1 in St. Kitts – the vervet believed to be at least in part responsible for the now extinct the St. Kitts Bullfinch and impacting the habitats of several endemic species, to be further developed under preparation phase. In Barbados, improved breeding success of globally important IAS-threatened hawksbill sea turtles (*Eretmochelys imbricata*) and targeted removal of lionfish on key coral reef sites of high global biodiversity significance will have global benefits including enhanced recruitment and critical life stages of key coral reef fishes such as the fairy basslet (*Gramma loreto*), bridled cardinalfish (*Apogon aurolineatus*), white grunt (*Haemulon plumieri*), bicolor damselfish (*Stegastes partitus*), several wrasses (*Halichoeres bivittatus*, *H. garnoti*, and *Thalassoma bifasciatum*), striped parrotfish (*Scarus iserti*), and dusky blenny (*Malacoctenus gilli*) are just some of the impacted species. Comprehensive prevention, early detection control and management frameworks that emphasize risk management approach at highest risk invasion pathways will deliver the GEF of reducing new invasions. Cost recovery mechanisms embedded into enabling environments will assure sustainability of GEBs.

6. Innovation, Sustainability and potential for scaling up

Innovativeness, sustainability and potential for scaling up:

Component 1 features the added innovation of addressing the need for cost recovery mechanisms to be embedded in enabling environments. Component 2 is innovative in that it is exploring through pilots who directly address the need for eradication, and control of IAS whilst restoring habitat that will enable re-introduction and sustainable management of habitats critical for endangered and endemic species. Component 3's innovation lies in the creation of replicable awareness building and capacity building modules tailored for the region, as well as the creation of cutting edge smart tools (an APP for the identification of IAS) for upscaling.

The majority of SIDS in the Caribbean have similar barriers to effective IAS management such as a lack of effective policies and little awareness and capacity. These issues need to be addressed in order to enhance IAS management. Although these issues will also be addressed in the proposed project as they have in previous and current UNEP-GEF projects in Africa, the Caribbean and Asia there will be more of a focus on identifying IAS pathways and their management and enhanced regional cooperation. This focused approach should contribute to improved mechanisms to prevent the introduction of IAS.

Capacity building and awareness creation will contribute significantly to sustainability. The development and implementation of National Invasive Species Strategy and Action Plan and a Regional Strategy with IAS management strategies for selected species will also make a significant contribution to ensuring that IAS management activities are sustained. Tools, such as IAS Identification Guides and mobile Apps, which will also include information on best management practices, will play a significant role in ensuring that activities with regard to IAS management continue well into the future.

The project will lay the foundations to ensure that there will be potential for scaling up in the future. The development and implementation of policies and capacity building will all contribute to scaling up of IAS management activities in the future. The development of baseline data on the distribution of IAS and their impacts together with some cost-benefit analyses will provide policy makers and government officials with the necessary information to develop and implement additional policies together with financing mechanisms to manage IAS more effectively. The development of identification tools will also make more information available on how to identify and best manage IAS, information largely lacking to date in OECS countries. Modeling best practice at strategy, management and operational levels including learning modalities sets the foundation for the OECS sub region and broader regional and inter-SIDS (Pacific) cooperation.

Section 2. Stakeholders. Will project design include the participation of relevant stakeholders from civil society and indigenous people? (yes / no) If yes, identify key stakeholders and briefly describe how they will be engaged in project design/preparation:

From 25-26 February 2015, the OECS hosted a Regional Consultation to formulate a Plan of Action for invasive species for the OECS . The Regional Consultation, convened by the Organization of Eastern Caribbean States (OECS) Commission, from 25 to 26 February 2015. The Consultation assessed the gaps, challenges, priorities and capacity building needs regarding invasive species. The OECS Commission, through the Reducing Risk to Human and Natural Assets Resulting from Climate Change (RRACC) project in collaboration with the Ocean Governance Unit conducted the consultation with approximately 30 leaders from different sectors, such as fisheries, agriculture/forestry, tourism, maritime in the member states and beyond to draw on their expertise and included Academic institutions, Government agencies and national and local authorities, NGOs, International, regional, sub-regional authorities (Attachment 1). In addition to the national stakeholders of the respective 6 countries listed in Attachment 1, regional and international stakeholders below, a consultative process during the project preparation phase will ensure inclusiveness at the community levels.

| Stakeholder | Role in Project |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Antigua and Barbuda: Ministry of Health and the Environment: Environment Division; Ministry of Agriculture, Lands, Fisheries and Barbuda Affairs: Forestry Division, Development Control Authority, Fisheries Division, Land Division Agricultural Extension Division, Plant Protection Unit; Ministry of Tourism, Economic Development, Investment & Energy. Ministry of Legal Affairs, Public Safety, Immigration and Labour: Attorney General’s Office, National Parks Authority; Mount Obama Committee; Hotel and Tourist Association, Cruise Tourism Association, Historical Archaeological Society, Coast Guard, Caribbean Helicopters, farmer associations, tour operators (eg. Dive shops) | Lead and participating national agencies/entities |
| Barbados: Ministry of Environment and Drainage, inc Multi-disciplinary Working Group on Biodiversity. Additional government agencies: Plant Quarantine, Veterinary Services, Coastal Zone Management Unit, National Conservation Commission, Fisheries Division and the Ministry of Agriculture. University of the West Indies, , farmer associations, tour operators (eg. Dive shops) | Lead and participating national agencies/entities |
| Commonwealth of Dominica. | GEF Project National Focal Point |
| Grenada. | GEF Project National Focal Point |
| St. Kitts and Nevis governmental and non governmental: (Department of Tourism, Department of Environmental Health, St. Kitts Tourism Authority, Nevis Tourism Authority, Department of Youth Empowerment (St. Kitts and Nevis offices), National Emergency Management Agency, St. Kitts Bird Watch Society (not sure if this is correct name of group), St. Christopher National Trust, Nevis Historical Society, Department of Maritime Affairs (St. Kitts and Nevis offices), Coast Guard, Department of Legal Affairs and Justice, St. Mary’s Man and Biosphere community group, Sandy Pointers Inspiring Real Improvement Throughout-SPIRIT [Sandy Point community group], Police Department, OECS Secretariat, CARICOM Secretariat, UNESCO national focal point, GEF operational focal point, Ministry of Sustainable Development, National CARICOM | Lead and participating national agencies/entities |

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Youth Ambassadors, Customs and Excise Department (St. Kitts and Nevis branches), St. Christopher Air and Sea Ports Authority, Nevis Air and Sea Ports Authority, Ministry of Agriculture, Ministry of Health, Ministry of Environment, Ministry of Sustainable Development, Mr. Melvin James-retired entomologist, Caribbean Agricultural Research and Development Institute-CARDI, Inter American Institute for Cooperation on Agriculture-IICA, Republic of China on Taiwan Agricultural Technical Mission, Mrs. Ilis Watts-consultant (agriculture, GEF Small Grants Programme), major Plant Nursery Owners, St. Kitts and Nevis Bureau of Standards, Caribbean Regional Organization for Standards and Quality-CROSQ, Clarence Fitzroy Bryant College, Caribbean Agricultural Health and Food Safety Agency-CAHFSA, Brimstone Hill Fortress National Society, Green Valley community group, Positively Inclined-youth advocate/activist company, media), , farmer associations, tour operators (eg. Dive shops) | |
| St. Lucia | GEF Project National Focal Point |
| St. Vincent and the Grenadines | GEF Project National Focal Point |
| UNEP (& Caribbean regional activity centers) | GEF Implementing Agency & Partner Agency |
| CABI | Regional Executing Agency |
| Caribbean Regional Fisheries Mechanism (CRFM) | Partner Agency |
| Caribbean Agricultural Research & Development Institute (CARDI) | Partner Agency |
| Royal Society for the Protection of Birds (RSPB) | Partner Agency |
| Birdlife International | Partner Agency |
| International Maritime Organization (IMO) | Partner Agency |
| Durrell Wildlife Conservation Trust | Partner Agency |
| Fauna & Flora International (FFI) | Partner Agency |
| Environmental Awareness Group (EAG), Antigua | Partner Agency |
| Saint Lucia National Trust | Partner Agency |
| USDA/APHIS | Partner Agency |
| CARIBBEAN PUBLIC HEALTH AGENCY (CARPHA) | Partner Agency |
| UNIVERSITY OF THE WEST INDIES (UWI) | Partner Agency |
| CARIBBEAN COMMUNITY SECRETARIAT – CARICOM | Partner Agency |
| ORGANISATION OF EASTERN CARIBBEAN STATES – OECS Secretariat | Partner Agency |

Section 3. Gender Considerations. Are gender considerations taken into account? (yes /no). If yes, briefly describe how gender considerations will be mainstreamed into project preparation, taken into account the differences, needs, roles and priorities of men and women.

Gender and social issues will be fully considered in this project, as they are important drivers and incentives for achieving global environmental benefits, a critical element for the success of the project. Gender accountability is a cross-cutting issue at both the project level and component level and will be tracked as part of the M&E system. Special attention will be paid to gender issues in developing socioeconomic indicators, and in the capacity-building activities. Socio-economic related activities will seek to build on existing information on the actual benefits women and disadvantaged communities can obtain from ecosystems. The integrated natural resources management process supported by this project will be fully participatory and will promote appropriate allocations among competing uses, equitable distribution of benefits and burdens, adequate involvement of both women and men and community participation.

Section 4 Risk. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable):

| Risk Description | Level | Proposed Measure |
|------------------|-------|------------------|
|------------------|-------|------------------|

| | | |
|------------------------------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prioritizing prevention over management in terms of cost effectiveness. | Moderate | Early warning systems, emphasizing critical pathways developed |
| Unsustainable financing | High | <p>Cost recovery mechanisms will be an output Component 1 and linked to enabling policy environment supported by the project.</p> <p>Component 3 delivered in the sub region, will conduct risk assessment and measure economic impact of IAS aimed at decision makers and aimed increasing financial support for IAS prevention both nationally and regionally. It is critical to recognize that increased awareness as to the negative impacts of IAS and the benefits of management will result in increased funding for their control. This is why it is important to generate information on the costs and benefits of control.</p> <p>Lessons learned (cost recovery and economic impact) to be shared regionally.</p> |
| Increased international tourism trade and transport | Moderate | Increased and sector prioritized public awareness & education campaigns |
| Access to data due to possible trade implications | High | Regional exchange of data |
| Climate Change related habitat shifts and destruction create conditions for the spread of invasive species | High | Increased study and surveillance of invasions, data collection and develop management plans to address problems |

Section 5. Coordination. Outline the coordination with other relevant GEF-financed and other initiatives:

- REGIONAL - Implementing Integrated Land, Water & Wastewater Management in Caribbean SIDS (IWECO). A recently approved UNEP/GEF project under preparation will focus on the implementation of an integrated approach to water, land and ecosystems services management, supported by policy, institutional and legislative reforms, and implementation of effective appropriate technologies to accelerate contribution to global targets on access to safe and reliable water supplies and improved sanitation, and contributing to improved ecosystem functioning in the Caribbean
- REGIONAL - Sustainable Financing and Management of Eastern Caribbean Marine Ecosystems. This regional project is funded by the GEF and implemented by the World Bank through The Nature Conservancy. Its purpose is to improve the management of existing and expanded marine protected area networks through the establishment of sustainable financing mechanisms including 5 of the 6 OECS countries
- REGIONAL - USAID/OECS Climate Variability, Change and Mitigation Project: The USAID climate change support for the countries in the Eastern Caribbean will complement overlapping initiatives it previously supported under its biodiversity support to the region.
- REGIONAL - Global Climate Change Alliance (GCCA) project on Climate Change Adaptation and Sustainable Land Management in the Eastern Caribbean.

- REGIONAL - Reduce Risks to Human & Natural Assets Resulting from Climate Change (RRACC) . The planned activities will be implemented over a 5-year period and is funded under the Climate Change programme of the United States Agency for International Development (USAID). The six independent Member States of the OECS (viz Antigua and Barbuda, Dominica, Grenada, St Kitts and Nevis, Saint Lucia, and St Vincent and the Grenadines) will benefit from investments allocated for financial and technical support and the project will allow for activities in vulnerable communities and areas, including cross support to addressing the introduction of invasive species.

- REGIONAL - The Critical Ecosystem Partnership Fund (CEPF) in the Caribbean Islands Biodiversity Hotspots as implemented by the Caribbean Natural Resources Institute (CANARI) is a joint initiative of l'Agence Française de Développement, Conservation International, the Global Environment Facility, the Government of Japan, the John D. and Catherine T. MacArthur Foundation, and the World Bank. The goal of the CEPF is to support the work of civil society in developing and implementing conservation strategies, as well as in raising public awareness on the implications of loss of biodiversity and features a special emphasis on invasives.

- PACIFIC Pacific Invasives Learning Network, SPREP IAS Programme, Pacific Invasives Partnership, UNEP-GEF Pacific IAS Project.

The proposed project is consistent with UNEP's Ecosystem Management sub-Programme of Work for 2014-2017. This project specifically aligns with UNEP's expected accomplishment of "use of the ecosystem approach in countries to maintain ecosystem services and sustainable productivity of terrestrial and aquatic systems is increased" and " services and benefits derived from ecosystems are integrated with development planning and accounting, and the implementation of biodiversity and ecosystem related multilateral agreements" and will specifically contribute to output (a) (1) Methodologies, partnerships and tools to maintain or restore ecosystem services and integrate the ecosystem management approach with the conservation and management of ecosystems .

The project will also benefit from the recognized expertise of the Caribbean Environment Programme Regional Coordinating Unit/Secretariat to the Cartagena Convention in matters related to the marine and coastal environment and in working in a multi-lingual environment, as well as its expertise in implementing the Cartagena Convention and particularly its SPAW Protocols. CAR RCU's specialized Regional Activity Centre for the Implementation of the Protocols on Specially Protected Areas and Wildlife is located in Guadeloupe and supported by the Government of France. The project will include this specialized technical RAC and the newly established UNEP sub-regional office, also in Jamaica, in its networking and coordination activities, in any stakeholder and partnership arrangements.

At country level, for the three countries which are diving deep into the issue of invasive alien species with STAR resources, a 'National Project Steering Committee' (NSC) would be formed to provide support and validation to proposed activities and also to ensure the necessary inter-institutional coordination at the national level.

Building on the experience of the MTIASIC project, it is proposed that the project feature an International Project Steering Committee (IPSC) which would meet annually with a view towards coordination, adaptive management and exchanges of experiences and lessons learned. Building on the consultative process which has been underway for the past 18 months, the International Project Steering Committee would also feature key regional partners. These arrangements will be further developed during project preparation to ensure inclusiveness of key regional partners active in relevant arenas. Further drawing from experience of MTIASIC project (which implemented several Caribbean – Pacific exchanges) and the proposed Pacific SIDS project, the international coordination mechanism will seek to formalize reciprocity and learning exchanges with the Pacific Island initiative by exploring junctures in coordinative mechanisms and specific activities under Component 3. The Project will also look at the development of a Regional Invasive Species Working Group.

Section 6. Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.:

The **Antigua and Barbuda National Biodiversity Strategic Action Plan (2014-2020)** lists the 20 most recent invasives, and identifies invasives as a threat to coral reefs and a cause of forest fire (lemon grass invasion). Recommended actions specifically call for regulations to curb the importation of potentially invasive species that pose a danger to biodiversity. The following indicators are suggested as a measure of success for the achievement of Aichi Target 9 :

- Reports on the identification of invasive species and the pathways identified
- Number of border control officers (and any other agencies responsible for monitoring species) trained in identifying alien species

- Monthly monitoring reports from the relevant agencies within the Ministry of Agriculture and all other relevant ministries and NGOs

The following activities are outlined:

- Completed protocol document on managing the relevant invasive species
 - Collate existing information on the programs currently under way on the management of invasive species as baseline for effective management of invasive species.
 - Initiate training programs for border control officers on invasive species identification and management.
- Support the establishment of biosecurity measures at air and seaports e.g. systems for confiscation and destruction of illegal plant and animals or their products; use of canines to increase detection of potential bio-security risks
- Establish reporting links between the Environment Division and relevant NGOs on work being undertaken regarding invasive species.
 - Utilize the Environmental Information Management and Advisory System (EIMAS) to initiate monitoring and management of invasive species.
 - Source regional and international information to strengthen the work at the national level on invasive species.
 - Develop a legal policy document on invasive species.

Target 12: By 2020 Implement protection measures for threatened species including the racer snake, marine turtles, Redonda Dwarf Gecko, Redonda Ground Lizard, threatened plants, and threatened birds.

Indicators:

- Population densities for identified species
- Successful re-introduction of ex-situ specimens
- Successful eradication of known alien invasive predators
- Establishment of a sanctuary for ex-situ specimens within the Botanical gardens and other relevant areas
- Protection of critical habitats for threatened species

Activities to be implemented:

- Support the current work being undertaken to identify threatened species as indicated in the target.
- Initiate a process aimed at identifying ex-situ specimens for re-introduction to the country.
- Initiation of work to identify known alien invasive predators of the species being protected and means of ensuring their eradication.
- Initiation of work to identify critical habitat areas for the identified species and the means of ensuring their preservation.

Barbados 4th National Report to the CBD in 2011 mentions invasive species 38 times, highlighting the importance of this national priority threat to the global biodiversity of Barbados. Goal 6 of the NBSAP is to control threats from invasive alien species. This goal is supported by two specific targets: Target 6.1. Pathways for major potential alien invasive species controlled and Target 6.2. Management plans in place for major alien species that threaten ecosystems, habitats or species, and calling for a comprehensive monitoring programme needs to be developed in order to evaluate the effectiveness of the measures being undertaken. Furthermore Target 2.1: Restore, maintain, or reduce the decline of populations of species of selected taxonomic groups also references invasive species as a specific threat..

The Dominica National Biodiversity Strategy and Action Plan (2014-2020) According to the NBSAP IAS are one of the five most serious threats facing Dominica with an “increased incidence of invasive species.” “Despite the efforts implemented under the 2001 NBSAP, Dominica has suffered from the negative impacts of alien species” and highlights the presence of the lionfish and the invasive grass, *Halophila stipulacea*, and “laments the presence of the *Puerto Rico crested anole*, the *chytrid fungus* and the *palm mite*.” It states that the “Ministry of Agriculture needs to strengthen its quarantine procedures and expand its *ex-situ* conservation efforts to increase the local gene pool of endangered species.”

Dominica’s 5th National Report identifies the control of invasive species as a high priority based largely on the impacts of introduced alien species which are having a serious negative impact in sectors “such as; forestry (cane frog), agriculture (black sigatoka disease) and fisheries (lion fish and sea grasses).” Of all of the threats highlighted in the last Report the threat of IAS is the only one that has increased with the “trans-boundary movements” of “problem species” a major cause of concern. Recommended actions involve resource allocation to “counter” introductions and increased awareness. The document proposes the revision of existing legislations and adaptation of new legislations with respect to the regulation of the introduction of alien species. It further suggests the development of public education programs to raise awareness on the impact of invasive alien species on biodiversity, the creation of a comprehensive species database, and the protection of threatened species and areas. Dominica’s 2014 - 2020 Strategy and Action Plan reaffirms the country’s commitment to these objectives by selecting biodiversity targets of high priority

Grenada's 5th National Report to the CBD dated July 2014 asserts that “Grenada's wildlife species face habitat destruction, unsustainable extraction and bad hunting practices. The main reasons for these threats include lack of or limited public education, limited enforcement and monitoring, lack of adequate legislation and invasive alien species. Furthermore, the marine and coastal ecosystem of coral reefs, mangroves and sea grass beds which provide spawning, hiding, recruitment and foraging habitats for assemblages of reef species, migrant pelagic and vagrant species are also threatened by invasive alien species. The report calls for capacity to be built to contend with the threat of invasives. The endangered Grenada Frog is now threatened by the globally challenging *Bactrachochytrium dendrobatidis* fungal infection detected in 2009, and competition from the invasive Johnstone frog (*Eleutherodactylus johnstonei*) (Berg, 2011). In 2014, the iconic Grenada Dove continues to be threatened by intense pressure on its habitat largely from physical development, invasive species and climate change. Predation by invasive species primarily mongoose, rats and possibly feral (wild) cats is without a doubt causing a reduction in the Grenada Dove population. The invasive lion fish (*Pterois volitans*) is stated to be a key factor in the decline of reef fish stock. Target 9 for action is “Invasive alien species prevented and controlled”.

St Kitts and Nevis National Biodiversity Strategy and Action Plan to the CBD dated February 3rd 2016 establishes . Target 7- By 2020, invasive alien species and pathways are identified and prioritized and measures are in place to manage pathways to prevent their introduction. (Aichi Target 9), with the supporting indicators of A national policy on sustainable management of invasive alien species, rare, endemic, endangered, and threatened species developed and components implemented. The NBSAP further notes the need to combine species management principles related to both invasive and alien species and focusing on identifying and eradicating pathways for their introduction. The 2008 National Biodiversity Strategy and Action Plan makes reference to the impact of IAS, namely the pink hibiscus mealybug and the tropical bont tick, and notes that many other invasive crop pests have been brought under successful biological control. However, it notes that “the specific route for the introduction of the invasive species is generally not known.” Reference is also made to the red-legged tortoise and the mountain chicken (*Leptodactylus fallax*) both of which are threatened, amongst others, by mongoose predation and the accidental introduction of the Cuban tree frog which may pose a threat to native frog species. Other IAS such as the African vervet monkey, white-tailed deer and rat species are also mentioned. The NBSAP takes cognisance of the fact that IAS can outcompete native species and that this has “certainly occurred in St Kitts and Nevis, but to what extent is not known.” The NBSAP does not provide for any actions with regard to IAS management despite acknowledging that they pose a threat to biodiversity.

The St. Lucia 4th National Report to the CBD in 2010 references introduction of invasive alien species such as feral pigs and species from the pet trade that have found themselves in the wild. The report also notes increases in alien pests and diseases of external origin which are impacting the biodiversity sector and food security. Invasives are considered in the top three threats to trees, plants invertebrates, amphibians, reptiles and birds. One of the root causes for the declines the island's diverse range of forest species, including the Fer-de-lance and other reptilian species were given as alien invasive animals such as the opossum (manicou), rats, dogs, cats, feral pigs, the mongoose and other alien invasive reptiles and amphibians, Mongooses, introduced in the late 19th Century, could be the main cause of many reptiles and ground-nesting birds declining. Feral pigs are increasing in number, damaging the forest and endangering a variety of wildlife. Alien green iguanas could compete and hybridize with the Saint Lucia iguana.

St Vincent and the Grenadines

The Fourth National Biodiversity Report of St. Vincent to the UNCBD notes that Invasive species are also on the rise, presenting much challenge to forest biodiversity. One example of this is the Cattle Egret (*Bubulcus ibis*) whose roosting habits have been linked to loss of Mangrove at the Brighton beach area. It appears that toxins caused by build-up of faecal deposits have polluted wetland soil, destroying plant roots. Another example is that of the introduced Armadillo (*Dasyus novemcinctus*) which has done considerable damage to the ecosystem in the Vermont watershed, undermining trees, accelerating erosion and thereby threatening native biological resources. (InERT, 2006: 33). While the National Report of Saint Vincent and the Grenadines to the Third International Conference on Small Island Developing States July 2013 notes that the impact of IAS on agriculture is very high and increasing; for forest and costal forest/mangroves it is high with increasing impact; while for marine, coastal, coral reefs and inland waters it is moderate impact but increasing.

The government of Saint Vincent has signed the St. Georges Declaration (SGD) of Principles for Environmental Sustainability in the OECS, ratified the Convention on Biological Diversity (UNCBD) and met all of the obligations associated with these agreements. The government has also ratified the United Nations Framework Convention on Climate Change (UNFCCC), the Convention to Combat Desertification (UNCCD) [and fight land degradation], the Cartagena Protocol on land based sources of marine pollution, and the Stockholm Convention on persistent organic pollutants (POPs). St. Vincent and the Grenadines has also signed on to the Caribbean Challenge Initiative (CCI) with the pledge to protect 20% of its near shore marine and coastal

resources by 2020. All of these efforts are designed to conserve the island’s natural resources, manage its biodiversity resources and ensure a clean safe and healthy environment.

Section 7. Knowledge Management. Outline the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives, to assess and document in a user friendly form, and share these experiences with relevant stakeholders.

The main strategy for knowledge management will be to establish partnerships with academia, NGO and public and private sector entities to jointly compile and analyze data and subsequently disseminate information and intelligence via existing media that target clients of these stakeholder groups. The objective is to tap into sustainable communication channels without having to use significant project funds to establish any new communication channel such as websites. Where possible this partnership will identify champions with a significant presence on social media and package materials for these champions to disseminate via their social networks. The focus will be both to highlight the native or endemic species and their value to biodiversity and sustainable livelihoods and on the other hand the impact of the invasive species on the native or endemic species and livelihoods. Where such partnerships for example with Academia, the Scouts movement or Girl Guides; environmental groups etc. are available the project will avail this opportunity to train their staff to carry out sensitization programmes with their constituents. The main purpose is to create greater awareness of native or endemic species and to change human behaviors that directly or indirectly result in the introduction of invasive species. Special emphasis will be paid in this regard to travelers; the ornamental trade; and the pet and aquaria trade.

Component 5 of the proposed project lays out several tools and mechanisms which will contribute to the knowledge management approach of the project, including: shared methodologies for prevention - national to regional and inter-island links and learning formalized; national data exchange for monitoring systematized and developed of a regional App or ID IAS risk factsheets developed for ports of entry (tailored for countries).

The completed, GEF-supported project, Mitigating the Threats of Invasive Alien Species in the Insular Caribbean developed a website, www.ciasnet.org is now a premier resource for IAS information in the Caribbean. The web site is maintained by CABI and cooperation is continuing with CABI to strengthen this on line resource as a global resource for information on IAS in the Caribbean, which will be further enhanced through the proposed project. Furthermore reciprocity and learning exchanges with the Pacific Island initiatives will be further enhanced.


PART III: approval/endorsement by gef operational focal point(s) and GEF agency(ies)

A. RECORD OF ENDORSEMENT¹⁰ OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the [Operational Focal Point endorsement letter\(s\)](#) with this template. For SGP, use this [SGP OFP endorsement letter](#)).

| NAME | POSITION | MINISTRY | DATE (MM/dd/yyyy) |
|-------------------|-----------------|----------------------------------------------------------|----------------------|
| Diann Black Layne | GEF Focal Point | Ministry of Foreign Affairs, Antigua and Barbuda | 02/18/2016 |
| Rickardo Ward | GEF Focal Point | Ministry of Environment and Drainage, Barbados | 02/17/2016 |
| Lavern Queeley | GEF Focal Point | Ministry of Sustainable Development, St. Kitts and Nevis | 02/22/2016 |

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies¹¹ and procedures and meets the GEF criteria for project identification and preparation under GEF-6.

| Agency Coordinator, Agency name | Signature | Date (Month, day, year) | Project Contact Person | Telephone | Email Address |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------|---------------------------------------|---------------------|---------------------------------|
| Brennan Van Dyke, Director, GEF Coordination Office, UNEP, Nairobi |  | April 4, 2016 | Kristin Mclaughlin Task Manager | +1-202- 974-1312 | Kristin.mclaughlin @unep.org |

¹⁰ For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

¹¹ GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF

C. ADDITIONAL GEF PROJECT AGENCY CERTIFICATION (APPLICABLE ONLY TO NEWLY ACCREDITED GEF PROJECT AGENCIES)

For newly accredited GEF Project Agencies, please download and fill up the required [GEF Project Agency Certification of Ceiling Information Template](#) to be attached as an annex to the PIF.

**Reduce the Risk to Human and Natural Assets Resulting from Climate Change
Regional Consultation on Invasive Species
Bay Gardens Hotel
Saint Lucia**

February 25-26, 2015

| | Country | Name | Designation/Organisation | Contact No. | E-mail |
|-----|-----------|---------------------------|---------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------|
| 1. | Antigua | Dr. Janil Gore-Francis | Plant Protection Officer | 1 268 7641255 | janilg@yahoo.com |
| 2. | | Mr. Mark Archibald | Fisheries Officer | 1 268 770 0114 | archibaldmk@gmail.com |
| 3. | | Mr. Adriel Thibou | Forestry Officer | 1 268 7205510/764 1272 | athibou@gmail.com |
| 4. | | Mrs. Helena Jeffery Brown | Veterinary Officer, Environment Division | 1 268 462 4625/562 2568 | Jefferybrown.helena@gmail.com |
| 5. | Dominica | Mr. Reginald Thomas | Head, Livestock Veterinary Services | 1 767 616 0140 | forestvet@gmail.com |
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| 7. | | Mr. Norman Norris | Fisheries Officer | 1 767 266 5291 | nojnorris@gmail.com |
| 8. | Grenada | Mr. Paul Graham | Head, Pest Management Unit, Ministry of Agriculture | 1 473 440 2708 | paulgraham1957@gmail.com |
| 9. | | Mr. Anthony Jeremiah | Senior Forestry Officer, Forestry Department | 1 473 440 2708 | tonydove2@gmail.com |
| 10. | | Mr. Olando Harvey | Biologist & Chairman, Task Force dealing with invasive lion fish | 1 473 443 9335 1 473 420 7301 | landokeri@yahoo.com |
| 11. | St. Lucia | Mr. Augustine Dominique | Protected Areas Manager | 1 758 468 5886 | augustine.dominique@gmail.com |
| 12. | | Ms. Jannel Gabriel | Biodiversity Coordinator | 1 758 468 3999 | jannelrgabriel@gmail.com |
| 13. | | Ms. Francillia Solomon | Bio-safety Coordinator | 1 758 4518746 Ext 5860 | fransolo4@gmail.com |
| 14. | | Mr. Alwin Dornelly | Assistant Chief Forestry Officer | 1 758 720 2255 1 758 457 3908 | Alwin.dornelly@govt.lc |
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| 16. | | Allena Joseph | Department of Fisheries | 468 4140/725 2080 | Alena.joseph@govt.lc |

| | Country | Name | Designation/Organisation | Contact No. | E-mail |
|-----|-------------|---------------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
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| 19. | | Mr. Rafique Bailey | Agricultural Officer Research and Development | 1 784 492 8255 | rafiquebailey@yahoo.com |
| 20. | St. Kitts | Mr. Eavin Parry | Environmental Scientist, Department of Physical Planning | 1 869 465 2277 | elvinparry@hotmail.com |
| 21. | | Mr. Randel Thompson | GIS and Oceanography Officer | 1 868 760 8045/466 8739 | dmskn@gmail.com , randel.thompson24@gmail.com |
| 22. | | Ms. Jeanelle Kelly | Agricultural Officer | 1-869-465-2335 Ext. 228 | agridept8@gmail.com , quarantinedoastk@hotmail.com |
| 23. | Montserrat | Mr. Claude Browne | Agriculture & Environment Sectors | 1 664 491 2075/2546 | browneca@gov.ms |
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| 30. | UWI | Dr. Judith Gobin | Lecturer, Marine Biology Department of Life Sciences | Tel: 1 866 662 2002 ext 82046 Fax: 1 868 663 9684 | Judith.gobin@sta.uwi.edu |
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| 32. | CRFM | Peter Murray | Program Manager, Fisheries Management and Development CRFM Secretariat | Tel.: (501) 223 4443 Fax. (501) 223 4446 | peter.a.murray@crfm.int |

| | | | | | |
|-----|--------------------------------------------------|------------------------------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
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| 38. | Durrell Wildlife Conservation Trust | Matthew Morton | c/o - Forestry Department Ministry of Sustainable Development, Energy, Science & Technology | Tel: (758) 453 4866 Cell: 719 8966 | Matthew.Morton@durrell.org |
| 39. | | Anita James | Retired Biodiversity Coordinator | 4685067/ 4524332 | anitavja@gmail.com |